Top management compensation and firm performance - A matter of context?

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Abstract

During the past decades, CEO and board compensation has increased substantially. Top management compensation and firm performance has been an extensively researched subject, and a large amount of previous studies have examined the relation of top management pay and firm performance. However, the findings and discussions have been contradictory and inconsistent. The purpose of this thesis is to examine if there is a relationship between the top management variable compensation and firm performance. We aim to explore this subject in further depth by focusing on the Swedish context and by studying if contextual issues, in terms of different industries, have an impact on this relation. In order to examine this relation multiple regression analysis were performed. The empirical evidence displays that on a general level, incentive systems of the top management have no significant effect on firm performance. We also conclude that the relation of variable pay and performance is contingent on industry. We therefore argue that the context in which the firm operates has an impact on the investigated relation in this thesis. Furthermore, the Swedish context and the Swedish governance model can be considered as one of the main explanations of the attained result.

Keywords: Top management, Firm Performance, Variable Compensation, Reward System, Pay for performance, Agency theory, Self-determination theory, Contingency theory
Definitions

Firm Performance
In this thesis firm performance refers to a firm’s financial performance. Financial performance signifies the financial result or financial value of a firm and can be reflected in different measurements. Firm performance and financial performance are used synonymously.

Variable Compensation
Variable compensation signifies the part of the total monetary salary that is not a part of the fixed pay. Furthermore, variable compensation is provided in order to reward and potentially enhance performance and motivation. Throughout this thesis variable compensation refers to monetary variable compensation received by the top management.

Top Management
In this thesis the top management of a firm includes the Chief Executive Officer (CEO) and the board of the firm. The top management is also signified as top executives, in instances where the CEO is mainly referred.

Incentive System
Within this study an incentive system refers to general term for a compensation structure mainly implemented to reward, compensate and attract employees within an organization. In this thesis the incentive system regards the top management. Incentive system is used synonymously with Reward System.

Pay for performance
Pay for performance refers to the compensation attained by management or other employee and is tied to a performance measurement, quality portion or other operational or financial goal within the firm. Throughout this thesis pay for performance considers the pay for performance to the top management.
**Abbreviations**

**CEO:** Chief executive officer

**ROA:** Return on assets

**ROE:** Return on equity

**SDT:** Self-determination theory

**OLS:** Ordinary least square
# Table of Contents

1. **Introduction** ................................................................................................................. 1  
   1.1 Top management compensation – a deliberated subject ..................................................... 1  
   1.2 Inconsistency within previous research ............................................................................. 2  
   1.3 Research across industries ................................................................................................. 4  
   1.4 Purpose and Research question ......................................................................................... 4  
   1.5 Contribution .................................................................................................................... 5  
   1.6 Thesis Disposition ............................................................................................................ 5  

2. **Theoretical Benchmark** ............................................................................................... 6  
   2.1 Why do firms implement incentive systems? .................................................................... 6  
      2.1.1 Supporting evidence ..................................................................................................... 7  
   2.2 Enhanced performance – or money down the drain? ......................................................... 8  
      2.2.1 Contradicting evidence ............................................................................................... 10  
   2.3 Incentive systems and contextual issues .......................................................................... 11  
   2.4 Summary ....................................................................................................................... 12  

3. **Methodological approach** .......................................................................................... 15  
   3.1 Research approach ......................................................................................................... 15  
   3.2 Data Collection ............................................................................................................. 16  
   3.3 Industry Classification .................................................................................................... 17  
   3.4 Time Period .................................................................................................................. 18  
   3.5 Selected Estimates ......................................................................................................... 19  
      3.5.1 Firm performance ....................................................................................................... 19  
      3.5.2 Top management variable compensation ................................................................... 20  
   3.6 Selected Control Variables ............................................................................................ 21  
      3.6.1 Size ........................................................................................................................... 21  
      3.6.2 Growth ...................................................................................................................... 21  
      3.6.3 Debt Ratio ................................................................................................................ 22  
      3.6.4 Risk ......................................................................................................................... 22  
   3.7 Regression Analysis ....................................................................................................... 23  
   3.8 Elimination of outliers .................................................................................................... 25  
   3.9 Assumptions within OLS Regression ............................................................................. 25  
      3.9.1 Multicollinearity ....................................................................................................... 25  
      3.9.2 Distribution of Residuals ........................................................................................... 26  
      3.9.3 Homoscedasticity ...................................................................................................... 26  
      3.9.4 Check for linearity ..................................................................................................... 26  
      3.9.5 Skewness and kurtosis .............................................................................................. 27  

4. **Results** ....................................................................................................................... 28  
   4.1 The relation between pay and performance .................................................................... 28  
      4.1.2 Concluding Remarks ............................................................................................... 32  
   4.2 Pay and performance: an industry comparison ............................................................... 32  
      4.2.1 Finance Industry ...................................................................................................... 32  
      4.2.2 Healthcare Industry ................................................................................................. 34  
      4.2.3 Electric Utility Industry ............................................................................................ 36  
      4.2.4 IT Industry .............................................................................................................. 38  
      4.2.5 Retail Industry ......................................................................................................... 40  
      4.2.6 Concluding remarks ............................................................................................... 42  

6. **Discussion** .................................................................................................................. 45  
   6.1 Outline ......................................................................................................................... 45  
   6.2. Enhanced performance or money down the drain? ......................................................... 45  
   6.3 Practical implications ..................................................................................................... 47
6.4 Variable compensation within the Swedish context ........................................48
6.5 Pay and performance – influence in two directions? .....................................49
6.6 Selected performance measurements ................................................................50
6.7 Contextual issues ..............................................................................................51
6.8 Industrial differences .......................................................................................51
6.9 Further limitations ...........................................................................................54
7. Conclusion ..........................................................................................................55
8. Future Research ..................................................................................................57
9. References ...........................................................................................................58
Appendix A – Distribution of Residuals .................................................................65
Appendix B – Check for linearity ...........................................................................67

List of Figures
Model 1:....................................................................................................................13
Table 1 ....................................................................................................................14
Table 2 ....................................................................................................................23
Table 3 ....................................................................................................................29
Table 4 ....................................................................................................................30
Table 5 ....................................................................................................................31
Table 6 ....................................................................................................................33
Table 7 ....................................................................................................................33
Table 8 ....................................................................................................................34
Table 9 ....................................................................................................................35
Table 10 ..................................................................................................................35
Table 11 ..................................................................................................................36
Table 12 ..................................................................................................................37
Table 13 ..................................................................................................................37
Table 14 ..................................................................................................................38
Table 15 ..................................................................................................................39
Table 16 ..................................................................................................................39
Table 17 ..................................................................................................................40
Table 18 ..................................................................................................................41
Table 19 ..................................................................................................................41
Table 20 ..................................................................................................................42
Table 21 ..................................................................................................................43
Table 22 ..................................................................................................................44
1. Introduction

In this section we open with presenting a background regarding the chosen subject. Further, this section contains a problematization including a discussion of previous studies within this area of research. The section is concluded with contribution, formulated research question, and a thesis disposition.

1.1 Top management compensation – a deliberated subject

During the past years’ headlines such as “IMF calls for shake-up of bank executive pay” (Financial Times, 2014), “Shareholders Rebuke Caterpillar Over Executive Pay” (Wall Street Journal, 2015), and “Critique storm over Nordea bonuses” (Dagens Industri, 2016) have been commonly published in international as well as Swedish media. These issues are related to top management compensation and bonus systems, which have been highly deliberated issues during the past decades (Spector & Spital, 2011). Incentive systems are a common phenomenon among firms and can be implemented in different organizational levels within a company, but the top management of the organization generally receives the most significant bonus. The bonus is commonly a variable compensation tied to a performance measurement within the firm, and is intended to serve as a motivation tool to enhance performance (Grabke-Rundell & Gomez-Mejia, 2002). Furthermore, variable compensation is also considered a strategy to attract a desirable and a highly performing top manager (Conyon, 1997, p 496). In recent decades, CEO compensation together with board compensation has increased substantially (Chaudhri, 2003), with higher overall compensation, increased spread of total pay among top executives and a sharp increase in implementation of reward systems (Frydman and Jenter, 2010).

Corporate scandals is an area that is closely linked to the area of incentive systems. In the past years, several significant corporate scandals have occurred. Internationally eminent examples of corporate scandals are Enron, Tyco, Lehman Brothers and WorldCom (Frey & Osterloh, 2005) and Swedish instances are SCA and Skandia (The Guardian, 2015; The Economist, 2003). Further, Jory, Ngo, Wang & Saha (2015) discuss corporate scandals and how the market respond to it, and the link to the CEO of the organization. Scandals can stem from different reasons (Jory et al. 2015) however; it is not uncommon that scandals occur because of the actions taken by the firm’s CEO or top management. Actions taken by the top management can cause the firm immense problems, since the CEO or the members of the board is presumed to have considerable influence of the overall firm action (Kuhn & Ashcraft, 2003). Even though
incentives often are used to control the executive by tying the performance of the CEO directly to the performance of the firm, incentive systems can also incline the CEO to take actions that contain a higher degree of risk or even behavior that are outside legal boundaries of the firm (Frey & Osterloh, 2005).

The subject of top management compensation has accordingly gained a considerable amount of public attention, as well as a high degree of academic interest. However, a significant part of previous studies have focused on pay for performance in the United States (van der Laan, van Witteloostuijn, & van Ees, 2010). This entails that a substantial part of previous research has been conducted within a national context and under a governance system which characterizes Northern America. However, since the environment, which signifies the Anglo-American setting differs considerably from the Swedish context and governance system (Carlsson, 2007), this gives a suitable opportunity to study pay for performance in a new setting and within a new environment due to eventual country level differences (Hüttenbrink, Oehmichen, Rapp, & Wolff, 2014). The structure of the Swedish corporate governance system has historically been portrayed by concentrated ownership, and a strong influence of the Swedish state (Jonnergård, Kärreman & Svensson, 2004). By focusing on the Swedish market, we contribute to this field of research by studying pay for performance in another environment and within a different governance context compared to a substantial part of previous research.

1.2 Inconsistency within previous research
The substantial increase in CEO and board compensation has been an extensively researched subject, and a large amount of previous studies have examined the relation of top management pay and firm performance (e.g. Lilling, 2006; Attaway, 2010; Banker, Darrough, Huang, and Plehn-Dujowich, 2013). However, the findings and discussions have been contradictory and inconsistent. Banker, Darrough, Huang and Plehn-Dujowich (2013) findings show, that while the salary of top management is positively correlated to performance, top management bonus shows of no such positive relation. These authors therefore argue that it is critical to separate variable pay for performance and fixed salary when discussing the relation of executive pay and performance. This non-relationship of bonus and performance has also been supported by several other studies in various settings and under different conditions (see: Randøy & Nielsen, 2002; Guo, 2013; Basuroy, Gleason. & Kannan, 2014). Furthermore, a study conducted by
Wald, Palmon & Brick (2006) indicate that variable pay for performance is not correlated with enhanced performance – but rather associated with firm underperformance.

Even though an extensive amount of previous studies attained results have indicated that the implemented top management reward systems lacks positive impact on firm performance, there are other studies which have found opposing results. Hall and Liebman (1998) have found a strong positive relationship between variable pay and performance of the firm and this result has further been confirmed by Chen and Ma (2011). The positive impact of pay for performance has also been stressed and defended by Jensen and Murphy (2010), who argue that the CEO compensation can be considered essential in enhancing firm performance. Even though these authors state that the huge amount of CEO and board compensation can be problematic, it is not the amount paid that is the problem – but rather how the CEO and the board are compensated. Jensen and Murphy (2010) thereby argue that it is critical that the variable compensation is tied to performance; otherwise it will have no positive effect for the shareholders of the firm.

The inconsistency within previous research indicates that no conclusive statement can be made if pay for performance is connected to the performance of the firm on a general level. This is problematic, since it is ultimately the shareholders that will pay for the vast bonuses to the top management. If pay for performance does not increase the performance of the firm, the shareholder’s investments are inadequately spent (Frydman & Jenter, 2010). However, this issue is not only a significant concern for the shareholders of the firm, but also a concern for the remaining actors within society. The increasing levels of the variable pay to top management reduce the amount of other investments, investments which potentially can improve other parts of the society (Grabke-Rundell & Gomez-Mejia, 2002).

To conclude, the results regarding the relation between CEO and board earnings and firm performance are inconsistent (Jackson, Lopez & Reitenga, 2008) and have generated a significant general interest as well as an academic debate. Therefore, the contradicting and inconsistent evidence discussed above shows of a need for further research within the area, and indicates that exploration of new angles and ideas are required.
1.3 Research across industries
The contradictions within previous research also indicate a demand for further research within the area. Even though a vast amount of studies has been published concerning this field of research, some angles need to be explored further. Findings by Matolcsy and Wright (2011) implicate that the variable pay’s impact on a firm’s performance is dependent on the context in which the firm operate and that an organization with top executive variable compensation better adjusted to the context shows higher performance. Hou, Wanrong, Richard, Priem and Goranova (2014), discuss the relation between firm features and pay for performance and contend that the conditions in which the firm operates need to be taken into consideration when implementing an incentive system. This indicates that the settings in which the firm operates potentially can impact the effect of variable pay on performance.

Several studies have been published concerning pay for performance and firm performance within different specific industries. For instance, Sun and Huang (2013) have investigated the relationship of firm performance and incentive programs within the insurance industry, and Rieter, Sandoval, Brown and Pink (2009) within the Healthcare industry. Further, John and Qien (2003) have explored this subject within the banking industry and Shim and Lee (2003) among firms in the service industry. However, even though numerous studies have explored the relation of pay for performance and firm performance within different industries, studies exploring the differences across industries are limited. In our upcoming thesis, we therefore aim to explore this subject in further depth by examining variable pays’ impact on performance in various industries.

1.4 Purpose and Research question
The purpose of this thesis is to examine if there is a relationship between the variable compensation to the top management and the financial performance of the firm. In our thesis we aim to explore this subject in further depth by studying if contextual issues, in terms of different industries, have an impact on the relation between the reward system of the top management and firm performance. Further, our study will be conducted within the Swedish context. We therefore state our research question as follows:

Do incentive systems of the top management affect financial performance in Swedish firms and can any industry differences be detected?
1.5 Contribution
Even though the area has been subject to a large amount of research, the last word regarding incentive systems is far from said. The contradicting results in previous research (e.g. Core, Holthausen, & Larcker, 1999; Devers, Cannella, Reilly & Yoder, 2007) indicate a need for further research within the area, as well as an exploration of new angles. Furthermore, if variable pay does not in fact enhance managerial performance and firm performance, this entails that the shareholder’s money is inadequately spent. Our study is therefore of interest for organizations, shareholders and scholars. With background in recent corporate scandals, we argue that this subject is of interest to other stakeholders as well as the society as a whole. A considerable part of previous studies has been conducted in the U.S. and the study of pay and performance in Scandinavia is limited. By performing our research within the Swedish context, we contribute to this field of research by studying pay for performance under different conditions and within the unique governance structure, which characterize Swedish firms. This study further brings theoretical relevance by examining industrial impact on variable compensation and firm performance, in order to detect the influence of contextual factors. This relation will be studied in light of Contingency theory, and by doing so, we will study pay for performance within a theory exceeding the usually included theories within this research field.

The main findings within our study displays that on a general level, variable compensation to the top management have no significant impact on the firm’s financial performance. Further, we have detected inter-industry differences regarding this relation. In the Healthcare sector, we find a positive and significant relation between variable compensation and performance. We therefore conclude that the context in which the firm operates has an impact on the investigated relation within this study. Furthermore, the Swedish context and the Swedish governance model can be considered as one of the main explanations of the attained results.

1.6 Thesis Disposition
The thesis is divided into eight different parts, opening with a theoretical framework which comprises relevant theories and previous research regarding the area. In section three the selected method is introduced and we discuss the research design. Further, we present the selected variables and an illustration of the regression models is further explained. Conclusively, the results and possible explanations are discussed in light of previous research. We close this thesis with concluding remarks and suggestions for future research.
2. Theoretical Benchmark

In this section we start with a meta theory concerning the most relevant theories related to the area of incentive systems. With background in previously conducted studies within this area of research, we formulate three hypotheses. The section is concluded with a summarization of discussed previous research.

2.1 Why do firms implement incentive systems?

In the introduction of this thesis we discuss the sharp increase in CEO compensation during the past decades. The relation of firm performance and variable compensation can be illustrated through Agency theory, which is a well-established theory within this area, as well as in a substantial part of other fields of research (Eisenhardt, 1989). This theory interprets the relationship of the agent and the principal (Shapiro, 2005; Nouray & Daroca, 2008). Within Agency theory, the relationship between the principal and agent is described through the metaphor of a contract, where the principal delegates responsibility and influence to an agent (Jensen & Meckling, 1976). Within the context of reward systems, the agents are the top management of the firm, and the principals consist of the shareholders of the firm.

When a principal gives the agent an assignment or an employment, several issues may occur. First of all, the agent may not have the same intentions or aims as the principal. This can occur since the agent may benefit farther personally by pursuing actions, which are not the most beneficial or suitable from the principal point of view (Shapiro, 2005). An underlying assumption within Agency theory is that the agent is mainly driven by self-interest and will act in ways which are the most favorable for him or her. The contract of the agent and the principal can therefore be problematic due to a conflict of interests (Jensen & Murphy, 1990). Secondly, the principal-agent relation can be characterized by a lack of control. This problem may occur since it may be too demanding for the principal to control and confirm that the agent is doing what he or she is supposed to do. This concern is therefore highly related to asymmetric information between the principal and the agent. Both of these issues are parts of what is referred to as the agency problem (Eisenhardt, 1989).

The argumentation held within Agency theory is often connected to Expectancy theory (Sloof & Praag, 2007). This theory was first developed by Vroom (1964) and explicates the relationship of incentives and the motivation of the individual. Expectancy theory is built on
three assumptions regarding behavior: an individual's perception that effort is linked to performance, the individual's expectation that received compensation is linked to his or her performance, and that the motivation of the individual depends on how the individual values a received reward (Lawler, 2000). By strengthening an employee’s or other executive’s perception of these relations, the motivation can be increased and thereby, the person’s performance (Sloof & Praag, 2007). In resemblance with Agency theory, Expectancy theory thus supports the argumentation behind incentive systems when applied the context of pay for performance and has gained support by amongst others Kominis and Emmanuel (2007).

The agency problem between the owners of a company and the top management, can be addressed through an incentive system. This will allow the owners to tie the interests of the top management to the performance of the company, and thereby assure that the agent will act in a way that is in line with the interests of the owners (Jensen & Meckling, 2006). Furthermore, by implementing pay to performance for the top executive of the company, the problems related to self-interests are decreased, since these interests will shift to become the same as the company at hand. By doing so, the top management will strive to fulfill the goals of the firm, since this ultimately aligns with their own goals (Shapiro, 2005). Hence, the incentive system does not make the executive change his or her motivation to become less driven by self-interest, but rather tie the top managers’ self-interest to affiliate with the interest of the owners.

2.1.1 Supporting evidence
The argumentation outlined in Agency theory above is supported by Jensen and Murphy (2010) who strongly defend the notion of performance based compensation for top executives. Jensen and Murphy (2010) suggest that the substantial amount of CEO variable compensation is a relatively insignificant expense in large corporations, considering that it will motivate the CEO to outperform. According to this argumentation, if the compensation is tied to the performance of the firm, this will increase competitiveness and innovation, features which are vital if the firm is going to increase its financial performance in the long term. In a previously conducted study, Jensen and Murphy (1990) test the pay for performance sensitivity amongst CEO’s. The findings of this study display that when the shareholder wealth increases by 1000 US dollar, the total bonus and salary of the chief executive increase by approximately two cents, suggesting that the change of the bonus and salary are very low compared to change in performance. Jensen and Murphy (1990), therefore argue that the incentives are too low to change the
motivation and the behavior of the top management. Hence, the rewards in terms of bonuses need to be increased in order to truly impact the behavior of the top management.

The relationship of pay for performance and performance has been confirmed by amongst others Hall and Liebman (1998) and Deckop, (1988). Hall and Liebman (1998) used a fifteen-year panel data set including large public firms in the U.S. market, and the findings imply a strong positive relationship between CEO compensation and company performance. Similar findings have been detected by Sigler and Porterfield (2001), who examined the relationship between CEO compensation and firm performance within the banking industry. The retained results indicated a strong positive relationship between pay and performance. Lilling (2006), also find a positive relationship between CEO compensation and firm performance, reflected by market value of the firm. An although weaker but positive relationship between pay for performance and firm performance has also been confirmed by Attaway (2010), who examined this relationship within the computer and electronics industry in the middle of the 1990’s.

To conclude, there are a substantial number of conducted studied which supports an overall positive relationship of pay for performance and firm performance within different contexts and industries. This indicates a support for the assumptions outlined within Agency theory and Expectancy theory discussed above. With background in Agency theory and in line with the results obtained by Hall and Liebman (1998), Sigler and Porterfield (2001), Lilling (2006) and Attaway (2010), we formulate the following hypothesis:

**H1a:** Top management variable compensation has an overall positive impact on financial performance.

### 2.2 Enhanced performance – or money down the drain?

Agency theory has gained support by a several number of studies, but during recent years this theory has also been under extensive criticism and other theories have been developed. Self-determination theory (SDT) is highly connected to a person's behavior and work motivation. Further, SDT also addresses personal distinctions in a person's orientation towards the commencement and regulation of their conductions and actions (Frey & Jegen, 2001). The theory is consequently also closely connected to the relation between motivation on different levels and pay for performance. Further, SDT can be described as a model or a continuum
including three different parts: amotivation, intrinsic motivation and extrinsic motivation. Amotivation refers to when a person is completely without self-determination and is neither internally or externally motivated. Extrinsic motivation means that a person's self-determination can vary in different types of levels depending on external factors. The third motivational form within SDT is the intrinsic motivation part within the continuum, which is invariantly, self-determined (Gagné &Deci, 2005). Within the context of reward systems, the top management variable compensation is an external reward, which is presumed to increase motivation.

A central aspect within SDT is the clear distinction between autonomous behavior and controlled behavior (Gagné & Deci, 2005). Autonomy could be explained as acting with a conscious volition and involvement in choice. Dworkin (1988) further explains autonomy as a person's operations at the highest level of consideration and reflection. An example within the autonomy motivation part of the SDT is intrinsic motivation. In short, intrinsic motivation is when persons are acting and performing because they find the assignment or task interesting and of own internal willing. The contrast to the autonomous part within this theory is controlled behavior, which occurs due to external pressure or external reward. An example of this is the extrinsic motivation, when a person is motivated by external factors and therefore driven to act in a specific way to have the opportunity to achieve the reward. In the context of incentive systems, pay for performance constitutes of an external reward and is therefore a mechanism which is implemented to control behavior. The extrinsic motivation part is further important when attracting the most desirable top management to the firm. To be able to provide variable compensation to a potential new CEO or a new member in the board should increase the extrinsic motivation. In turn, this may enhance financial performance.

Even though extrinsic motivation and intrinsic motivation are described as two counterparts in a continuum, these two extremes integrate. A relevant question related to this theory therefore concerns how intrinsic and extrinsic motivation are connected to regulate a person's individual level of motivation (Calder & Staw, 1975). A person's motivation constitutes of both internal and external motivation, however, these integrate with each other. For instance, by receiving an external reward, intrinsic motivation could be reduced and thus decreasing the total amount of motivation. SDT therefore suggests that under particular circumstances, external rewards such as variable compensation, could damage executive motivation and thereby impair performance. The interaction between intrinsic and extrinsic motivation is dependent on the assignment at
hand as well as circumstances in the environment. To conclude, the total amount of a person's motivation is dependent on both intrinsic and extrinsic motivation. By increasing one part, the other part may be reduced and a crowding-out effect can occur (Walton, 2012).

2.2.1 Contradicting evidence
Reward systems and other external factors as pay for performance are implemented to control the behavior and performance of the agent. However, reward systems could also come with a cost. There is a considerable amount of evidence which suggest that external incentive systems could harm the relationship between the agent and the principal. Further, Walton (2012), states that evidence shows that incentives solely do not enhance firm performance, rather the opposite. Incentives can harm and crowd out the social preferences of the agent and therefore harm the motivation to perform on own willing, and the firm performance can be decreased.

Miller, (1995) conducted a research regarding the relationship between the firm performance and executive compensation, though the result did not show any assist for a linear regression between these two variables. Firth et al. (1995) also failed to find such a relation between CEO compensation and firm performance. Further, Murthy & Salter (1975) received a result that goes in line with the one Miller (1995) attained; there is no statistically significant relationship between incentive systems and firm performance. Randøy and Nielsen (2002) have investigated the same relationship in a study concerning Sweden and Norway. The result of this study goes in line with the others above; the authors found no significant relationship between company performance and the compensations of the CEO. Further, Wald, Palmon and Brick, (2006) found that the incentive system led to underperformance for the organizations within their study.

There is substantial empirical evidence related to the area of intrinsic versus extrinsic motivation (Walton, 2012). James (2005), claims that there are several clear corroborations that extrinsic incentives tend to crowd out intrinsic motivation and hence reduce the effort of the employees within the organization. Furthermore, de Charms (1986), also claims that intrinsic and extrinsic motivation may not be added ingredient within their effect on motivation. The argument follows that the extrinsic motivation that includes monetary rewards can reduce the intrinsic part of a person to perform a task. Hence, this can have an effect the firm performance since the internal motivation is reduced.
With background in the discussed theories in this section, and in line with the results obtained by Murthy & Salter (1975), Miller (1995) and Randøy and Nielsen, (2002) we formulate the following hypothesis:

\[ H1b: \text{Top management variable compensation has no significant impact on financial performance.} \]

2.3 Incentive systems and contextual issues
The discussed theories above are concepts which are commonly examined within top management compensation and pay for performance. However, in order to detect potential industrial differences within pay for performance, we find a need to include alternative interpretations of the area. Contingency theory is a well researched theory and can be framed and interpreted in many different aspects and situations. The theory stems from behavioral research and is based on the notion that there is no ultimate organizational structure that is effective in all cases, but rather dependent on the external context (Donaldson, 1996). Thus, the core of the Contingency approach indicates that the successfulness of an implemented strategy is dependent on the match between strategy, firm and environment (Balking & Gomez-Meija, 1987). The literature is extensive and provides evidence that a firm’s external context has a remarkable impact on the more internal aspects of the firm, such as the strategy, structure, process, culture, incentives and compensations (Wang & Singh, 2014). Further, Mintzberg (1989) has framed the internal or the organizational context with terms like diversity, uncertainty and stability.

This study aims to investigate whether there are any differences in the relation between pay for performance and firm performance in different industries. An organization needs to handle changes in the environment and adapt to the external factors to be able to stay within the competition on the market. A major external change could be new innovative products, new competitors within the market, and changes in the economic conditions or other external factors. Hence, the organization needs to adapt the internal features to be able to create new consistency accompanied by its outward circumstances (Wang & Singh, 2014).

At the core of Contingency theory there is a notion that the firm needs to maintain a fit between the own internal structure and the external context. Taylor and Taylor (2014), researched the influence of the size of the firm, and how likely small firms compared to large firms were to
implement a new performance measurement system. The result indicated that the small firms were less likely to implement a new system compared to large firms. Smaller firms can have more problems to be able to adapt to external factors and this can make a significant impact on the result. Hence, it can therefore be argued that different industries will show differences in relation of pay for performance and firm performance. In accordance with Contingency theory such a relation is dependent on external factors and different industries may therefore show different result regarding pay for performance.

As discussed in the introduction of this thesis, several studies have indicated that the context in which different firms operate can have an impact on the efficiency of the incentive system, and thus indicating that the settings in which the firm operates potentially can influence the effect of variable pay on performance (Matolcsy & Wright, 2011; Wanrong et al. 2014). These findings can therefore be interpreted within Contingency theory. Furthermore, these findings suggest that the industrial differences, and how well the firm’s compensation strategy is adjusted to the distinctive settings within each industry, may impact the pay for performance. The concept of contingency factors affect on pay for performance and executive compensation has also been examined by Balkin and Gomez-Meija (1987). The research conducted by these authors indicate that the life cycle stage in which the firm is currently in as well as industry characteristics and the match between compensation strategy, environment and the firm, do have an impact on effectiveness of the compensation strategy. Within our study, these results suggest that industrial characteristics may affect the relation of pay for performance and performance, since this relation is dependent on how well the firm’s compensation strategy match environmental factors.

With background in the Contingency Theory and in line with the results obtained by Balkin and Gomez-Meija (1987) we formulate the following hypothesis:

\[ H2: \text{Top management variable compensation and firm performance is contingent on industrial context.} \]

2.4 Summary
Top management compensation is an area that has been under debate for a long time, and is still a hot topic (Gentry, 2012; Bebchuk, Jesse & Fried, 2006). In this theory section we have reviewed and discussed this subject in light of several theories in order to enlighten both
supporting evidence as well as contradicting evidence concerning pay for performance. As stated above, the attained results differ among previous studies. In Table 1 below, previous studies examined are summarized. The section was introduced by presenting Agency theory, which can be described as one of the main theoretical ground points to why firms choose to implement incentive systems. Secondly, we introduced an opposing theory, SDT, as well as other theoretical evidence suggesting that internal motivation may be a superior predictor of performance. Furthermore, since our thesis will focus on industrial differences we discussed pay for performance in the context of Contingency theory.

Each of the sections in the theoretical framework were concluded with a hypothesis formulated with background in previous literature. These hypotheses will be used further on in the thesis to answer the formulated research question. In Model 1 below, we have illustrated these hypotheses in relation to our research question. The relations outlined in this model will be used as a standpoint in our upcoming method and later on in the discussions of the obtained results.

*Model 1: The formulated hypotheses which will be examined in the study. Top management variable compensation is assumed to have a positive or no impact on firm performance. The industry effect is displayed within Hypothesis 2.*
## Table 1: Summary of previously conducted studies within the area of incentive systems. The table presents the authors, year and the main theory within the study as well as the result concerning variable compensation and firm performance.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Theory</th>
<th>Compensation and performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attaway</td>
<td>2010</td>
<td>Agency Theory</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Balkin, Gomez-Meija</td>
<td>1987</td>
<td>Contingency Theory</td>
<td>Relation dependent on contextual factors</td>
</tr>
<tr>
<td>Dale-Olsen</td>
<td>2012</td>
<td>Industry Study</td>
<td>General no relation / Industry dependent</td>
</tr>
<tr>
<td>Ely</td>
<td>1991</td>
<td>Industry Study</td>
<td>Significant inter-industry differences</td>
</tr>
<tr>
<td>Hall, Liebman</td>
<td>1998</td>
<td>Agency Theory</td>
<td>Strong positive relationship</td>
</tr>
<tr>
<td>Jensen, Murphy</td>
<td>1990</td>
<td>Agency theory</td>
<td>Incentives too low to increase performance</td>
</tr>
<tr>
<td>John, Qien</td>
<td>2003</td>
<td>Industry Study</td>
<td>Pay, performance sensitivity industry dependent</td>
</tr>
<tr>
<td>Kommis, Emmanuel</td>
<td>2007</td>
<td>Expectancy Theory</td>
<td>N/A</td>
</tr>
<tr>
<td>Lilling</td>
<td>2006</td>
<td>Agency Theory</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Matolscy, Wright</td>
<td>2011</td>
<td>Agency Theory</td>
<td>CEO compensation dependent on firm features</td>
</tr>
<tr>
<td>Miller</td>
<td>1995</td>
<td>Agency Theory</td>
<td>No relationship</td>
</tr>
<tr>
<td>Murthy, Salter</td>
<td>1975</td>
<td>Agency Theory</td>
<td>N/A</td>
</tr>
<tr>
<td>Randoy, Nielsen</td>
<td>2002</td>
<td>Agency Theory</td>
<td>No relationship</td>
</tr>
<tr>
<td>Sigler, Portfield</td>
<td>2001</td>
<td>Agency Theory</td>
<td>Strong, positive relationship</td>
</tr>
<tr>
<td>Reiter et. Al</td>
<td>2009</td>
<td>Industry study</td>
<td>CEO compensation, unrelated to firm performance</td>
</tr>
<tr>
<td>Suan, Huang</td>
<td>2013</td>
<td>Industry study</td>
<td>Firm efficiency, significant with total compensation</td>
</tr>
<tr>
<td>Wald, Palmon, Brick</td>
<td>2006</td>
<td>Agency Theory</td>
<td>Underperformance</td>
</tr>
<tr>
<td>Walton</td>
<td>2012</td>
<td>SDT, Crowding out</td>
<td>Incentives can crowd out social preferences</td>
</tr>
</tbody>
</table>
3. Methodological approach
In this section of the thesis, the research approach is presented. Following this, the data collection is formulated and explained as well as the measurements within the study. This part further contains a section regarding the regression analysis and assumptions. We also include limitations concerning the approach throughout this part.

3.1 Research approach
In this thesis we aim to investigate the relationship between the top management variable pay and firm performance. In order to do so, and to answer our previously stated research question, three hypotheses were formulated. These hypotheses consist of two opposing hypotheses, 1a and 1b, which both are based on well-established theories within the area as well as previously conducted studies. Our second concerns industrial differences and is formulated in regards of previous literature. In order to answer our hypotheses 1a and 1b, we will study the total sample. Further, we perform a regression analysis for each industry sector within the study, in order to answer Hypothesis 2.

The thesis will be based on a deductive approach since there is a substantial amount of previous research within the area (e.g. Shim and Lee, 2003; Randøy and Nielsen, 2002), and the hypotheses are based on previous research as well as established theories. Even though this approach is considered to be the most suitable, it will not enable us to explore and formulate new possible theoretical models within the area of pay for performance. However, an inductive approach does not fit our research, since the purpose of this study is to assess a researched relation which has been examined within previous studies. A deductive approach is connected to expanding developing hypotheses which are based on an already existing area of research (Saunders, Lewis, & Thornhill, 2012, p. 144), in our case Agency theory, SDT and Contingency theory. Further, the deductive approach aims to design a research strategy in order to test the formulated hypotheses. In line with previous researchers that have used a deductive approach, we find this suitable within our study.

This thesis is conducted with a quantitative research strategy. This selected strategy goes in line with previous researchers within the area of pay for performance (Attaway, 2000, Wilson, Chacko, Shrader, & Mullen, 1992). Further, this strategy was selected since we want to be able to make general adoptions from the forthcoming result, which also makes this strategy the most appropriate. A disadvantage with this approach is the difficulty to investigate the underlying
factors within pay for performance in further depth. The generated analysis will thereby not enable a profound explanation of possible deviations, but rather an understanding of the relationship between the included variables. However, since the purpose with this thesis is to investigate the relation between pay for performance and firm performance and draw general conclusions regarding this relationship, we find the quantitative method and deductive approach the most suitable and appropriate. Furthermore, another reason why the quantitative research strategy is preferable is due to the fact that we aim to facilitate for replication of this study and we need to analyze and interpret our data, therefore this method is the suitable (Saunders, Lewis, & Thornhill, 2012, p. 472). It is also of importance for us to be objective while discussing and analyzing the upcoming result and a qualitative strategy can be seen as a more subjective method.

3.2 Data Collection
The data within this thesis consists of secondary data and is gathered from the database Retriever Business. This database is used since it includes all the data we need in this thesis. Furthermore, the data within the database is based on information from Bolagsverket, which is a Swedish government agency that primarily handles the registration of new companies and registry changes for already existing companies. This agency also receives annual reports and provides other with company facts (Bolagsverket, 2016). Further, the data was randomly selected, which means that a formula in excel have randomly chosen our included firms. This is considered as suitable in this thesis since the companies in the population therefore have the same possibility to be a part of the research and this also increase the reliability within the study.

We have included firms independently if they pay out incentives or not to the top management. This means that we have included firms that do not pay the top management any bonus, which can affect the forthcoming result. The choice to include firms independently if the top management receives variable compensation or not can result in a data sample, which contains a substantial amount of zeroes. This in turn can cause a skewed sample which may interfere with the analysis. However, since the population of our research is large Swedish firms, and not solely firms with a variable compensation to the top management, we find this choice the most suitable in order to answer the formulated research question. A further discussion concerning the level of skewness is held in section 3.8 and 3.9.5.
The data collected from Retriver Business is as mentioned above, based on information from Bolagsverket. We have included both companies with and without bonus, though we have detected a potential limitation due to our data collection, which we think is important to highlight. We consider the included companies as legal entities, and it can be a potential mismatch due to the variable compensation and our focus on the legal entity. We have controlled 20 randomly selected companies within our sample that have zero in variable compensation and analyzed their annual report. In some cases, it is stated that the variable compensation to the top management is paid out through a holding company. This is a potential data problem and can in some cases be the reason why some of our companies have a zero in variable compensation. To conclude, the eventual payout may be placed in another legal entity, though, we are aware of this limitation.

After the data is gathered and converted to excel the final sample results in a number of 900 firms, 180 firms within each industry. This number of firms goes in line with previous research within this area that have used about the same number of firms, therefore we choose to have this amount within each industry in our research (Farmer, Archbold & Alexandou, 2013; Randoy & Nielsen, 2002). Further, the sample size must include a large enough sample and fit the selected model to make it possible to draw general assumptions and reliable conclusions from the upcoming result (Bonett & Wright, 2011). The 900 firms within the thesis are all large Swedish firms. In order to classify large Swedish firms, we have applied the definition given by Bolagsverket (2016). In order to be classified as a large company according to Bolagsverket (2016) two of the three following terms must be fulfilled. The three terms are; more than 50 employees in the two previous years, more than 40 million crowns in total assets in the last financial year and 25 million crowns the previous year. The third term is to have more than 80 million crowns in net sales in the last financial year and 50 million crowns the previous year. All companies within our study fulfill at least two of these three terms.

3.3 Industry Classification
This thesis aims to investigate and detect eventual differences between industries and examine if there are differences regarding the relation between variable compensation and firm performance. In order to investigate the potential inter-industry effects within the relation of variable compensation and performance, we have included five industries. The firms are classified and sorted into groups, categorized by industry belonging in order to be able to
identify possible differences and industry related effects. In order to divide the firms into the
industry groups we have used the Global Industry Classification Standard developed by MSCI
and Standard & Poor’s (2016). This industry classification includes ten different industry
sectors, though we have chosen to include five industries. This goes in line with Ely (1991) and
Dale-Ohlsen (2012) who have investigated approximately the same amount of industries.
Further, we also consider that this amount of included industries will give us the opportunity to
have a profound discussion regarding our forthcoming results and comparison between the
different industry sectors. In line with previous researchers, Ely (1991) and Dale-Olsen (2012),
we have selected to include the industries Finance, Electric utilities, IT and Retail.
Furthermore, several studies within this area of research have been conducted within the
Healthcare sector (Kevin J, S 2003; Rieter, Sandoval, Brown and Pink, 2009) and we therefore
also include this sector within this study.

3.4 Time Period
The time perspective in this thesis is consisting of an average of five years and includes the
years 2010-2014. These years are included in order to exclude the direct years of the financial
crises of 2008 crisis, and further we want to have as contemporary figures as possible in our
study. Further, another reason why we choose to include five years in this research is because
of the eventual and possible time lag related to the variable compensation, since the possible
effect of the variable compensation may not be detected in the same period as the reward is
received. The choice to include an average of five years goes in line with previous research
within the area of pay for performance (Attaway, 2000, Gomez-Mejia, Tosi & Hinkin, 1987;
Farmer, Archbold, & Alexandrou, 2013) and is therefore a suitable choice. The results from
these years included in the study can vary annually depending on external factors, which is the
reason why we have chosen to use a mean of the results of the companies from the five years
included (2010-2014). Further, the financial crisis with starting point in 2008 may have affect
the attained the results. Though, it is a balance to use as updated data as possible, which though
can include some potential effects from the financial crisis.

The bonus could be seen in two different ways: either as a reward after a year while achieving
desirable results and reaching the set goals of the firm, on the other hand, it could be given
advance, in order to increase the motivation and thereby conceivably enhance performance. In
this research we have the standpoint that variable pay, or incentives, result in a better financial
performance for the company. The incentives are paid out as a result for a good performance,
to further achieve an even better result and performance the forthcoming year. Time lag could therefore be of additional significance, and this is a further reason why we have chosen a time perspective of an average of five years.

3.5 Selected Estimates
The aim of this study is to examine the relation between the top management variable pay and firm’s financial performance. In order to study this relation, the variables need to be operationalized in terms of selected estimates. Our estimates are selected in line with previous research as well as with regards to the specific settings of our study.

3.5.1 Firm performance
Firm performance is the dependent variable all through our study, and will be equivalent in all of the conducted regression analysis. Within previous research in this area, a variety of performance measurements have been comprised, and the choice of performance ratio should be made in consideration to fit the study. In line with Persons (2009) and Wilson, Chacko, Shrader and Mullen (1992) we have chosen to use a combined ratio consisting of three common performance measurements. This is considered as favorable, since the same performance measurement will be encompassed independent of industry. Since performance of the different measurement may vary dependent on industry, a combining of three different ratios will decrease the risk of industry bias. Hence, the combined performance measurement will be considered as farther reliable than if solely one performance measurement was included in the study.

Return on equity (ROE) is frequently used within this area of research (Matolcsy and Wright, 2011). This ratio is directly related to the shareholders of the company, and is thereby a suitable measurement to connect to the agency-principal relation when measured against executive compensation. Return on assets (ROA) is also a part within our combined ratio and is used by amongst (Matolcsy & Wright, 2011; Elayan, Lau & Meyer, 2003) and operating margin is further included. It is considered that these two are suitable measurements since these reflect opposing aspects of performance in contrast to ROE. The equation below illustrates the chosen performance ratio.

\[
Combined \text{ performance ratio} = \frac{(ROE + ROA + Operating \ margin)}{3}
\]
3.5.2 Top management variable compensation

Top management variable compensation is the operationalized variable representing pay for performance. This variable will thereby be the independent variable when conducting the regression analysis. Previous studies have examined the relation of pay and performance regarding the CEO as well as the CEO together with the board of directors. Fernandes (2008) empirical evidence indicates that the board of directors do not serve as the mediators between the shareholders and the managers as often illustrated. Consequently, this implies that it is suitable to study the CEO and board of directors as a unit. In line with Duffhues and Kabir (2007) and Brick, Palmon and Wald (2006) we have included the variable compensation received by the CEO as well as the variable compensation received by the board of directors. This study will thereby examine the effect of variable compensation of the top management as an entirety, on firm performance.

In previous studies executive compensation is frequently represented as the total amount of executive compensation and variable pay (Leonard, 1990; Attaway, 2010; Farmer, Archbold and Alexandrou, 2013). However, since this study will explore different industries we need to take extra precautions due to inter-industry differences regarding total compensation. We have therefore selected to use a relative measure where the variable compensation is a ratio of bonus in relation to total compensation. Moreover, this measure is considered suitable since it will decrease effects due to firm assets and capability to pay out large compensation to executives. By using a relative measure, the unmodified effect of the bonus to firm performance will be better apprehended. Including firm size as a control variable further reduces the effect due to different size of funds.

A limitation ensuring our operationalization of this variable is that our chosen variable representing pay for performance solely includes the incentive in terms of bonus to the CEO and the board of directors. However, the top executives of a firm are frequently offered other forms of compensation, which can serve as an incentive to enhance performance. These other forms of compensation are commonly in terms of stock options or other forms of share programs (Core, Holthausen, & Larcker, 1999; Adut, Holder, & Robin, 2013). However, even though other varieties of compensation may serve as executive incentives, variable cash bonus is considered to be a commonly used incentive in Swedish firms (Bång and Waldenström, 2009). Since this study aims to examine the Swedish context, we therefore find it appropriate to specify the measurement to variable cash compensation. Furthermore, this will also facilitate
interpretation of the results, since the measurement is distinguished and well defined. The equation below illustrates the chosen pay for performance ratio.

\[ \text{Compensation based on performance} = \frac{\text{Variable compensation}}{\text{Total salary}} \]

### 3.6 Selected Control Variables

In the forthcoming regression analysis, we include four different control variables in order to avoid omitted variable bias. Control variables are further important in order to have a more reliable result. Further, these control variables may possibly have an impact on the relationship that we are researching; variable compensation in relation to the financial performance of the firm. Therefore, these variables need to be taken into consideration and be a part of the regression analysis in this paper and also to enhance the forthcoming analysis and upcoming discussion based on the result. The chosen control variables in this study are; size, growth debt ratio and risk.

#### 3.6.1 Size

The first control variable within the regression model is the size of the firm. This variable is used in previous studies within this area (Cohen, Dey & Lys, 2013) and the relation of firm size and performance has been examined by Gomez-Mejia, Tosi & Hinkin (1987). Size is measured as the logarithm of the firm’s total annual revenue and goes in line with previous research (Mehran, 1995; Elayan, Lau & Meyer, 2003). Larger firms may have more potential to pay out incentives, relatively to smaller firms. The existing literature have detected different evidence regarding the correlation between top executive performance and the size of the company (Elayan, Lau & Meyer, 2003), therefore we choose to include size as a control variable within our research.

\[ \text{Size} = \log \text{Revenue} \]

#### 3.6.2 Growth

The second control variable included in this regression analysis is the growth of the company. Growth is commonly included as a control variable in studies examining firm performance (e.g. King and Santor, 2008; Maury, 2006) since firms with a high growth rate are able to generate higher profits, due to a higher degree of investments. Within the area of top management variable compensation and firm performance, growth as well as growth opportunities is
regularly included as control variables (Farmer, Archbold, & Alexandrou, 2013; Fallatah, 2015; Mehran, 1995). A firm's’ growth rate is calculated as the annual increase of total revenues.

\[
Growth = \frac{Revenue_t - Revenue_{t-1}}{Revenue_{t-1}}
\]

### 3.6.3 Debt Ratio
The third control variable within the regression analysis is the debt to total assets of the firm. To be able to capture eventual possible impact of the financial leverage on the performance of the firm we choose to include this as a control variable within our regression model. This control variable is used in previous research within the area and is measured as the ratio of total book value of total debt to total assets (Elayan, Lau & Meyer, 2003).

\[
Debt Ratio = \frac{Total liabilites}{Total assets}
\]

### 3.6.4 Risk
The fourth control variable integrated in the regression analysis is the firm risk. This variable is measured as the standard deviation of total net revenue. Further, we have chosen to log this variable in order to have more equal numbers as the control variable size while conducting the regression analysis. This measure has been used in previous studies as a control variable (Elayan, Lau & Meyer, 2003), though the impact of firm risk concerning the studied relation of top executive variable compensation and firm performance is uncertain and not predicted.

\[
Risk = Log of standard deviation of total net revenue
\]

The table below presents the exact definitions of the complete set of variables included in the regression analysis.
Table 2. Summary of the included variables within this thesis. The table displays all the variables within the two regression models and how the variables are estimated.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of Variable</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Performance Ratio</td>
<td>Dependent Variable</td>
<td>( \text{ROE} + \text{ROA} + \text{Operating margin} )</td>
</tr>
<tr>
<td>ROE</td>
<td>Part of Dependent Variable</td>
<td>(Profit after financial income and expenses / (Total equity + (Total untaxed reserves * 0.72)))</td>
</tr>
<tr>
<td>ROA</td>
<td>Part of Dependent Variable</td>
<td>((Operating income + Interest income from subsidiaries + External interest income + other financial income) / Total assets)</td>
</tr>
<tr>
<td>Operating margin</td>
<td>Part of Dependent Variable</td>
<td>(Operating Income / Net Sales)</td>
</tr>
<tr>
<td>Variable Compensation</td>
<td>Independent Variable</td>
<td>(Bonus and variable pay / Total compensation)</td>
</tr>
<tr>
<td>Firm Size</td>
<td>Control Variable</td>
<td>Log of Total Revenue</td>
</tr>
<tr>
<td>Growth</td>
<td>Control Variable</td>
<td>(Revenue current year - Revenue previous year) / Revenue previous year</td>
</tr>
<tr>
<td>Debt</td>
<td>Control Variable</td>
<td>Total liabilities / Total assets</td>
</tr>
<tr>
<td>Risk</td>
<td>Control Variable</td>
<td>Log of Standard deviation of total revenue</td>
</tr>
</tbody>
</table>

3.7 Regression Analysis

In order to investigate the connection between pay for performance and the performance of the firm a correlation analysis and an ordinary least square (OLS) regression analysis is conducted, which is a previously used method (Pestana Barros & Nunes, 2007; Randøy & Nielsen, 2002). By performing a correlation analysis, we will be able to examine the link between the variables and how the independent variable and dependent variable correlate. However, a correlation will not disclose how pay for performance effect firm performance, but rather how our chosen variables covariates. This effect will instead be examined in the regression analysis. Regression analysis is considered a suitable statistical method since it allows us to investigate the relationship between our variables within a quantitative context. Furthermore, this chosen approach is commonly performed in previous research within this area, and has been used by amongst others Dale-Olsen (2012) and Ozkan (2011).

We have also supplemented our regression analysis with a robustness check in order to ensure the quality of the method. By doing so, we also ensure the validity of our discussion and this
will bring further weight to the conclusions regarding our research. Furthermore, the robustness check is conducted to critically validate the research and ensure that eventual issues related to the data do not profoundly impact the results. In the robustness test we have included the top management variable compensation as a dummy variable within the regression model. The robustness test is further described under section 5. Further, as written previously in this method section we have used a combined performance ratio within our regression analysis. Though, we have also run the regression with each single performance variable within our combined measure: ROA, ROE and Operating Margin, in order to see whether any differences can be detected. By examining the performance ratios independently of each other, we will be able to detect eventual differences if solely one of the performance measurements would have been selected. This will therefore strengthen the validity of the attained results. The empirical evidence regarding the separated ratios is presented as a note in the result section.

In order to answer Hypothesis 1a and Hypothesis 1b, a regression analysis is performed regarding the entire sample. The purpose of the initial regression model is to study the variable compensation impact on firm performance on a general level. The regression analysis will include the chosen estimates for variable compensation and performance as well as the selected control variables (see chapter 3.6). In addition, this regression analysis includes the industries in terms of dummy variables, and will therefore serve as a preliminary analysis of industrial impact on firm performance. The general regression model is presented in the equation below, where performance is the combined performance ratio, \( b_0 \) represents the intercept of the regression curve and compensation signifies top management variable compensation. The regression equation further includes the four selected control variables, debt ratio, annual growth, firm size, firm risk and a dummy variable representing the different industries.

\[
\text{PERFORMANCE} = \beta_0 + \beta_1 \text{COMPENSATION} + \beta_2 \text{DEBT} + \beta_3 \text{GROWTH} + \beta_4 \text{SIZE} + \beta_5 \text{RISK} + \beta_6 \text{INDUSTRY} + \varepsilon
\]

Following the regression analysis of the total sample, a regression analysis for each different industry will be performed. We will then compare the attained statistical results between the different industries and discuss eventual differences in association to our formulated hypotheses. By doing so, we will be able to answer Hypothesis 2. The regression analysis will include the chosen estimates for variable compensation and performance as well as the selected control variables (see chapter 3.5). The regression model is equivalent in all of the conducted regression analyses and is presented in the equation below, where performance is the combined
performance ratio, $b_0$ represents the intercept of the regression curve and compensation signifies top management variable compensation. The regression equation further includes the four selected control variables, debt ratio, annual growth, firm size, and firm risk.

$$PERFORMANCE = \beta_0 + \beta_1 \text{COMPENSATION} + \beta_2 \text{DEBT} + \beta_3 \text{GROWTH} + \beta_4 \text{SIZE} + \beta_5 \text{RISK} + \varepsilon$$

### 3.8 Elimination of outliers
When examining our initial sample, issues related to outliers were distinguished. In order to exclude extreme values and thereby reduce the potential risk of a biased sample, we have used winsorization. This is a commonly used technique to reduce the effect of outliers in a regression analysis, without reducing the number of observations (Lien & Balakrishnan, 2005). When performing a winsorization on a five percent level, extreme values above the 97.5th percentile and below the 2.5th percentile receive new values on the point of these percentiles. An advantage of winsorization compared to other elimination techniques is therefore that no values are excluded from the sample, (Frank and Goyal, 2005), which can conceivably entail biased effects. All of our included variables have been winsorized at the level of five percent for each average of five years within the total sample as well within the chosen industries. In the performed analysis regarding the entire sample, all of the variables have been winsorized within each industry as well as on a general level. It would have been preferable to limit the winsorization to the industry level to keep the industrial effects completely intact. However, this effect the robustness of the study and entails high levels of skewness and kurtosis (for further discussion see part 3.9.5.). Concerning the regression analysis that is performed within each industry, the winsorization was conducted solely on an industry level. By doing so, the specific characteristics concerning the included variables within each industry are less affected by the winsorization.

### 3.9 Assumptions within OLS Regression
This thesis includes a multiple regression analysis. In order to detect potential errors and to be able to ensure the quality of the research technique, a number of assumptions concerning OLS need to be examined. In order to do so, we include statistical tests for multicollinearity, residual distribution, homoscedasticity and linearity as well as skewness and kurtosis.

#### 3.9.1 Multicollinearity
Prior to performing the regression analysis, we conducted a Variance Inflation Factor (VIF) test to be able to distinguish possible complications with multicollinearity among our independent
variable and control variables. This test is one of the most frequently used tests for multicollinearity (O’Brien, 2007; Maury, 2006). In order to accept the notion that multicollinearity is not a concern among our chosen independent variable and control variables, none of the received values from the VIF-test should preferably exceed the rate of four in order to not have any problems related to multicollinearity (Huang, Lai, G.C., McNamara, & Wang, 2011). None of the attained VIF values from the industries or from the total sample exceed a number of four. We can therefore state that we have not detected any problems regarding multicollinearity within our research.

3.9.2 Distribution of Residuals
One of the assumptions that needs to be taken into consideration when executing a regression analysis is the normal distribution of residuals (Rydén & Alm, 2010). To confirm that the residuals are normally distributed within our sample, we performed a PP plot of the residuals. In the attained results regarding the distribution problems related to non-normal distributed residuals were detected (see Appendix A). However, we have decided to proceed with the analysis since the other assumptions regarding OLS is fulfilled and this regression model is at least fairly robust regarding the un normal distributed residuals. Though, it should be stressed that this can affect the result within this study and we should therefore analyze the result with caution.

3.9.3 Homoscedasticity
In order to check for homoscedasticity, we have investigated the relation between the unstandardized residuals and the independent variable, variable compensation. Even though we find a tendency of violation regarding this assumption among our variables this violation is within an acceptable range. However, it should be noted that this might affect our attained results and upcoming discussion, especially regarding the confidence intervals which potentially could be too wide or too narrow.

3.9.4 Check for linearity
A further assumption concerning OLS Regression is the linear relationship between the independent variable and the dependent variable (Miller, 1995 p. 1377). In order to control that such a relation, exist regarding our included variables, we conducted a scatter plot and added a fitted line to detect if any non linear pattern is present. The distinguished relation between our dependent variable and our independent variable is approximately linear and even though a
complete linear relation between our dependent variable and the independent variable does not exist, any direct violation of this assumption could not be identified. We therefore conclude that this assumption is contented at an acceptable level. The results concerning the test of linearity is presented in Appendix B.

3.9.5 Skewness and kurtosis
We have also checked for skewness and kurtosis in both our total sample as well as in all the five different industries. In the total sample the level of skewness and kurtosis were improved after being winsorized and we cannot detect any problems related to this issue that will affect our forthcoming result. In the different industries we found significant higher values regarding kurtosis in the Finance and the IT industry, compared to the other industries. Even though we are aware of that this may affect our result, we do not find this as an impending problem when proceeding with our result and analysis.
4. Results
This section provides the reader with the attained results of the study. The first part presents the descriptive statistics together with the regression results for the total sample. This part is followed by the results for each industry included in the research. Each part ends up in a conclusion.

4.1 The relation between pay and performance
In order to answer the formulated competing hypotheses 1a and 1b, a regression analysis including the total sample was performed. Hence, the number of observations concerning the first analysis is 900 firms and contains a dummy variable for each of the included industries. This analysis will therefore, in addition to exploring the relationship between variable compensation and performance, also allow us to distinguish the industry impact on firm performance. In this analysis, the Finance industry serves as the reference group and is therefore not represented as a separate industry below. The regression analysis computed on the complete sample will thereby serve as a foundation for the upcoming analysis of the separate industries. The computed regression model formulated to answer Hypothesis 1a and Hypothesis 1b is presented below.

\[
\text{PERFORMANCE} = \beta_0 + \beta_1\text{COMPENSATION} + \beta_2\text{DEBT} + \beta_3\text{GROWTH} + \beta_4\text{SIZE} + \beta_5\text{RISK} + \beta_6\text{INDUSTRY} + \epsilon
\]

Descriptive statistics
In Table 3 below the descriptive statistics for the entire sample is presented. The mean of the dependent variable, performance, is 0.161 or 16.1 percent. As stated above, this measure consists of a combined ratio of three commonly used performance ratios, ROA, ROE and Operating margin. The independent variable, variable compensation relative to total compensation, is 0.027. This implies that in the total sample the variable pay is on average 2.7 percent of total compensation. However, it should be stressed that this value is affected by the fact that our sample includes both firms with an implemented bonus policy, as well as firms, which do not apply variable compensation as a form of incentive. Therefore, this value might be interpreted as low.
In order to examine the relation between variable compensation and performance a Pearson product-moment correlation is performed. As can be comprehended from the table below, the attained value of correlation between compensation and performance is 0.048. This thereby signifies a weak relation between variable compensation and performance, since the value is close to zero. However, this correlation is not significant at a 0.05 level, and therefore needs to be contemplated with precaution. Further, the correlation matrix also provides information regarding the correlation between performance and the chosen industries. The Electric utility industry as well as the Healthcare industry shows a weak positive, respectively a weak negative correlation of performance in relation to the reference group, the Finance industry, and is statistical significant at an alpha level of 0.01.
Table 4. Correlations of the included variables in the regression model within the total sample.

<table>
<thead>
<tr>
<th></th>
<th>PERF.</th>
<th>COMP.</th>
<th>DEBT</th>
<th>GROWTH</th>
<th>LOG SIZE</th>
<th>LOG RISK</th>
<th>ELEC.</th>
<th>HEALTH</th>
<th>IT</th>
<th>RETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF.</td>
<td></td>
<td>0.048</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP.</td>
<td>0.028</td>
<td></td>
<td>-0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT</td>
<td></td>
<td>0.028</td>
<td></td>
<td>0.05</td>
<td>0.025</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.083**</td>
<td>0.005</td>
<td></td>
<td>-0.047</td>
<td>-0.134***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0.054</td>
<td>0.149***</td>
<td>-0.047</td>
<td>-0.134***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0.081**</td>
<td>0.129***</td>
<td>0.010</td>
<td>0.230***</td>
<td>0.666***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC.</td>
<td>-0.121***</td>
<td>-0.136***</td>
<td>0.018</td>
<td>-0.136***</td>
<td>0.022</td>
<td>-0.114***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEALTH</td>
<td>0.156***</td>
<td>-0.057</td>
<td>0.059</td>
<td>0.054</td>
<td>-0.226***</td>
<td>-0.114***</td>
<td>-0.250***</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>0.001</td>
<td>0.109***</td>
<td>0.040</td>
<td>0.047</td>
<td>-0.119***</td>
<td>-0.035</td>
<td>-0.250***</td>
<td>-0.250***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>RETAIL</td>
<td>0.047</td>
<td>-0.004</td>
<td>-0.031</td>
<td>-0.034</td>
<td>0.414***</td>
<td>0.282***</td>
<td>-0.250***</td>
<td>-0.250***</td>
<td>-0.250***</td>
<td>-</td>
</tr>
</tbody>
</table>

**Statistically significant at a 0.05 level (2-tailed)
***Statistically significant at a 0.01 level (2-tailed)

Regression results
The table below displays the regression results of the complete sample. The F value of the total sample is 6,065 and a p-value of 0.000, which implicates that one or more of the independent variables are significant. The beta value of the independent variable has an attained value of 0,272, which implies a positive although weak impact on performance.\(^1\) As can be seen below, the coefficient for compensation is not significant at an alpha level of 0.05. However, the attained p value of the coefficient is 0,07, which signifies that this coefficient is close to being significant. We have therefore chosen to display which of the beta values that are significant at an alpha level of 0.10.

Further, the attained value of \(R^2\) adjusted is 0,048. This signifies that the explanatory power of the regression model is 4.8 percent. This value may therefore appear low, since our independent variable, as well as the entered control variables, only can explain just below five percent of the change in the dependent variable. On the other hand, it is important to consider that the dependent variable is firm performance, which is influenced by a substantial amount of

\(^1\) ROE: Not significant at a alpha level of 0.05
ROA: Significant at an alpha level of 0.05
Operating Magin: Not significant on an alpha level of 0.05
external and internal factors. The explanatory power of the regression model may therefore be interpreted as moderate, since the complexity of what explains firm performance needs to be considered.

The regression analysis also provides information regarding the industrial effect on performance. As can be detected in the table below, the Healthcare industry as well as the Retail industry has a significant impact on performance relative to the reference group. Both of these industries beta values displays’ a weak although positive impact on performance and this result will serve as a reference point in the upcoming analysis of the different industries.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.361**</td>
<td>0.127</td>
<td>2.836</td>
<td>0.005</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>0.272*</td>
<td>0.150</td>
<td>1.815</td>
<td>0.070</td>
</tr>
<tr>
<td>DEBT</td>
<td>0.070</td>
<td>0.089</td>
<td>0.788</td>
<td>0.431</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.059**</td>
<td>0.025</td>
<td>-2.391</td>
<td>0.017</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0.009</td>
<td>0.013</td>
<td>-0.707</td>
<td>0.480</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0.014</td>
<td>0.011</td>
<td>-1.275</td>
<td>0.203</td>
</tr>
<tr>
<td>ELECTRIC</td>
<td>-0.025</td>
<td>0.030</td>
<td>-0.833</td>
<td>0.405</td>
</tr>
<tr>
<td>HEALTHCARE</td>
<td>0.132**</td>
<td>0.029</td>
<td>4.523</td>
<td>0.000</td>
</tr>
<tr>
<td>IT</td>
<td>0.045</td>
<td>0.029</td>
<td>1.550</td>
<td>0.122</td>
</tr>
<tr>
<td>RETAIL</td>
<td>0.093**</td>
<td>0.031</td>
<td>2.995</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Adjusted R² = 0.048
* Statistically significant at a 0.10 level
** Statistically significant at a 0.05 level

Table 5. Beta coefficient, standard error and statistical significance regarding the total sample.
4.1.2 Concluding Remarks
To summarize the results from the total sample and draw concluding remarks we return to our formulated hypotheses, to see whether we accept or reject the presented hypotheses.

The formulated hypotheses are stated as follow:

H1a: *Top management variable compensation has an overall positive impact on financial performance.*

H1b: *Top management variable compensation has no significant impact on financial performance.*

The attained results from the regression analysis indicate that variable compensation has a weak although positive impact on the dependent variable, firm performance. However, the value of the beta coefficient is not statistically significant, which entails that we cannot confirm that the determined relation between variable compensation and firm performance is true for the population. We therefore assume that the influence of variable compensation on firm performance is equal to zero. With background from our statistically results we therefore reject the Hypothesis 1a and accept the Hypothesis 1b.

4.2 Pay and performance: an industry comparison
In order to answer our second hypothesis, a regression analysis for each industry is performed. Each industry within the study includes a number of 180 firms. The computed regression model to answer Hypothesis 2 is presented below.

\[
\text{PERFORMANCE} = \beta_0 + \beta_1\text{COMPENSATION} + \beta_2\text{DEBT} + \beta_3\text{GROWTH} + \beta_4\text{SIZE} + \beta_5\text{RISK} + \epsilon
\]

4.2.1 Finance Industry

*Descriptive statistics*

The table below displays the descriptive information attained in the Finance industry. The total number of observations equals 180 for each of the entered factors. Our independent variable, variable compensation as a percentage of total compensation, has a mean of 6,1 percent. This is one of the highest means regarding the independent variable among the industries within the sample. Further, the mean of our dependent variable is 11,4 percent.
Table 6. Number of observations, minimum and maximum values, mean and standard deviations of included variables within the Finance Industry.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE</td>
<td>180</td>
<td>-0.581</td>
<td>0.482</td>
<td>0.114</td>
<td>0.189</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>180</td>
<td>0.000</td>
<td>0.773</td>
<td>0.061</td>
<td>0.161</td>
</tr>
<tr>
<td>DEBT</td>
<td>180</td>
<td>0.070</td>
<td>0.480</td>
<td>0.302</td>
<td>0.112</td>
</tr>
<tr>
<td>GROWTH</td>
<td>180</td>
<td>-0.127</td>
<td>10.652</td>
<td>0.490</td>
<td>1.723</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>180</td>
<td>11.210</td>
<td>15.060</td>
<td>12.600</td>
<td>0.945</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>180</td>
<td>8.130</td>
<td>13.500</td>
<td>10.657</td>
<td>1.317</td>
</tr>
</tbody>
</table>

In Table 7 below, the correlations between the included variables are presented. The correlation of the independent and the dependent variable is 0.122, which designates positive but weak relationship of compensation and performance. However, the correlation of performance and variable compensation is not significant at a 0.05 level, and must therefore be interpreted with caution.

Table 7. Correlations of the included variables in the regression model within the Finance Industry.

<table>
<thead>
<tr>
<th></th>
<th>PERF.</th>
<th>COMP.</th>
<th>DEBT</th>
<th>GROWTH</th>
<th>LOG SIZE</th>
<th>LOG RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF.</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP.</td>
<td>0.122</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT</td>
<td>-0.133</td>
<td>-0.011</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.123</td>
<td>-0.049</td>
<td>0.022</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>0.158**</td>
<td>-0.018</td>
<td>-0.140</td>
<td>-0.158**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>LOG RISK</td>
<td>0.031</td>
<td>-0.054</td>
<td>-0.213***</td>
<td>0.078</td>
<td>0.670***</td>
<td>-</td>
</tr>
</tbody>
</table>

***Statistically significant at a 0.05 level (2-tailed)
** Statistically significant at a 0.01 level (2-tailed)

Regression Results

The achieved F value is 2.626 and the p-value is 0.026, which show that one or several of our independent variables have a significant impact on the dependent variable. The coefficient of the independent variable is 0.134, which suggests that variable compensation has a relatively low influence on performance within the Finance industry. The coefficient of compensation is not significant at a 0.05 level, which demonstrates that this result needs to be interpreted with
precaution. However, the attained p-value shows that the coefficient is significant at a 0.123 level, which is relatively close to the critical significant level of 0.05. This insinuates that the coefficient of the variable is close to being significant and is likely to be true for the population. In the Finance industry the value of $R^2$ adjusted is 0.043. This corresponds an explanatory power of 4.3 percent. This implicates that the explanatory power of the regression model is relatively low compared to several of the other industries included in the analysis.

### Regression Results Finance Industry

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-0.177</td>
<td>0.199</td>
<td>-0.892</td>
<td>0.374</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>0.134</td>
<td>0.086</td>
<td>1.550</td>
<td>0.123</td>
</tr>
<tr>
<td>DEBT</td>
<td>-0.216*</td>
<td>0.127</td>
<td>-1.705</td>
<td>0.090</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.008</td>
<td>0.008</td>
<td>-0.903</td>
<td>0.368</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>0.044**</td>
<td>0.021</td>
<td>2.147</td>
<td>0.033</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0.019</td>
<td>0.015</td>
<td>-1.285</td>
<td>0.201</td>
</tr>
</tbody>
</table>

Adjusted $R^2 = 0.043$
* Statistically significant at a 0.10 level
** Statistically significant at a 0.05 level

*Table 8. Beta coefficient, standard error and statistical significance regarding the Finance Industry.*

#### 4.2.2 Healthcare Industry

**Descriptive statistics**

Table 9 below displays the descriptive statistics of the Healthcare industry and exhibits several interesting results. The mean of the dependent variable, performance, is 30.5 percent, which is one of the highest attained results of our sample. However, it should also be noted that the standard deviation of this variable is somewhat higher compared to the other industries included in our study. Furthermore, the value of our independent variable, variable compensation, shows one of the lowest bonus ratios found in the sample. The total number of observations is 180 and, as for all of our industries, the minimum value of compensation is 0,000.

---

2 ROE: Not significant on an alpha level of 0.05
ROA: Significant on an alpha level of 0.05
Operating Margin: Not significant on an alpha level of 0.05
Table 9. Number of observations, minimum and maximum values, mean and standard deviations of included variables within the Healthcare Industry.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE</td>
<td>180</td>
<td>-0,489</td>
<td>2,697</td>
<td>0,305</td>
<td>0,524</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>180</td>
<td>0,000</td>
<td>0,209</td>
<td>0,019</td>
<td>0,048</td>
</tr>
<tr>
<td>DEBT</td>
<td>180</td>
<td>0,089</td>
<td>0,479</td>
<td>0,316</td>
<td>0,097</td>
</tr>
<tr>
<td>GROWTH</td>
<td>180</td>
<td>-0,032</td>
<td>2,220</td>
<td>0,239</td>
<td>0,436</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>180</td>
<td>11,060</td>
<td>15,060</td>
<td>12,297</td>
<td>0,981</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>180</td>
<td>7,830</td>
<td>13,120</td>
<td>10,401</td>
<td>1,169</td>
</tr>
</tbody>
</table>

As can be comprehended from the correlation matrix below, the correlation between compensation and performance is 0,183, which signifies a weak although positive relationship. The relationship is statistically significant at a level of 0,05. Furthermore, the correlation is also statistically significant at a 0,05 level for the included control variables size and risk and performance and at a 0,01 level concerning debt and performance.

Table 10. Correlations of the included variables in the regression model within the Healthcare Industry.

<table>
<thead>
<tr>
<th></th>
<th>PERF.</th>
<th>COMP.</th>
<th>DEBT</th>
<th>GROWTH</th>
<th>LOG SIZE</th>
<th>LOG RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF.</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP.</td>
<td>0,183**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT</td>
<td>0,273***</td>
<td>0,029</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>0,041</td>
<td>0,005</td>
<td>0,140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0,180**</td>
<td>0,218***</td>
<td>-0,080</td>
<td>-0,079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0,147**</td>
<td>0,078</td>
<td>0,040</td>
<td>0,260***</td>
<td>0,662***</td>
<td>-</td>
</tr>
</tbody>
</table>

*Statistically significant at a 0,05 level (2-tailed)
**Statistically significant at a 0,01 level (2-tailed)

Regression Results

The F value for this industry is 6,071 and with a p-value of 0,000 implicating that one or more of our independent variables is significant. The retained beta value of the independent variable, variable compensation, is 2,351 and is significant at the 0,05 level.\(^3\) This shows that executive

\(^3\) ROE: Significant on an alpha level of 0,05
ROA: Significant on an alpha level of 0,05
Operating margin: Significant on an alpha level of 0,05
compensation has a relatively strong positive influence on performance and we consider this result to be one of the main findings of our study. The adjusted $R^2$ value is 0.124, which we consider as a relatively high value. As discussed above, this indicates that the explanatory power of the model is rather high considering that an extensive number of factors can influence firm performance.

<table>
<thead>
<tr>
<th>Regression Results Healthcare Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>COMPENSATION</td>
</tr>
<tr>
<td>DEBT</td>
</tr>
<tr>
<td>GROWTH</td>
</tr>
<tr>
<td>LOG SIZE</td>
</tr>
<tr>
<td>LOG RISK</td>
</tr>
</tbody>
</table>

Adjusted $R^2 = 0.124$
*Statistically significant at a 0,10 level
**Statistically significant at a 0,05 level

Table 11. Beta coefficient, standard error and statistical significance regarding the Healthcare Industry.

4.2.3 Electric Utility Industry

Descriptive Statistics
The total sample within the Electric utility sector consists of 180 firms. The table below presents the minimum, maximum, mean and the standard deviation for each variable. The mean level of compensation within the Electric utility industry is 1,0 percent with a standard deviation of 3,1. This mean level of compensation is the lowest value among the industries in the total sample.
### Descriptive Statistics Electric Utility Industry

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE</td>
<td>180</td>
<td>-0,621</td>
<td>0,665</td>
<td>0,093</td>
<td>0,186</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>180</td>
<td>0,000</td>
<td>0,172</td>
<td>0,010</td>
<td>0,031</td>
</tr>
<tr>
<td>DEBT</td>
<td>180</td>
<td>0,082</td>
<td>0,492</td>
<td>0,308</td>
<td>0,112</td>
</tr>
<tr>
<td>GROWTH</td>
<td>180</td>
<td>-0,094</td>
<td>0,788</td>
<td>0,080</td>
<td>0,164</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>180</td>
<td>11,310</td>
<td>15,810</td>
<td>12,858</td>
<td>1,170</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>180</td>
<td>7,880</td>
<td>14,090</td>
<td>10,408</td>
<td>1,535</td>
</tr>
</tbody>
</table>

*Table 12. Number of observations, minimum and maximum values, mean and standard deviations of included variables within the Electric Utility Industry.*

In the table below the correlations between the different variables are presented. The correlation coefficient of the independent variable, variable compensation, and the dependent variable, performance, is not statistically significant at a 0,05 level. Several of the other variables are significantly correlated with each other, for instance growth and performance is statistically significant on a 0,01 level.

### Correlation Matrix Electric Utility Industry

<table>
<thead>
<tr>
<th></th>
<th>PERF.</th>
<th>COMP.</th>
<th>DEBT</th>
<th>GROWTH</th>
<th>LOG SIZE</th>
<th>LOG RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>COMP.</td>
<td>-0,079</td>
<td>-</td>
<td>-0,088</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DEBT</td>
<td>-0,170**</td>
<td>0,145</td>
<td>0,091</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0,362***</td>
<td>0,234***</td>
<td>0,045</td>
<td>-0,107</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>0,005</td>
<td>0,330***</td>
<td>0,148**</td>
<td>0,209***</td>
<td>0,793***</td>
<td>-</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0,056</td>
<td>0,330***</td>
<td>0,148**</td>
<td>0,209***</td>
<td>0,793***</td>
<td>-</td>
</tr>
</tbody>
</table>

**Statistically significant at a 0,05 level (2-tailed)**

***Statistically significant at a 0,01 level (2-tailed)

*Table 13. Correlations of the included variables in the regression model within the Electric Utility Industry.*

### Regression Results

The value of $R^2$ adjusted within the Electric utility industry is 0,143, which is considered as a relatively high value. As mentioned previously, this indicates the explanatory power of the model, and is considered to be relatively high since there are several factors that can influence our dependent variable, performance. Since the F value for this industry is 6,982 and the p-value is 0,000, this implicates that one or more of our independent variables are significant. Further, the attained coefficient of the independent variable, variable compensation, is -0,384,
indicating a negative relation between executive compensation and firm performance. The coefficient of compensation is not statistically significant at a 0.05 level.\textsuperscript{4} The table below presents that the two control variables growth and debt are statistically significant at a 0.05 level.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.336**</td>
<td>0.160</td>
<td>2.096</td>
<td>0.037</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>-0.384</td>
<td>0.443</td>
<td>-0.866</td>
<td>0.387</td>
</tr>
<tr>
<td>DEBT</td>
<td>-0.273**</td>
<td>0.118</td>
<td>-2.307</td>
<td>0.022</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.465**</td>
<td>0.091</td>
<td>-5.133</td>
<td>0.000</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0.032</td>
<td>0.020</td>
<td>-1.590</td>
<td>0.114</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>0.029*</td>
<td>0.016</td>
<td>1.763</td>
<td>0.080</td>
</tr>
</tbody>
</table>

Adjusted $R^2 = 0.143$

* Statistically significant at a 0.10 level
** Statistically significant at a 0.05 level

Table 14. Beta coefficient, standard error and statistical significance regarding the Electric Utility Industry.

4.2.4 IT Industry

Descriptive statistics

In the table below, we present the descriptive statistics for all the variables within the regression model in the IT sector. The descriptive statistics provide us with information regarding the minimum, maximum and mean level of compensation among the firms within the IT industry in this study. The mean level of the independent variable is 4.7 percent and the maximum level is 43.0 percent.

\textsuperscript{4} ROE: Not significant on an alpha level of 0.05
ROA: Not significant on an alpha level of 0.05
Operating margin: Not significant on an alpha level of 0.05
### Descriptive Statistics IT Industry

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE</td>
<td>180</td>
<td>-0,860</td>
<td>0,780</td>
<td>0,155</td>
<td>0,292</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>180</td>
<td>0,000</td>
<td>0,430</td>
<td>0,047</td>
<td>0,099</td>
</tr>
<tr>
<td>DEBT</td>
<td>180</td>
<td>0,110</td>
<td>0,470</td>
<td>0,296</td>
<td>0,098</td>
</tr>
<tr>
<td>GROWTH</td>
<td>180</td>
<td>-0,080</td>
<td>6,590</td>
<td>0,366</td>
<td>1,122</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>180</td>
<td>11,250</td>
<td>15,280</td>
<td>12,538</td>
<td>0,846</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>180</td>
<td>8,610</td>
<td>13,490</td>
<td>10,616</td>
<td>0,100</td>
</tr>
</tbody>
</table>

*Table 15. Number of observations, minimum and maximum values, mean and standard deviations of included variables within the IT Industry.*

The correlation matrix below presents the correlations and significance levels between the different variables. The table presents the statistically significance on two levels, 0,05 and 0,01, representing a two-tailed model. Variable compensation related to performance has resulted in a very weak relationship. However, the correlation coefficient is not significant on a 0,05 level. The relation between the control variable size and the independent variable compensation is significant at a 0,01 level. Further the correlation of the two control variables risk and growth is significant at a 0,01 level.

### Correlation Matrix IT Industry

<table>
<thead>
<tr>
<th></th>
<th>PERF.</th>
<th>COMP.</th>
<th>DEBT</th>
<th>GROWTH</th>
<th>LOG SIZE</th>
<th>LOG RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF.</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP.</td>
<td>0,011</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT</td>
<td>-0,051</td>
<td>-0,009</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>0,042</td>
<td>-0,033</td>
<td>-0,109</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0,032</td>
<td>0,289***</td>
<td>-0,044</td>
<td>-0,057</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG RISK</td>
<td>0,030</td>
<td>0,117</td>
<td>-0,031</td>
<td>0,303***</td>
<td>0,458***</td>
<td>-</td>
</tr>
</tbody>
</table>

**Statistically significant at a 0,05 level (2-tailed)**

***Statistically significant at a 0,01 level (2-tailed)**

*Table 16. Correlations of the included variables in the regression model within the IT Industry.*

### Regression Results

The attained value of $R^2$ adjusted within the IT industry is -0,021. The attained $R^2$ adjusted is negative, though this should be interpreted as a value of zero, since the explanatory power cannot be negative. The received value of F is 0,247 and the p-value is 0,941, which indicate that none of the independent variables within the regression analysis is significant. Further, the
value of B, the coefficient of the independent variable, is 0,068 indicating a relatively weak positive relation between top executive compensation and the performance of the firm. However, this variable is not significant at a 0,05 tolerance level and must therefore be analyzed with precaution.5

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0,312</td>
<td>0,361</td>
<td>0,863</td>
<td>0,389</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>0,068</td>
<td>0,234</td>
<td>0,293</td>
<td>0,770</td>
</tr>
<tr>
<td>DEBT</td>
<td>-0,148</td>
<td>0,226</td>
<td>-0,654</td>
<td>0,514</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0,005</td>
<td>0,021</td>
<td>0,240</td>
<td>0,811</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0,021</td>
<td>0,031</td>
<td>-0,683</td>
<td>0,495</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>0,014</td>
<td>0,027</td>
<td>0,526</td>
<td>0,600</td>
</tr>
</tbody>
</table>

Adjusted $R^2 = -0,021$
*Statistically significant at a 0,10 level
** Statistically significant at a 0,05 level

Table 17. Beta coefficient, standard error and statistical significance regarding the IT Industry.

4.2.5 Retail Industry

Descriptive statistics

The total number of firms within the Retail industry is 180, equal to the other industries. The table below presents the descriptive statistics for all variables within this industry. The mean level of variable compensation for the firms within the Retail industry is 2,6 percent with a standard deviation of 6,8 percent. The minimum level of compensation is 0,000 and the maximum level is according to the statistics 26,1 percent.

---

5 ROE: Not significant on an alpha level of 0,05
ROA: Not significant on an alpha level of 0,05
Operating margin: Not significant on an alpha level of 0,05
In the table below the correlations between the different variables are presented. The independent variable, and the dependent variable, performance is not statistically significant at a 0.05 level. Further, three of the control variables are significantly correlated to the dependent variable on either the 0.01 or 0.05 level.

### Correlation Matrix Retail Industry

<table>
<thead>
<tr>
<th></th>
<th>PERF.</th>
<th>COMP.</th>
<th>DEBT</th>
<th>GROWTH</th>
<th>LOG SIZE</th>
<th>LOG RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF.</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP.</td>
<td>0.004</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEBT</td>
<td>0.195***</td>
<td>0.055</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.224***</td>
<td>-0.015</td>
<td>0.145</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0.041</td>
<td>0.224***</td>
<td>0.028</td>
<td>-0.240***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0.177**</td>
<td>0.239***</td>
<td>0.153**</td>
<td>0.273***</td>
<td>0.529***</td>
<td>-</td>
</tr>
</tbody>
</table>

**Statistically significant at a 0.05 level (2-tailed)**

***Statistically significant at a 0.01 level (2-tailed)**

### Table 19. Correlations of the included variables in the regression model within the Retail Industry.

**Regression Results**

The attained value of adjusted $R^2$ is 0.101 which indicates that the explanatory power of the model is approximately 10 percent. However, even though this explanatory power of the model might seem low, it is important to consider that the dependent variable is such a complex factor as performance which is influenced by a number of different features. We therefore argue that an attained value of $R^2$ adjusted that amounts to 10 percent represents a relatively high explanatory value.
The F value in the Retail industry is 5,035 and the attained p-value is 0,000. This implicates that at least one of our independent variables are significant. The attained coefficient of the independent variable, variable compensation, is 0,413 indicating a relatively strong positive relation between top management variable compensation and firm performance. However, this variable is not significant at a 0,05 tolerance level and must therefore be analyzed with precaution. Two of our included control variables, growth and debt, are significant at a 0,05 or 0,10 level.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1,391</td>
<td>1,013</td>
<td>1,373</td>
<td>0,172</td>
</tr>
<tr>
<td>COMPENSATION</td>
<td>0,413</td>
<td>1,058</td>
<td>0,391</td>
<td>0,697</td>
</tr>
<tr>
<td>DEBT</td>
<td>2,363**</td>
<td>0,685</td>
<td>3,449</td>
<td>0,001</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0,618**</td>
<td>0,225</td>
<td>-2,744</td>
<td>0,007</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>-0,035</td>
<td>0,092</td>
<td>-0,382</td>
<td>0,703</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0,108</td>
<td>0,075</td>
<td>-1,440</td>
<td>0,152</td>
</tr>
</tbody>
</table>

Table 20. Beta coefficients, standard error and statistical significance regarding the Retail Industry.

4.2.6 Concluding remarks
To summarize the results from the different industries we return to the formulated hypothesis regarding the industries to see whether we accept or reject the hypothesis. The formulated hypothesis is stated as follows:

H2: Top management variable compensation and firm performance is contingent on industrial context.

The empirical evidence within this study implies that there are inter-industry differences present regarding the relation of top management variable compensation and firm performance.

---

6 ROE: Not significant on an alpha level of 0,05
ROA: Not significant on an alpha level of 0,05
Operating margin: Not significant on an alpha level of 0,05
We have detected one industry that shows a statistically significant relationship between top executive compensation and the performance of the firm. With background in our statistically results we therefore accept the Hypothesis 2. The table below displays the summarized results regarding the compensation coefficient for all included industries.

<table>
<thead>
<tr>
<th>Industry</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINANCE</td>
<td>0.134</td>
<td>0.086</td>
<td>1.550</td>
<td>0.123</td>
</tr>
<tr>
<td>HEALTHCARE</td>
<td>2.351**</td>
<td>0.788</td>
<td>2.983</td>
<td>0.003</td>
</tr>
<tr>
<td>ELECTRIC UTILITY</td>
<td>-0.384</td>
<td>0.443</td>
<td>-0.866</td>
<td>0.387</td>
</tr>
<tr>
<td>IT</td>
<td>0.068</td>
<td>0.234</td>
<td>0.293</td>
<td>0.770</td>
</tr>
<tr>
<td>RETAIL</td>
<td>0.413</td>
<td>1.058</td>
<td>0.391</td>
<td>0.697</td>
</tr>
</tbody>
</table>

* Statistically significant at a 0.10 level
** Statistically significant at a 0.05 level

*Table 21. Beta coefficient, standard error and statistical significance regarding the independent variable: A summary of all the included industries.*
5. Robustness Check

In order to control the robustness of our attained results, we perform a robustness check to assure the validity of our analysis. As discussed above, the gathered data regarding the independent variable, variable compensation, contains a relatively high degree of zeros. Consequently, we have detected issues related to skewness concerning the data within the entire sample and within the selected industries. In the robustness check we have computed a multiple regression analysis and replaced the variable compensation with a dummy variable.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-0,056</td>
<td>0,198</td>
<td>-0,284</td>
<td>0,776</td>
</tr>
<tr>
<td>DUM_VARCOMP</td>
<td>0,092**</td>
<td>0,029</td>
<td>3,116</td>
<td>0,002</td>
</tr>
<tr>
<td>DEBT</td>
<td>-0,189</td>
<td>0,125</td>
<td>-1,513</td>
<td>0,132</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0,010</td>
<td>0,008</td>
<td>-1,188</td>
<td>0,236</td>
</tr>
<tr>
<td>LOG SIZE</td>
<td>0,030</td>
<td>0,021</td>
<td>1,445</td>
<td>0,150</td>
</tr>
<tr>
<td>LOG RISK</td>
<td>-0,016</td>
<td>0,015</td>
<td>-1,132</td>
<td>0,259</td>
</tr>
</tbody>
</table>

Adjusted R² = 0,081
* Statistically significant at a 0,10 level
** Statistically significant at a 0,05 level

Table 22. Robustness test. Beta coefficient, standard error and statistical significance regarding the Finance Industry.

The dummy variable can solely represent two values: 0 if the top management has not received any variable compensation and 1 if the top management has received variable compensation. This entails that the firms, which do not pay any variable compensation to the top management, is the control group in the analysis. In part from the replaced variable compensation ratio, the regression equation is identical to Equation 1 regarding the entire sample and Equation 2 on the industry level. The attained results do not display any significant deviant regression results compared to our attained result, with one exception. Within the Finance industry an although weak but significant relation is found between variable pay and performance, which can be seen in the table above. This entails that within the Finance industry, the firms which pay out variable compensation to their top management, do have enhanced performance compared to firms in which the top management did not receive any variable compensation. However, it should be stressed that this effect is to be considered as weak. The remaining part of the retained results within the robustness check confirms our attained results, and displays an accepted level of validity within our chosen method.
6. Discussion
In this part of the thesis we analyze and discuss the empirical results which have been presented in the previous section. This section regards the main parts of our empirical evidence, which is considered in the light of the examined theory within the thesis.

6.1 Outline
The empirical evidence of this thesis could not confirm a significant relation between top management variable pay and firm performance on a general level. Furthermore, the results implied inter-industrial differences of the relationship. The discussion of these results is divided into different parts related to the attained results. The discussion highlights practical implications, the Swedish context, causality of the pay and performance relation and selected performance measurements as well as industrial differences. In the first part, we discuss the main relation between pay and performance and a discussion of Hypothesis 1a and Hypothesis 1b. The final parts of the discussion concern industry comparison and discussion of the empirical evidence regarding Hypothesis 2. We conclude the discussion with an analysis concerning further limitations.

6.2. Enhanced performance or money down the drain?
The top management of a firm is often considered as one of the key elements to a successful firm. The top managers are generally the individuals that are assumed to influence the firm's operations to the highest degree. In small sized firms it is not uncommon that these individuals also are the owners of a firm, however, in large firms the shareholders are often many and highly separated from the firm's operations (Nouray & Daroca, 2008, p. 562). How can the shareholders of a firm control the top executives and make them outperform? One answer to this question is through an incentive system, where the managers attain a variable compensation to tie their interests to those of the shareholders. Within this system the motivation and the performance of the top management is enhanced, and this will in turn enhance the firm performance and assure that the shareholders interests are seen to. This is the argumentation addressed within Agency theory, and is often one of the main arguments to increase the variable pay of the CEO and the board of the directors within the firm. Is this the recipe to enhanced firm performance? According to the results of this study, the answer is no.

As stated in the empirical results, this study cannot confirm that variable compensation to the board and the CEO has an overall positive impact on firm performance. With background in these results we therefore reject Hypothesis 1a and accept the Hypothesis 1b; there is no
significant relation between the two main variables. This retained result goes in line with the results of Miller (1995), Randøy & Nielsen (2002) and Murthy & Salter (1975), who have not identified any significant relationship between executive pay for performance and performance. Furthermore, the results of this conducted study contradicts the main arguments outlined in Agency theory, as well as the supportive empirical evidence of this theory. Attaway (2010), Hall and Liebman (1998), Sigler and Porterfield (2001) and Lilling (2006) have all found a positive or a strong positive relation between pay for performance and firm performance and therefore shows of contradicting evidence compared to the results attained within this study.

Since the results of this study do not convey supportive evidence in line with Agency theory, this signals that other theories might be better suited when examining and explaining top management motivation and performance. As discussed in the theory section of this thesis, behavioral theories such as Self-determination theory proposes alternative theoretical explanations regarding incentives and performance. An important element of this theory concerns intrinsic motivation, and the essence of internal motivation relative to extrinsic rewards (Gagné & Deci, 2005). Our empirical evidence implies that a higher bonus or variable compensation of the top management does not enhance firm performance. Even though this does not necessarily entail that external rewards in general are ineffective, the empirical evidence of this study implies that the internal motivation of the CEO or the board of directors is a superior predictor of executive motivation and performance. Walton (2012) suggests that an extrinsic reward could decrease intrinsic motivation, resulting in an unaffected motivation or even a lower total motivation. Subsequently, it is possible that our conducted study displays crowding out effects since our results do not confirm a potential relation between the main variables.

Agency theory and SDT both submits distinctive explanations on how to enhance motivation, which in turn will increase top management performance and ultimately the performance of the firm. However, this reasoning and argumentation presumes that the top management of a firm can influence the successfullness of the company and possesses a prominent control over the main operations. However, these assumptions can be questioned. Miller (1995) discusses this issue and proposes that this may be one of the main concerns when investigating the relationship of executive variable pay and firm performance. Further, Mintzberg (1989) contemplates this subject and states that the CEO influential power on firm performance can be
relatively limited, due to organizational issues, such as a bureaucratic inertia. If the top management control and influence over the firm performance are limited, this entails that even though the external reward manages to increase the motivation and performance, the performance of the firm remains unaffected since this is not within the control span of the top management. Consequently, the increase in firm’s financial performance cannot be explained by the increase in variable compensation. The attained results from this study implicate support for this conception, since no statistically significant relation could be found between variable compensation and firm performance.

In a previously published paper, Jensen & Murphy (1990) examine pay for performance sensitivity among CEOs. The result of the conducted study indicated that sensitivity of the variable pay related to firm performance was very imitated and Jensen and Murphy (1990), therefore argue that the bonus is too low to increase executive- and firm performance. Hence, these authors argue the problem with pay for performance is not that a bonus cannot enhance performance, but rather that the actual paid bonus needs to be raised to have an affect on performance. In our sample the variable compensation constitutes approximately 2.5% of the total salary, and in line with Jensen and Murphy (1990) it could therefore be argued that this variable compensation is too low to increase executive motivation and firm performance. This reasoning could thereby offer an elucidation to the found non-relationship between variable pay and performance. However, since our study contains firms with an implemented bonus system as well as firms which do not pay out bonuses to the top management, the 2.5 per cent of variable compensation does not reflect the bonus paid to executives where a variable compensation is actual used a motivational device. Therefore, in a sample containing solely firms with an implemented pay for performance system, the mean variable compensation may be considerably higher.

6.3 Practical implications
The empirical evidence of this thesis indicates that an increased variable compensation will not enhance the performance of the firm on a general level. If this is true, does this mean that the bonus to the top management does not matter? Though it should be noted that since we detected problems regarding the assumptions of the regression analysis, the conclusions regarding the results needs to be considered with caution. To proceed, if the consequences are that incentives do not enhance performance, what is the situation for the shareholders within the firm? The shareholders rely on the CEO, and that he or she adopts policies and maximize
the value of the firm, and in turn the value of their shares (Jensen & Murphy, 2010; Frydman & Jenter, 2010). If the variable pay does not in fact enhance firm performance, this entails that the shareholder’s money is inadequately spent. Furthermore, this may also be harmful to stakeholders and other actors in the society since the funds spent on CEO variable compensation could have funded other investments. The importance for a firm to in a strategic way manage the relationship with the stakeholders of the firm is important and understood, though Adams, Licht & Sagiv (2011), also highlight that it can be hard to ensure how the individuals of top management handle this task.

Previous research has indicated that the context in which organizations operate can have an impact on the efficiency of the incentive system, and thus indicating that the settings in which the firm operates potentially can influence the effect of variable pay on performance (Matolcsy & Wright, 2011; Wanrong et al. 2014). We therefore suggest that industrial characteristics may affect the relation of variable compensation and performance. The empirical evidence of this thesis displays inter-industry differences in the relation of top management variable compensation and firm performance. Therefore, this evidence implies that a universal model of top management incentive systems may not be effective in terms of enhancing firm performance. Even though an invented reward system is regarded as effective for an organization, this does not entail that it is suitable in other contexts and in other environments. An essential practical implication is therefore that the rewards system needs to be accustomed to the specific context in which the firm operates.

### 6.4 Variable compensation within the Swedish context

The relation between top management compensation and firm performance has during the past decades generated an intense debate and a high amount of conducted studies. However, a high degree of previous research has been performed in the United States and in Great Britain (Bebchuk & Fried, 2003). Hence, a high amount of the studies within this area of research have generated results and conclusions regarding pay for performance in a setting, which differs considerably from the context, in which Nordic firms or other European companies operate within (Devers, Cannella, Reilly & Yoder, 2007).

This study has exclusively included Swedish firms, and the attained results may therefore be explained by the Swedish context and the Swedish governance system, which differ in many
ways from what characterize the Anglo-American context (Randoy & Nielsen, 2002). The Swedish corporate governance structure has conventionally been portrayed by concentrated ownership, not uncommonly by influential shareholders who control a significant part of the firm, and a strong relation and influence with the Swedish state and the firm (Jonnergård, Kärreman & Svensson, 2004). Even though the research area of pay for performance and firm performance has generated a high amount of academic interest, the empirical findings of previous research is contradictory and inconsistent (Mehran, 1995) and therefore, it is difficult with basis in our results to conclude what is explained by the Swedish context and what is due to other factors. However, this study has generated results, which implies that variable compensation does not have a significant impact on firm performance, which makes an important contribution in relation to other research within the Swedish context.

Furthermore, this conducted study generates another important conclusion regarding Swedish firms and pay for performance. When conducting this study, the methodological standpoint was made in accordance with previously conducted studies. We therefore selected a sample which would reflect a population of all large Swedish firms in the selected industries. Although including all firms, and not solely firms with an implemented top management bonus system, is in line with previous research (e.g. Leonard, 1990) this also generated methodological challenges, since a high amount of the firms did not provide variable compensation. This in turn provided us with a positively skewed sample, and even though at an acceptable level it may have affected our results. An imperative implication concerning pay for performance within the Swedish context is therefore that it may be preferable to develop alternative methods.

6.5 Pay and performance – influence in two directions?
The results of this study cannot confirm a positive relation between the two main variables on a general level. It can therefore not be stated that the variable compensation to the board and the CEO has a positive impact on firm performance. As mentioned above, previous research has revealed different results regarding this relationship. Further, a substantial part of previously conducted studies have also investigated this relation but in the other direction: if firm performance has an impact on the performance based bonus received by the top management (e.g. Attaway, 2000; Randøy & Nielsen, 2002; Bruce, Skvoroda, Fattorusso, & Buck, 2007). Hence, this suggests that the main variables: variable compensation and performance influence each other in both directions. Therefore, the relation between these two variables can be
characterized by reversed causality (Amzaleg, Azar, Ben-Zion, & Rosenfeld, 2014), which means that the variables can impact each other and solely not just in one direction. The two variables could both be the independent variable and the dependent variable. This double connection can entail problems in the analysis, since it can be hard to establish how the variables influence each other. Furthermore, the reversed causality between the two variables can in turn affect the results of the regression analysis by creating a stronger relationship between the two variables than the relation actually is. Though, since this study cannot confirm an overall significant relation between the two main variables, when in fact we should have problems due to a too strong biased result, brings strength to our conclusion that variable compensation does not enhance firm performance on a general level.

6.6 Selected performance measurements
A possible issue to consider is further if the selected performance measurements are the most suitable while investigating pay for performance. In this study we have selected a combined performance ratio, which comprises a merger of three different accounting measures: ROA, ROE and Operating margin. Further, as mentioned in the previous part of this study, we have also run the regression analysis against the performance measures individually. This resulted in a positive significant result between the independent variable, variable compensation, and ROA within the total sample as well as in the financial sector, and also in the Healthcare sector.

However, solely relying on ROA as the measurement for firm performance would have entailed problematic factors. Though, we consider that including ROA as a single measurement would have meant using a measurement that is solely based on total assets. Since the industries are likely to have differing levels of total assets due to inter-industry variances, this may have generated a biased result. Previous researchers, Matolcsy & Wright (2011) have used ROA within their study as a part of the firm performance, though they have also included other measures, and we therefore chose to follow this line of research. Furthermore, the firms included within our sample may have tied the variable compensation to the top management to other performance ratios or goals within the organization. Even though this may be the case for several companies included in the study, the effect of the variable compensation on firm performance should still be evident, since the combined ratio reflects the firm performance on a general level.
6.7 Contextual issues
As stated in the theory section 2.3 Incentive systems and contextual issues, it could be argued that industries would show differences in relation of pay for performance and firm performance. This is also the result of this study: we have achieved different results concerning the industries, though the substantial part of the industries displayed similar results. In accordance with Contingency theory it is not surprising that the industries show different results in the relation between variable compensation and firm performance. The theory regarding contingency and contextual issues, inclines that the successfulness of an implemented strategy is dependent on the connection and match between strategy, firm and the context in which firms operate within (Balkin & Gomez-Mejia, 1987). The first thing within this argumentation, strategy, and how the firm structure is built and how the firm operates can be argued to be solely dependent on the firm itself, though the environment and contextual issues is hard to govern.

The previous literature provides evidence that a firm’s external context has a remarkable impact on the more internal aspects of the firm, such as the strategy, structure, process, culture, incentives and compensations (Wang & Singh, 2014). In the past, a number of studies have indicated that the context in which different firms operate can have an impact on the efficiency of the incentive system (Matolcsy & Wright, 2011). Thus, this can in turn have an impact on the relation investigated in this research: variable compensation and firm performance. The industries within our research are assumed to differ from each other on several levels and the firms operate under different settings and contexts. The external factors often take time to adapt to and how well the firm match its strategy to the external context could be crucial. The incentives impact on the firm's financial performance could be harmed due to unexpected incidents in the context and the firm needs to be prepared to include these issues within their strategy.

6.8 Industrial differences
The attained results regarding the inter-industry differences display different results in the relation between pay and performance among the included industries. We therefore accepted Hypothesis 2 and conclude that inter-industry differences are present within our sample. Since the three industries IT, Retail and Electric utilities, attained similar outcomes and did not display statistically significant results; the analysis and conclusions regarding these outcomes must be interpreted with precaution. However, the results regarding the Healthcare industry are
statistically significant and imply a positive relation between variable compensation and firm performance. Further, within the Finance industry a weak relation between variable pay and performance could be displayed in the robustness test. Therefore, these industries will be analyzed in further detail.

In relation to previously conducted studies within pay for performance and inter-industry effects, the empirical evidence of this study both confirms previously attained results as well as contradict them. Ely (1991), examined the inter-industry differences among four different sectors: Electric utilities, Oil and gas, Banking and Retail. The results indicated significant differences in variable compensation as well as firm performance in each of the different industries. Even though the study conducted by Ely (1991) and this study includes similar industries, the significance of the attained results differs. Further, Ely (1991) concludes that the explanatory power of the conducted model increased when the sales revenue and net interest income are included as variables.

Dale-Olsen (2012) conducted a study regarding pay for performance and firm performance and industry differences concerning Norwegian firms. This empirical evidence of our conducted study confirms the findings by Dale-Olsen (2012) on a general level: no significant relation between pay and performance can be confirmed. Furthermore, the overall conclusion concerning the industrial differences is also similar since the results implicate that the relation of pay for performance and firm performance differs among the included industries. However, regarding the inter-industry differences the empirical evidence of this conducted study and Dale-Olsen’s study differs considerably. Dale-Olsen’s (2012) evidence indicates that performance pay is exceedingly related to high-productivity firms in the manufacturing sector, however this relation cannot be found in other industries. Although methodical differences exist between the conducted studies, the results indicate considerable differences also explained by other factors.

As stated in the previous part of this discussion, agency problems may occur within an organization. A possible way to minimize costs and problems related to agency issues is to align the incentives with the performance of the firm. In this study we found a positive relationship between variable compensation to the board and the CEO related to the firm performance within the Healthcare sector. This result goes in line with Kevin (2003) who found
that there is a statistical significant relationship between the two variables. Kevin (2003) focused on the Healthcare industry and investigated 23 firms during a period of 6 years. In our study we have used approximately the same time period, although this study included a higher number of firms which can have an impact on the attained result. Furthermore, Reiter et al. (2009) investigated CEO compensation within the Healthcare sector during a period of eight years in the U.S. market. The obtained results within their performed study suggest that the compensation of the CEO is mainly unrelated to the financial performance among the included hospitals. Thus, this result does not go in line with the results attained in our thesis, though the national factor, the time period and other external and internal factors can have an impact on the result. As mentioned above, an extensive part of previous research within the area of pay for performance is inconsistent.

The empirical statistical result of the Finance industry displays no positive relationship between the variable compensation and the performance of the firm. However, in the robustness test a weak significant relation between variable compensation and performance is detected. Within this sector companies within property and liability is also included, as in accordance with the GICS classification. John and Qian (2003) have conducted where the pay for performance sensitivity is examined within the Finance industry. The empirical evidence indicates that the pay for performance sensitivity is lower within the Finance industry compared to manufacturing firms. In line with this conducted study, the results obtained by John and Qian (2003) implicate a weak relationship between variable pay and performance.

Further, a previous study by Sun, Wei & Huang, (2013) investigated the relation between incentives and the firm performance within the Finance sector and included property and liability companies. The findings within their study shows that firm efficiency is positively and significant associated with total compensation. In this study we examine how variable compensation impact firm performance, and a possible explanation to the differing results can therefore be the different measurement of compensation. This explanation has been supported by a conducted study by Banker, Darrough, Huang and Plehn-Dujowich (2013) which findings display that while the salary of top management is positively correlated to performance, executive bonus shows of no such positive relation. Following this argumentation, it can be concluded that the total compensation may have a stronger influence on performance within this sector, than the variable compensation.
6.9 Further limitations
Although this study is conducted in line with previous research and within theoretical frameworks which have been well established, this study contains several limitations. The attained empirical evidence implies that top management variable compensation has no significant impact on firm performance on a general level. However, it is vital to stress that the examined variable compensation within this study solely includes monetary short-term compensation, or bonus. There are several other commonly applied reward systems within firms, such as stock options and pension schemes (Core, Holthausen, & Larcker, 1999; Adut, Holder, & Robin, 2013) which is not included in this study. The potential effect of such reward systems on firm performance is not examined in this study and no conclusion can therefore be made regarding how these systems influence the performance of firms.

It should also be stressed that this study solely includes a sample of large firms in Sweden. Therefore, the generalizability to small sized organizations and firms which operates within a different context are limited. Furthermore, this study regards the variable compensation to the top management of the firm and does therefore not include the implementation of incentive systems in general. The choice to only examine the top management of the firm was made in consideration that the top management is assumed to hold the most influential effect of the firms’ main operations.
7. Conclusion

In this section we conclude our results together with the written discussion. We aim to tie all parts together and present our conclusions of the study based on our research question.

The purpose of this thesis is to examine if there is a relationship between the variable compensation to the top management and the financial performance of the firm. In our thesis we have examined this subject in further depth by studying if contextual issues, in terms of different industries, have an impact on the relation between the reward system of the top management and firm performance. Further, our study focus on the Swedish context, since a substantial part of previous research has been conducted within Anglo-American settings (van der Laan, van Witteloostuijn & van Ees, 2010).

In order to examine the relation of variable compensation and firm performance, ordinary least square multiple regressions were conducted. The regression analyses were performed on a general level including a total sample, as well as on an industry level to detect inter-industry differences. The empirical evidence displays several findings. On a general level no significant relationship between top management variable compensation and firm performance can be confirmed. On an industry level, a positive relation between variable compensation and firm performance is detected within the Healthcare industry. Further, we find within the Finance industry a significant although weak relation between implemented incentive systems of the top management and firm performance. Among the other included industries, no significant relation between top management variable compensation and firm performance can be confirmed. With basis in our attained results, we therefore conclude that on general level incentive systems of the top management have no significant effect on firms’ financial performance. However, we also conclude that the relationship of variable pay of the top management and firm performance is contingent on the industry in which the firm operates.

A substantial part of previous research has discussed top management compensation in light of Agency theory (e.g. Jensen & Murphy, 2010; Core, Holthausen, & Larcker, 1999; Attaway; 2010). The empirical evidence of this study does not display any support of Agency theory, but rather insinuate the prominence of alternative theories within this area of research, such as Self-determination theory. Furthermore, this study implies emphasis of Contingency theory, since the results confirm several inter-industry effects. Consequently, we argue that the implementation and design of the incentive system for the top management needs to be
accustomed to the specific environment in which the firm operates and that a universal model of reward systems may not be effective in terms of enhanced firm performance.

This study is also of theoretical and practical relevance since it is conducted within the Swedish context. Since a substantial part of previous research has been performed in the United States (e.g. Hall and Liebman, 1998; Reiter et al. 2009; Huang et al. 2011) the attained results of this study are of particular essence for shareholders, managers and academics in Swedish as well as other in Nordic countries. The attained results of this study illustrate a general non-relationship between top management variable compensation and firm performance and do therefore not provide support for substantial bonuses for the top management in Sweden. Furthermore, we stress the importance of continued research within the Swedish context, as well as under other conditions in order to enhance clarity of the contradicting and opposing evidence within this area of research.
8. Future Research

This part will include suggestions for further research within the area of pay for performance. These suggestions are based upon the results that we received within this thesis.

A conclusion from our research is that the empirical evidence of this study does not go in line with Agency theory. A suggestion for future research is to develop a more exploratory study, based on a qualitative method. A further proposal is to increase focus on the intrinsic motivation and see how and if it affects the top management. In this thesis we examined Contingency theory in order to compare different industries. A further suggestion for future research is to study other relevant theories connected to this area of research and expand the theoretical framework.

The empirical evidence of this thesis exhibited a significant positive relation between variable compensation and firm performance within the Healthcare sector. As discussed above, the relation of pay for performance within the Healthcare industry has been previously examined by amongst others Kevin (2003) and Reiter et al. (2009). Due to the fact that this relation was clearly distinguished from the other included industries, we want to emphasize the importance of further research within this specific sector in the Swedish context.

Considering the lack of research within the Swedish context, we want to emphasize the importance of a continued research within the Swedish context regarding the relation between top management variable pay and firm performance. The lack of previous studies within the Swedish context is clear, and we believe that there are additional angles within this context which needs to be further explored. Furthermore, a suggestion for future research is to compare the Swedish context to other Nordic nations and see whether any differences can be detected.

Within our study we have conducted a cross sectional study including five industries. In accordance with (Reiter et al. 2009), we suggest that an alternative to future research is to do a longitudinal study in order to see the development over time. This would also enable the researcher to study the long-term effects of variable compensation on firm performance. Further, it could be difficult to detect trends as well as fluctuations in the economy while investigating a short time period. Therefore, it would be of interest to determine if pay for performance can be considered as more or less effective within another period of time.
9. References


Miller, D.J. 1995. “CEO salary increases may be rational after all: Referents and contracts in CEO pay” *Academy of Management Journal*, vol. 38, no. 5, pp. 1361-1385.


Appendix A – Distribution of Residuals

Total

Electric Utility

IT

Retail
Appendix B – Check for linearity

Total

Electric Utility

IT

Retail