



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Do Swedish Firms Pay Their Boards Excessive Compensation?

- A study on the economic determinants and effects of excessive board compensation among Swedish firms

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Supervisor:
Taylan Mavruk

Graduate School

Authors:
Karin Bengtsson
Erica Wollin Björk

Abstract

Corporate governance and board issues have not only gained interest due to well-known governance failures such as the 2001 Enron scandal, rather, the field has been of interest at least since 1776 and the development of Smith's Wealth of Nations. Due to corporations' immense contribution to economic activity, their agency problems and costs remain substantial. Naturally, so does the role of boards. In corporate governance contexts, compensation is often viewed as one of the most important incentivizing mechanisms, as well as one of the most important conflicts of interest among firms. By employing a two step model, consisting of a prediction model and regressions, this study determine expected chairman and board member compensation, and whether or not Swedish listed firms overcompensate their board of directors. It further investigates the relationship between excessive compensation levels and ownership structures, more precisely insider and institutional ownership, as well as the effects of excessive compensation levels on future firm performance and risk taking. By running regressions and predicting compensation, our results show a significant average positive excessive chairman compensation of 21%, respective member excessive compensation of 8.56% in relation to the benchmark, over our sample period. Further, our results suggest that insider ownership has significant explanatory power on excessive chairman and member compensation and that the effect of excessive compensation levels is positively significant on future firm performance when testing against CAPM. This has interesting implications in the light of agency theory, suggesting that excessive compensation might not be a result of cronyism. This study contributes to existing research on the field by , as of our knowledge, for the first time, finding results that suggest that the practice of overcompensating chairmen and other board members exists among Swedish firms. It also contributes to already existing research by considering discrepancies between different functions of the board by separating the compensation of the chairman of the board and other directors, which induce more sophisticated conclusions regarding the association to firm performance.

Keywords: Determinants of Board Compensation, Excessive, Chairman, Member, Corporate Governance, Agency Theory, Ownership, Performance, Risk

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Definitions

For simplicity, we will hereafter and throughout the thesis denote all associates of the board as directors, whereas when separation is necessary, the chairman will be treated separately and the remaining directors will be denoted as members.

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1. Introduction

The first section of this report gives a short introduction to the subject and how it has caught recent attention in research. Further, the purpose of the study is explained and the main research questions are disclosed, and lastly, a brief overview of the organization of the report is given.

1.1 Background and problematization

Corporate governance issues have not only gained interest due to well-known governance failures such as the 2001 Enron scandal, rather, the field has been of interest at least since 1776 and the development of Smith's Wealth of Nations (Hermalin & Weisbach, 2012). However, in many of the corporate scandals that took place in the early 2000's, the monitoring failure of the board of directors was proposed as a main cause (Oxelheim & Clarkson, 2015; Hermalin & Weisbach, 2012). This has resulted in the reconstruction of corporate governance regulations¹ and standards as well as an increased interest in corporate governance issues, not only from researchers, but also from investors and regulators (Oxelheim & Clarkson, 2015; Brick, Palmon & Wald, 2006). It has also led to a discussion on the role of boards and the adequacy of their incentive schemes in the light of agency theory (e.g. Ferrarini, Moloney & Ungureanu, 2009), as well as the board's effect on firm behaviour (Jensen & Zajac 2004; Pugliese, Bezemer & Zattoni, 2009). For instance, Carpenter and Westphal (2001) and Deutsch (2007) both suggest that board compensation affect firm decisions in terms of for example diversification and strategy decisions.

Whereas executive compensation has achieved substantial coverage in research, board compensation has recently gained increased media attention (Dah & Frye, 2017). Among other things, this might be a result of the lawsuit against Facebook in 2013, that claimed that board directors voted for, and thereby provided themselves with, excessive compensation, which raised debate regarding directors' ability to set their own compensation, as well as what a reasonable level of compensation really is. In corporate governance contexts, compensation is often viewed as one of the most important incentivizing mechanisms, as well as one of the most important conflicts of interest among firms (Berk & DeMarzo, 2013). It is also an essential tool to attract and retain valuable human resources. However, there is little research focused around the determinants of board compensation, especially outside the US market (Dah & Frye, 2017; Andreas, Rapp & Wolf, 2009; Oxelheim & Clarkson, 2015). This lack of empirical research constitutes a major gap in the

¹ For instance, regulations requiring the board to include a certain portion non-executive directors, where their independence is considered a key corporate governance mechanism.

corporate governance research field. Existing studies and literature suggest that boards should be compensated for the monitoring efforts and duties required to protect shareholders interest, which should be determined by factors such as firm complexity.

Because such factors determine board compensation, they should be able to predict expected director pay, and whether there is excessive compensation (Ting, 2016; Dah & Frye, 2017). Whereas some studies providing evidence for excessive compensation levels explain the phenomena as a way to attract and retain key personnel and increase future performance, (e.g. Ting, 2016) some researchers conclude that excessive compensation effects future performance negatively, and suggest that the occurrence is a result of back scratching and cronyism (e.g. Dah & Frye, 2017; Brick et al., 2006). In this sense, excessive compensation could be seen either as an incentivizing governance tool or as an agency cost, harmful to the firm. For example, Ting (2016) conclude that 53.21% of Taiwanese firm overcompensate their directors and that 13.72% of these boards are overcompensated by more than 50% over the predicted level. However, as this study also suggests that there is a positive relationship between excessive compensation levels and future performance, it “might not be all that bad” (Ting, 2016). Dah & Frye (2017) find similar results and conclude that average director compensation in the US market exceeds the efficient compensation level by 61%. For the average firm and its shareholders, this might be troublesome, as the study suggests that this is a result of cronyism rather than performance expectations. Nevertheless, there is a lack of research in the field of excessive board compensation that could spawn interesting implications. For example, in order to determine whether excessive board compensation is positive or negative for a firm’s shareholders, one must determine how the compensation functions as a corporate governance mechanism in terms of measures such as firm risk taking and firm performance. Moreover, to interpret the phenomena from an agency perspective, its relation to factors such as insider ownership and institutional ownership should be considered. Perhaps most importantly, conclusions drawn on data on average total board compensation does not make a distinction between the chairman of the board and other directors, and therefore could be unsuccessful to capture important corporate governance implications.

Due to corporations’ immense contribution to economic activity, their agency problems and costs remain substantial. Naturally, so does the role of boards. In research, as well as in the public eye, the role of boards has often been overshadowed by the role of executives in a firm. Nevertheless, boards have caught spotlight when things go wrong, as was the case in the scandals mentioned above. Therefore, this study is intended to contribute to existing research by investigating board

compensation aspects in a country-specific setting, in this case the Swedish market, which is not only interesting for us as authors as it is our domestic market, but also as a market where the so call mixed board structures can provide interesting implications for research. This will be further discussed in the second section of the thesis. Due to the board's nature as an essential corporate governance function, the findings of this study will be of interest not only for firm decision makers and investors, but also for regulators.

1.2 Aim of the study

Given the increased importance of corporate governance and board issues, as well as the (as of our knowledge) limited research on the area, especially on the Swedish market, we aim to investigate the determinants of board compensation among Swedish firms, whether firms tend to overcompensate their chairmen and other directors, and if so, how that affects the firm in terms of performance and risk taking. We also aim to investigate if there is any relation between the ownership characteristics of the firm and whether they reward their directors with excessive compensation. This will be done in the pursuit of answering the research questions of this thesis.

1.3 Research questions

Q1: Is there excessive board compensation among Swedish firms, and if so, how does it affect firm performance and risk taking?

Q2: Does insider ownership and institutional ownership affect excessive board compensation among Swedish firms?

1.4 Contribution to research

This study aims to provide evidence of the factors determining board compensation levels and, as of our knowledge, for the first time, examine the extent of excessive board compensation among Swedish listed firms. It also aims to contribute to previous research examining total board compensation as an average of chairman and member compensation, by separating the compensation of the chairman and other directors, which will yield more accurate conclusions. Further, it investigates the effects of overcompensating on firm performance and risk taking. The results of this study thus contribute to the current debate on corporate governance and board compensation policies and practices in Sweden and other countries with similar corporate governance contexts.

1.5 Organization of the report

The remaining parts of the thesis are organized as follows. In section 2, the Swedish board and governance structures, and thus the foundation of the market we examine is briefly explained. Section 3 provides an overview of the theories related to board compensation, and section 4 briefly describes the previous research and literature on the subject. The hypothesis development of the report can be found in section 5, and section 6 explains its data, variables, and econometric methodology. Section 7 provides results and analysis from empirical data, and in section 8, these results will be discussed and the report will be concluded.

2. Governance and board structures in Sweden

Governance structures, and thus board structures, vary across economic markets as a result of historical, cultural and regulatory differences. In order to hypothesize our research questions, we must not only understand the established research on the subject, but also the specific context that constitutes the foundation of our research. Therefore, the second section of this report describes the most fundamental governance structures that influence the Swedish setting, in which we aim to draw conclusions.

2.1 Traditional board structures

According to Clarke, 2007, the most established board structure practices are the Continental European and the Anglo American, where the Continental European is characterized by a two-tier system consisting of an executive board and a supervisory board, whereas the Anglo American can be described as a one-tier system where the board includes both executive management and non executive directors. According to Oxelheim and Clarkson (2015), the Swedish board structures makes the market optimal for research on board compensation. In Sweden, a two-tier system including a supervisory board and a management board is applied. The board must be chaired by a non-executive director, but the CEO of the firm is allowed to be a non-chairman member of the board. Therefore, even though the Swedish traditional board structure historically have been categorized as Continental European the system might be considered to be mixed between the two approaches (Heidrick & Struggles, 2009). Due to its supervisory role, the monitoring duties of the board and especially the chairman of the board might be more evident in the Continental European setting (Oxelheim & Clarkson, 2015).

2.2 The Swedish Code

The Swedish Code of Corporate Governance was introduced in 2005, and has been revised consecutively in 2008, 2010, 2015 and 2016 (SCGB, 2019). This Code settles three levels of hierarchy within firms on the Swedish stock exchange; the shareholders' meeting, the supervisory board, and the CEO, in that particular order. Its purpose is to ensure good corporate governance, and one of the most foundational principles of the Swedish code constitutes that a majority of the directors on the supervisory board must be independent of the firm and its management, and that employee representatives have the right to accompany the board. The Swedish code contains 11 chapters with principles that direct aspects such as the annual general meeting, appointment of the board, corporate governance and management of the firm.

The Code also settles the three main roles of the supervisory Swedish boards. These include the control role, whose main focus is to monitor the firm and its management and make sure that the firm is operated at the best interest of its shareholders (Fama & Jensen, 1983), the strategic role, involving establishment of frameworks, directives, mission and values for the firm, and the institutional role, where the most important task is care of the external relations to shareholders and stakeholders of the firm, as well as the hiring and firing of the CEO (Stiles & Taylor, 2001).

Even though the Swedish Code has become the generally accepted set of principles among firms listed on Nasdaq Stockholm, they are not obligated to follow all parts of it. However, they are obligated to transparently state in which ways the governance they apply differs from it, in line with the principle of “comply or explain” (SCGB, 2019).

2.3 Compensation of Swedish boards

Through the shareholders and the annual general meeting, one of the tasks of the nomination committee is to propose board member and chairman compensation levels in line with the firm’s required competence and financial situation (SCGB, 2019). However, the compensation of the board, as well as executives, is set by the remuneration committee. This committee is appointed by the board of directors, and it may very well be chaired by the chairman of the board. In that sense, it could be said that directors can set their own compensation.

It is also possible for firms to employ external consultants to support the compensation setting process for executives and boards (Oxelheim & Clarkson, 2015). This concept has increased over the years among Swedish firms, but it has been criticized for lacking transparency. The Swedish code states in section 9.3 that “If the remuneration committee or the board uses the services of an external consultant, it is to ensure that there is no conflict of interest regarding other assignments this consultant may have for the company or its executive management.” (SCGB, 2019). However, such consultants may be appointed by executives such as the CEO, and in a study from 2009, it was concluded that only four of the Swedish firms listed on the Nasdaq 30 disclosed the names of their remuneration consultants (OECD, 2011). This lack of disclosure could make it difficult for shareholders as well as analysts to determine whether the firm truly complies with the Swedish code.

In a report from PWC (2016), examining the firms that were listed on Nasdaq Stockholm’s mid cap list in 2014, it is said that chairmen are traditionally paid more than other members of the

board due to the individual responsibility that a chairman position brings. More precisely, the average chairman compensation among the firms in 2014 amounted to SEK 425700, and in 2015 it amounted to SEK 459000, which represents an increase of 7,8%. Of the industries included in the report, the highest chairman compensation levels were found in Technology and Consumer goods, whereas the lowest compensation levels were found in Financials and Health care. It is expressed that the low compensation in financial sectors was due to an immense drop of 26% between 2013 and 2014.

The average total member compensation amounted to SEK 204800 in 2014, and in 2015 it amounted to SEK 221600, representing an increase of 8,2% (PWC, 2016). Similar to chairman compensation, the highest levels of member compensation are found in Technology and Consumer services and the lowest in Financials and Health care. In the large cap list, the average chairman compensation during 2014 amounted to SEK 1237000 and the average member compensation to SEK 453200, and in the small cap list, the average chairman compensation amounted to SEK 328700 and member compensation to SEK 154900. At a first glance of these numbers, it can be said that not only the size and industry of the firms matter to the compensation levels of boards, but also the director's specific function of the board.

According to Oxelheim and Clarkson (2015), the majority of Swedish boards are compensated through fixed fees, and a study by Heidrick and Struggles (2009) stated that Swedish firms compensated their directors with 99% fixed compensation, which was the highest proportion of fixed compensation in Europe. However, since then, some firms have begun to compensate directors with some type of variable compensation, such as synthetic share grants and stock options. However, the Swedish code specifically prohibits non-executive board directors from receiving share options as compensation (Oxelheim and Clarkson, 2015). In this sense, Swedish corporate governance structure could be viewed as more Continental European, as stock option grants and other incentivizing compensation schemes are more prominent in Anglo American settings (Oxelheim & Clarkson, 2015; Andreas et al., 2009).

3. Theoretical Framework

The third section of this report contemplates some of the theories that can be used with the aim to explain the aspects and behaviours around board compensation. More specifically, the theoretical framework for this study consists of the perhaps three most central theories of Corporate Governance- Agency theory, Optimal Contracting theory, and Managerial Power theory. First, a brief description of each theory will be given, and then they will be elaborated upon in the context of this report.

3.1 Introduction to theories of corporate governance

The corporate governance concept is broad, but can comprehensively be defined as a “system of mechanisms, relation and objectives, through which companies are directed and controlled” (CFACG, 1992). As a significant portion of economic inefficiency among firms are caused by conflicts of interests between stakeholders, it is crucial for any firm to seek redemptions for these issues. The measures that can be taken to do this are called corporate governance. A key feature of effective corporate governance is to start from the objectives of the firm, which in the simple case is value maximization, and monitor and coordinate business activities in line with these. Examples of how this can be done are by monitoring and supervising the management of the firm to minimize agency costs. One important governance mechanism is compensation used to incentivize not only managers, but also board directors, to align the interests with shareholders.

3.2 Agency theory

Agency theory is anchored in the separation of ownership and control and manages the principal-agent issues that arise. Jensen and Meckling (1976) describe the scenario in which such problems might arise as a contract where the principal (owner) entrust the agent (manager) with some decision making power according to a predefined set of goals. This theory, however, lies on the assumption that each individual behaves opportunistically and in their own interest depending on their perceived utility. Thus, in order to protect the contract and minimize issues that might arise, actions that can be costly to the firm must be taken (Jensen & Meckling, 1976). These agency costs are mainly categorized as monitoring costs, bonding costs and residual costs.

Based on the principal-agent relationship, corporate governance is often viewed as a set of mechanisms that are used to align the interests of the two parties (Shleifer and Vishny 1997). The purpose of such governance is thus to establish an effective structure that functions despite

diverging interests that appear as a consequence of the separation of ownership and control (Berle and Means 1932; Jensen and Meckling 1976).

Agency theory is central in most research concerning board compensation (Adams et. al, 2009). In an agency theory approach, the board in some ways a special actor, as it can be argued to be both the principal and the agent. This is what is called the double agency dilemma (Stiles & Taylor, 2002). Based on the concepts of information asymmetry and conflicting interests, the three-level corporate governance structure consisting of shareholders, boards and management that was created to mitigate agency problems, might in fact generate new agency problems (Jensen, 1993, Kumar & Sivaramakrishnan, 2008). In this sense, Ting (2016) argues that a firm seeking to maximize firm value will select board and managers to minimize agency costs, and thus that the construction of agency cost minimizing compensation schemes is an essential part of maximizing firm value. Such effective governance mechanisms should align interests of principal and agent and thus incentivize the manager or director to increase firm performance and decrease risk aversion that otherwise could result in lost value enhancing business opportunities. The ownership perspective could have implications in terms of excessive board compensation. For instance, a higher rate of institutional shareholders should function as a monitoring force, decreasing the monitoring duties of the board and thus the required compensation level. The opposite would apply to shareholders that are insiders of the firm, which could encourage an environment of cronyism, inducing agency costs.

The dual roles of the board of directors as agents towards shareholders and principals towards management further enhance the importance of independent, non executive board members, monitoring and strategically advice the firm's management (Fama, 1980; Fama & Jensen, 1983). However, it also strengthens the role of incentives, as through compensation (Kumar & Sivaramakrishnan, 2008). Due to the assumption that directors might follow their own interests and maximize their own wealth, shareholders will seek to create contractual structures that minimize these agency costs (Williamson 1984; Jensen 1993).

3.3 Optimal Contracting theory

Optimal contracting is a part of agency theory where principal-agent problems can be solved or minimized through contractual arrangements (Salanié, 1997; Laffont & Martimort, 2002). The theory lies on the concept of information asymmetries, where contracts are needed so that the party with information advantage cannot exploit the other party.

In an optimal contracting setting, compensation schemes should be designed to incentivize directors to serve the ambition of maximizing shareholder value. Therefore, on the foundation of this theory, higher compensation should lead to higher performance. (Bebchuk & Fried, 2002). Thus, in the light of optimal contracting theory, incentivizing compensation such as stock option compensation is central, and therefore, assuming a higher degree of variable incentive pay, the approach of this theory might be more relevant in Anglo American markets.

However, Bebchuk and Fried (2002) argue that the optimal contracting approach is limited in explaining compensation practices appropriately, as their analysis suggests that neither bargaining between executives and management, nor market constraints², result in optimal contracts or constrain board compensation effectively. The main reason for this is, in line with agency theory, the irrational assumption that managers and directors automatically serve the interests of shareholders, rather than exploiting their power to increase compensation without increasing performance.

3.4 Managerial Power theory

In the managerial power approach, there is a connection between managerial power and managerial rent extracting (Bebchuk & Fried, 2002). This is mainly found where managers can use their power to influence their own compensation through the compensation-setting process. This means that they can transfer wealth from shareholders to themselves by increasing their compensation without expectations of proportionally increasing the firm's performance.

Such logic also suggests that directors can influence their own compensation (Bebchuk & Fried, 2002). In this approach, again, as in agency theory, executive compensation is not only a tool to mitigate agency problems, but also a part of the agency problem. Even though the managerial power approach has been discussed mainly in the context of executive pay, it is relevant in the board context, especially as CEO's are in fact allowed to be a part of the board in Sweden. It is possible that both might agree on higher compensation without increased performance expectations, as the board set both the CEO's compensation and, through the remuneration committee, their own compensation.

² Potential market regulations constraining executive compensation even in absence of bargaining.

4. Literature review

In the fourth section of this report, prior research and literature within the field of determinants of board compensation as well as excessive board compensation and its effect on firm performance and risk taking are presented. As much of the research on board compensation is based on studies on executive compensation, literature on the subject is of relevance, and therefore, some research relating to executive compensation is included in this section.

4.1 Determinants of board compensation

In research on excessive compensation, prediction models consisting of the natural logarithm of actual compensation levels have been used together with the determinants of board compensation to determine excessive compensation (e.g. Ting, 2016; Dah & Frye, 2017). This means that the calculated excessive compensation is based on, and benchmarked against actual compensation levels. Benchmarking is a useful method to determine reservation wages (Holmström & Kaplan, 2003), and is essential in compensation directors in a way that attract and retain their valuable human capital (Bizjak et al., 2008). The determinants of board compensation can, in line with earlier research (e.g. Andreas et al., 2009; Dah & Frye, 2017), that is based on studies of executive compensation (e.g. Core, Guay & Larcker, 2008; Barkema & Gomez-Mejia, 1998) be divided into three rather broad categories that all affect the monitoring duties of the board; measures of firm complexity, firm performance, and board characteristics.

Firm complexity

The existing literature on the subject of boards recognize the essential part that the chairman and the members of the board play in a firm's governance structure (Roberts and Stiles 1999). For example, researchers such as Weisbach (1988) conclude that board directors play a significant part when it comes to top management monitoring. Indeed, the existing research in the field has suggested, in line with agency theory, that board compensation is positively related to the extent of monitoring that the board will have to undertake (Oxelheim & Clarkson, 2015).

The extent of required monitoring is associated with different measures related to firm complexity. Prior studies indicate that larger firms have greater monitoring needs, and that proxies for firm size (Dah & Frye, 2017; Brick et al., 2006; Yermack 2004; Farrell et al., 2008) such as the natural logarithm of total assets have significant positive effect on board compensation. Linck, Netter and Yang (2009) suggest also that board compensation increases with workload, and as larger firms are more difficult to monitor, it is reasonable to assume that compensation would increase with firm

size. Further, Linn and Park (2005) argue that firms with greater firm growth and investment opportunities require more monitoring, which could be associated with higher levels of board compensation. This is consistent with research by Bryan et al., (2000), Ryan & Wiggins (2004) and Fich & Shivdasani (2005) that provides evidence for the positive effect of investment opportunities on director compensation, in which the market to book ratio usually has been used as a proxy.

Firm performance

According to literature on pay-for-performance relationships, performance measures significantly affect board compensation, However, the results of research on the area have been rather diverse. Results based on accounting based measures such as return on assets (ROA) have been both positive (e.g. Schmid, 1997; Brick et al., 2006) and negative (e.g. Ryan and Wiggins, 2004) as well as inconclusive (e.g. Farrell, Friesen & Hersch, 2008). What can be said is however that there is a stronger relationship between accounting based performance measures and board compensation in Continental European settings, where incentivizing compensation schemes including for example stock options are not as prevalent as in Anglo American tradition (Andreas et al., 2009). This is consistent with the results based on market based performance measures in the US market, where measures such as total shareholder return and market adjusted return positively influence board compensation (Brick et al., 2006; Linn and Park, 2005; Yermack, 2004; Bryan et al., 2000). Based on this, it seems reasonable to assume that better performing firms will have higher levels of compensation (Dah & Frye, 2017; Fich and Shivdasani, 2005). Noteworthy is that results on executive compensation from the Swedish market also are inconclusive. Whereas Randøy and Nielsen (2002) fail to find significant relation between neither accounting nor market based performance measures and CEO compensation, Orelund (2008) find that both EBITDA and share return positively influences CEO compensation. According to Oxelheim, Wihlborg and Zhang (2012), the explanation of these uncertain results is the macroeconomic environment of the firms. However, in the context of boards, Oxelheim and Clarkson (2015) fail to find significant relation between firm performance measured as Tobin's Q and chairman compensation.

Board characteristics

It is also reasonable to assume that governance structures influence board compensation as boards in fact set their own compensation, that is, different governance structures might affect directors' abilities to extract excessive compensation levels (Dah & Frye, 2017). Research indicates that measures associated with corporate governance structures, such as certain board characteristics significantly affect compensation. For instance, there is a negative relation between the size of the

board and its compensation (Ryan and Wiggins, 2004). This could suggest that larger boards encounter coordination issues, which cause them to fail to extract higher levels of compensation (Jensen, 1993), but also that firms use aggregated board compensation, and thus pay larger boards less per director (Dah & Frye, 2017). According to Cheng (2008), any advantage in terms of additional monitoring is generally outweighed by coordination and communication problems in larger boards, and therefore, it is reasonable to assume that directors in large boards are less likely to extract excessive compensation. However, Oxelheim and Clarkson (2015) find a significantly positive relationship between chairman compensation and the size of the board, which is the opposite of the studies mentioned above. Interestingly, also this result is explained by the possible existence of coordination issues. In this case, the authors rely on that chairmen are responsible for monitoring the boards, and that boards are compensated for their monitoring duties. Larger boards should require more monitoring, which explains the positive relation between chairman compensation and larger boards.

4.2 Excessive board compensation

Previous research in the field provides evidence for excessive compensation (Brick et. al, 2006; Dah & Frye, 2017; Ting, 2016) For example, Ting (2016) concludes that 53,21% of Taiwanese firms pay excessive levels of board compensation, and that 13,72% of these board are overpaid by more than 50%. Dah and Frye (2017) examines US data and finds that overcompensation is greater than undercompensation both in terms of frequency and size, and that the average US firm compensates their board directors at levels 61% above the efficient compensation level.

There is some research examining the relationship between compensation and ownership structures of the firm. For instance, Core et al. (2008) argue that measures of ownership structure have significant explanatory power on CEO compensation, after controlling for other economic determinants of pay. Randøy and Nielsen (2002) find a strong negative relationship between CEO ownership and CEO compensation. According to Holderness (2003), ownership structure is a major governance mechanism, and from an agency perspective, high ownership concentration should lower the expected level of compensation as an effect of influential owners either being efficient supervisors or insider owners having aligned interest with shareholders and thereby reducing agency costs.

Oxelheim and Clarkson (2015) argue that determinants of CEO compensation such as firm size and ownership structures are likely to affect chairman compensation as well. However, there are

mixed results in studies examining ownership structures and board compensation. For instance, Bryan et al. (2000) and Fich and Shivdasani (2005) find a negative relationship between a large proportion of shares held by insiders of the firm and total compensation, which is consistent with Andreas et al. (2009), suggesting a negative relationship between managerial ownership and board compensation. Schmid (1997) and Elston and Goldberg (2003) find the same relation for firms with high ownership concentration. However, Cordeiro, Veliyath and Erasmus (2000) find positive relation between institutional blockholders and higher compensation levels, whereas Andreas et al. (2009) fails to find significant relationship between board compensation and institutional ownership. In regards to excessive board compensation, Ting (2016) finds positive correlation to both managerial ownership and foreign institutional ownership. Noteworthy is the discussion on endogeneity issues associated to ownership structure variables (e.g. Pindado & De La Torre, 2004), which will be briefly touched upon in the methodological section of this thesis.

The majority of research suggests that excessive board compensation is disadvantageous for the firm's shareholders. Core et al. (1999) suggest that there is a negative relationship between excessive compensation and future firm performance and Brick et al. (2006) support and enhance this as their findings show a positive and significant relation between executive and director excessive compensation and that both have negative effects on future performance. They explain the phenomenon to be a result of poor corporate governance and cronyism. However, on the contrary, results by Ting (2016) show that directors are excessively compensated in order to retain their valuable human capital, and that excessive compensation has a significant relation to future firm performance. This could suggest that excessive board compensation is not a sign of poor corporate governance. When testing the influence of excessive compensation on firm performance, control variables influencing the market based firm performance have been used in the econometric models. These variables are rather conventional and accepted in research on firm performance, and include factors such as firm size, debt ratio, growth rate of sales, ROA, (e.g. Ting, 2016) board size (e.g. Yermack, 1996; Eisenberg, Sundgren, and Wells, 1998) and various ownership characteristics (e.g. Cheng, 2008).

In terms of risk taking, Ting (2016) suggest that there are little, if any relation between excessive board compensation and volatility of firm performance which is used as a proxy for firm risk taking. Here, it is claimed that if excessive compensation increases present or future firm performance without increasing firm risk taking, the idea might not be that bad. However, a study on banks in the EU shows that executive excessive equity or cash variable compensation leads to

increased firm risk (Uhde, 2016). Moreover, AliJafri and Trabelsi (2013) show that CEO risk taking is a determinant of CEO excessive compensation. In the light of agency theory, however, higher compensation levels can be argued to function as an incentivizing mechanism to take on risky business opportunities in order to maximize firm value. This would, to some extent, make excessive compensation an efficient governance tool. However, in line with much research (e.g. Core et al., 1999; Brick et al., 2006) on future performance levels, excessive compensation does not seem to work as an efficient governance mechanism and therefore, it could be reasonable to believe that excessive compensation levels could even decrease firm risk taking. To proxy firm risk taking Ting (2016) use stock price volatility.

Firm performance variability as a proxy for risk taking have in earlier research been found to be influenced by factors that are suitable to use as control variables. Similar to studies examining firm performance, these include firm size (e.g. Adams, Almeida, and Ferreira, 2005), debt ratio, ROA (e.g. Ting, 2016) age of the firm (e.g. Adams, Almeida, and Ferreira, 2005), capital expenditures and R&D expenditures to sales (e.g. Chan, Lakonishok, & Sougiannis, 2001), board size (Cheng, 2008) and various ownership characteristics (e.g. Ting, 2016).

5. Hypothesis Development

Based on existing literature on board compensation as well as associated theories, we have formulated four hypotheses in the pursuit of answering our research question. These are presented in the fifth section of the report.

5.1 Hypothesis 1

In line with previous research (e.g. Ting, 2016; Dah & Frye, 2017), we hypothesize that there is significant board excessive compensation among Swedish firms, where excessive compensation is defined as the residual between actual compensation and expected compensation. In order to find expected compensation, as the first step of a two step model, we use a prediction model that accounts for firm characteristics. Based on theory and previous research on director compensation, we hypothesize that variables associated to firm complexity and the need for monitoring will have a significant effect on board compensation in the Swedish market (see the methodological section for variable definitions and Appendix Figure 1 and Table 10 for variables and expected sign). As we will conduct analysis for chairman compensation and member compensation separately, two regressions will be carried out.

Ha: There is evidence of excessive board compensation on the Swedish market.

Prediction model:

$$\ln(\text{Total Compensation})_{it} = \alpha + x_{it} \beta + \varepsilon_{it}$$

where x_{it} denotes the variables $\ln(\text{board size})_{it}$, $\ln(\text{total assets})_{it-1}$, $\text{price to book}_{it}$, $\text{market adjusted return}_{it-1}$, $\text{market adjusted return}_{it}$, $\text{return on assets (ROA)}_{it-1}$ and ROA_{it} .

Excessive compensation:

$$\text{Excessive Compensation} = \text{Actual compensation} - \text{Expected compensation}$$

$$\% \text{Excessive Compensation} = \ln(\text{Actual compensation}) - \ln(\text{Expected compensation})$$

5.2 Hypothesis 2

Based on previous research and agency theory, stating that institutional owners, acting as a monitoring power, should decrease excessive compensation, we hypothesize that the percentage institutional ownership will have a negative effect on excessive board compensation. The control variables used are motivated in research and described in the section above as well as in the

Methodology section of this thesis. As we will conduct analysis for chairman compensation and member compensation separately, two regressions will be carried out for each hypothesis.

Hypothesis 2a

Ha: There is a negative relationship between the percentage of institutional ownership and excessive board compensation.

Econometric model:

$$\text{Excessive compensation} = \alpha + x_{it} \beta + \varepsilon_{it}$$

where x_{it} denotes the variables *institutional ownership*, ROA_{it-1} , $\ln(\text{total assets})_{it}$, and *sales growth*_{it}.

Based on previous research and agency theory as well as the managerial power approach, stating that firm decision makers might act in their own interest and that managers and directors might use their power to increase their own compensation, we hypothesize that the percentage of insider ownership will have a positive effect on excessive board compensation. The control variables used are motivated in research and described in the section above. As we will conduct analysis for chairman compensation and member compensation separately, two regressions will be carried out for each hypothesis.

Hypothesis 2b

Ha: There is a positive relationship between the percentage of insider ownership and excessive board compensation.

Econometric model:

$$\text{Excessive compensation} = \alpha + x_{it} \beta + \varepsilon_{it}$$

where x_{it} denotes the variables *insider ownership*, ROA_{it-1} , $\ln(\text{total assets})_{it}$, and *sales growth*_{it}.

5.3 Hypothesis 3

Based on previous research, stating that excessive compensation might not be an efficient governance tool, as well as agency theory, stating that directors might act in their own interest rather than in the interest of the shareholders to increase their own compensation, we hypothesize that excessive board compensation will have a significant negative effect on future firm performance. As we will conduct analysis for chairman compensation and member compensation separately, two regressions will be carried out for each hypothesis.

Ha: There is a negative relationship between excessive board compensation and future firm performance.

Econometric model:

$$\text{Firm Performance}_{it} = \alpha + x_{it} \beta + \varepsilon_{it}$$

where x_{it} denotes the variables *excessive compensation*_{*it-1*}, *ln(board size)*_{*it*}, *ROA*_{*it-1*}, *ln(total assets)*_{*it*}, *debt to assets*_{*it*}, *sales growth*_{*it*}, *insider ownership*_{*it*} and *institutional ownership*_{*it*}.

5.4 Hypothesis 4

Based on previous research, stating that excessive compensation might not be an efficient governance tool, as well as agency theory, stating that efficient governance tools should decrease risk aversion of firm decision makers, we hypothesize that excessive board compensation will have a significant negative effect on firm risk taking. As we will conduct analysis for chairman compensation and member compensation separately, two regressions will be carried out for each hypothesis.

Ha: There is a negative relationship between board compensation and firm risk taking.

Econometric model:

$$\text{Firm Risk Taking}_{it} = \alpha + x_{it} \beta + \varepsilon_{it}$$

where x_{it} denotes the variables *excessive compensation*_{*it-1*}, *ln(board size)*_{*it*}, *ROA*_{*it*}, *ROA*_{*it-1*}, *ln(total Assets)*_{*it*}, *debt to assets*_{*it*}, *ln(age)*_{*it*}, *CAPEX*_{*it*} and *R&D expenditure to sales*_{*it*}.

6. Methodology

The research approach of the study, including data selection and motivation of the hypothesized variables is presented in the sixth section. We also describe the used econometric model in detail, and discuss the limitations and issues of our data and models.

6.1 Research approach

To conduct this study, a quantitative research method will be used. We will use a hypothetical deductive approach, which means that hypotheses are established based on existing theory and previous research, and tested through an econometric model on real world data describing the relevant market. The analysis will be made using regressions with panel data analysis. The regression model is weighed by many assumptions and in order to ensure reliability, the investigation must be carefully conducted, including various robustness tests (Crawley & Whalen, 2014). These tests will be mentioned in the following section, describing the results of the study. Four hypotheses have been formulated, and for each of them, two regressions examining chairman and member compensation respectively, have been conducted.

6.2 Data selection and motivation

The data in our thesis is mainly collected from the databases Holdings Nordic and Bloomberg. It contains all the firms that were listed on Nasdaq Stockholm's small, mid, and large cap stock exchange at the end of 2018, with exception for the firms where there were significant missing values that could not be disregarded or mended, which leaves us with a universe consisting of about 300 firms. The firms are categorized into 12 sectors according to the classification of Nasdaq Stockholm. These are Energy and Environment, Property, Finance, Consumer goods, Healthcare, Industrials, IT, Materials, Commodities, Consumer durables, Telecom and Media as well as Services. The data further covers the years of 2016, 2017 and 2018 which means that we adopt short panel data. We are limited to this time span due to the lack of further data availability on board compensation on Holdings Nordic. Further, the data is unbalanced as not all of the firms listed in 2018 were listed in 2017 and 2016 as well. More specifically, the sample consists of 295 observations in 2018, 296 observations in 2017, and 279 observations in 2016.

The data and especially its outliers have been verified to be accurate before conducting any econometric analysis. This has been done by for example controlling annual reports. In order to

get a more close look at the data used, summary statistics can be seen in the results section below as well as in Table 11 in Appendix.

6.3 Model

In order to answer our research questions, four separate hypotheses have been formulated and analyzed by using a two step model. For the first hypothesis, we use a prediction model based on firm characteristics that predict expected chairman and board member compensation. This model is based on earlier research (e.g. Smith and Watts, 1992; Murphy, 1999; Ryan and Wiggins, 2004; Core et al., 2008). Based on this, we can determine the expected level of compensation and thereafter, we determine excessive compensation, which in line with Core et al. (1999) and Brick et al. (2006), is defined as the difference between the actual and the expected compensation level after controlling for firm characteristics. The second regression tests whether ownership characteristics significantly affect excessive board compensation, whereas the third and fourth regressions test the effect of excessive compensation on future firm performance and risk-taking, separately, using proxies. Noteworthy for all types of regressions is that there will be several factors, not included in the model, that will have explanatory power of the variability in the examined element.

In hypothesis 3, we choose to include CAPM as an alternative performance measure. CAPM can be calculated through the formula below;

$$E(r_i) = r_f + \beta_i[E(r_m) - r_f]$$

where $E(r_i)$ is the expected return on the stock, r_f is the risk free rate, β is the beta of the stock and $E(r_m)$ is the expected market return. In this case, r_f is the 10-year treasury bond for each year, retrieved from Riksbanken (Riksbanken, 2019). The annual beta was collected from Bloomberg and the expected market return is the annual return of the index OMX 30, containing the 30 most actively traded stocks on Nasdaq Stockholm (Avanza, 2019). Including beta in the performance measure makes it risk adjusted, which is the main difference from the market adjusted return. This will be further discussed in section 7.

The control variables used in the different hypothesis are motivated by literature. In hypothesis 1 and 2, the chosen control variables are based on commonly accepted research (e.g. Smith & Watts, 1992) and in hypothesis 3 and 4, control variables have been selected in line with Ting (2016).

These variables are described in the section below. We also include year dummies in all of the models.

6.4 Variables

As the main data used in this thesis, which is compensation data retrieved from Holdings Nordic, is annual, the other variables also consist of yearly data. Except for the compensation variables, all variables have been retrieved from Bloomberg if not stated otherwise. All monetary variables that are not percentages or ratios are expressed in SEK.

Dependent variables

Chairman compensation. The chairman compensation data used in this study includes the compensation level that was agreed upon at the beginning of the year at the annual general meeting of the firm, and is separated between the chairman and other directors. This number does not include the value of shares or options granted by the firm.

Member compensation. The average compensation levels of the non-chairman directors of the board. As said above, this is the compensation level that was agreed upon at the beginning of the year at the annual general meeting of the firm, and does not include the value of shares or options granted by the firm.

Excessive chairman compensation. The difference between actual chairman compensation and expected chairman compensation. This variable will also be used as an independent variable in hypothesis 3 and 4. In some regressions, we lag this variable one period, in this case one year, in order to capture the variation that is likely to have an impact in the following period.

Excessive member compensation. The difference between actual member compensation and expected member compensation. This variable will also be used as an independent variable in hypothesis 3 and 4. In some regressions, we lag this variable one period, in this case one year, in order to capture the variation that is likely to have an impact in the following period.

Firm performance. The marked adjusted return, calculated as the difference between total return and market return. In this case, we use the annual return for the OMX30 index as the market return. In a second regression, we also use CAPM as a performance measure. The calculation of CAPM is described in section 6.3.

Risk taking. Proxied by the stock price volatility of the firm.

Independent variables

Insider ownership. The rate of shares held by insiders, defined as any director or senior executive or an individual or entity holding more than 5% of the firm's stock. This variable will also be used as a control variable in hypothesis 3.

Institutional ownership. The rate of share held by institutional investors, defined as financial organizations, pension funds, insurance firms or other entities that manage funds in behalf of their clients. This variable will also be used as a control variable in hypothesis 3 and 4.

Control variables

Board size. The total number of members on the board. The variable is logged in order to normalize the distribution and to capture non-linear relationships.

Firm size. Proxied by total assets. In some regressions, we lag this variable one period, in this case one year, in order to capture the variation that is likely to have impact in the following period. The variable is also logged in order to normalize the distribution and to capture non-linear relationships.

Growth opportunities. Proxied by price to book, defined as the ratio of market capitalization to total book value. In some regressions, we lag this variable one period, in this case one year, in order to capture the variation that is likely to have an impact in the following period.

ROA. Return on assets as a ratio of net income to total assets. In some regressions, we lag this variable one period, in this case one year, in order to capture the variation that is likely to have an impact in the following period.

Debt to assets. The ratio of total debt to total assets. This variable is used in hypothesis 3 and 4, and is a commonly used determinant for both firm performance and risk taking (e.g. Ting, 2016).

Sales growth. Annual revenue growth for each year. This variable is used in hypothesis 3 and 4, and is a commonly used determinant for both firm performance and risk taking (e.g. Ting, 2016).

Firm age. Proxied by the total number of years since the firm's IPO. This variable is added in hypothesis 4, as firm age should be a determinant, with a negative sign, of firm volatility (Adams, Almeida, and Ferreira, 2005). This variable is logged in order to normalize its distribution.

CAPEX. Capital expenditures defined as annual change in property, plant and equipment plus current depreciation. This variable is added in hypothesis 4, as such expenditures are associated to firm risk and thus stock price volatility (e.g. Chan, Lakonishok, & Sougiannis, 2001).

R&D expenditures to sales. The ratio of R&D expenses to total revenue in year end. This variable is added in hypothesis 4, as such expenditures are associated to firm risk and thus stock price volatility (e.g. Chan, Lakonishok, & Sougiannis, 2001).

6.5 Limitations of model and data

This study builds upon a prediction model that uses benchmarking to actual compensation levels in line with Holmström and Kaplan (2003). In theory, current compensation levels could be skewed either positively or negatively and thus be far from efficient in terms of corporate governance mechanisms. Relying on these compensation levels could thus in itself affect the reliability of the results negatively. Also, except for the obvious and previously mentioned limitation of using panel data regression with a few selected variables, we are limited to the rather slim time span of our data. This means, for instance, that we are restricted to only two time periods (in this case years) when we choose to use certain lagged variables, which reduce the model's ability to produce generalizable results. Having a larger sample consisting of a larger number of subsequent years would allow us to draw more sophisticated conclusions regarding for example the effect of excessive return on firm performance and future performance.

6.6 Robustness tests

Before conducting any regressions, tests for fulfilling the model assumptions were made. As all of the regressions are based on panel data, fixed and random effects were compared by conducting Hausman tests. The data was also tested for heteroskedasticity in line with Breusch Pagan (1979) and Cook and Weisberg (1983), as well as panel level autocorrelation in line with Drukker (2003) and Wooldridge (2002). As a conditional treatment of these tests, the models further include combined clustered standard errors on firm and time level, which allows correlation over firms during the same period. Also, in order to reduce the effects of outliers the data was winsorized.

More precisely, the 1st and the 99th percentiles were replaced rather than trimmed in order to not lose observations, where there were obvious outliers. Moreover, using the natural logarithm of selected variables to normalize the values and reduce potential biases as well as capturing non linear relationships, and lagging selected variables one time period to capture the time effect of certain determinants could strengthen the model.

6.7 Endogeneity issues

It is possible that there is endogeneity in our data, especially if there are unobserved variables that determine both the dependent and independent variable, or if the direction of causality between our variables is unclear (Börsch-Supan and Köke, 2002). To some extent, we manage these potential endogeneity issues by using a multitude of accepted variables at board, firm, and industry levels, and by using panel data that take unobserved variables into account. We also use lagged variables which manages some endogeneity, for example between dependent compensation variables and explanatory variables in hypothesis 1. However, as all the following regressions are based on the prediction model used for hypothesis 1, endogeneity issues in this model (not managed by panel effects) will potentially affect the study as a whole. For further robustness regarding endogeneity issues, instruments could be applied to the model, especially the prediction model as well as the regression in hypothesis 2, which examines ownership structures. As we follow previous research (e.g. Core et al., 1999), we treat ownership structures as exogenous despite that economic theory as well as other sources of research (e.g. Pindado & De La Torre, 2004) suggest that such variables are endogenous due to simultaneity between ownership and compensation, and therefore, the best approach to control from endogeneity would be to use instrumental variables. This constitutes a limitation of this study, but it is also an excellent suggestion for future research aiming to contribute to current research. However, as stated, the usage of instruments fall outside of the frames of this study and therefore we do not account for endogeneity issues by any other means than employing panel data.

7. Empirical Results and Analysis

The seventh part of this thesis presents the obtained results from the conducted regressions, which constitutes the foundation of the findings. It is structured based on the four formulated hypotheses, but starts with some descriptive statistics.

7.1 Descriptive statistics

To conduct our research through our two step model starting with a prediction model followed by a number of regressions, the variables described in our methodological section are required. To get a first brief look at our data, a summary statistic has been formed, which can be found in Table 11 in Appendix. From a first look, potential outliers and skewed variables can be identified, which could give an indication of what variables that require winsorization. To further get to know our data, a correlation matrix has been made, see Table 12 in Appendix. Here, we can observe that there are no alarmingly high correlations between variables, as the largest correlation between two independent variables is 0,68 between $\ln(\text{Member Compensation})$ and $\ln(\text{Total Assets})$.

Table 1. Trend in total compensation and board size.

Total Compensation and Board Size							
Year	N	Chairman Comp _t		Member Comp _t		Board Size _t	
		Mean Value	% Change	Mean Value	% Change	Mean Value	% Change
2016	279	655463,38		261722,69		6,57	
2017	296	687158,45	4,84%	272616,11	4,16%	6,64	1,11%
2018	295	720420,65	4,84%	288561,34	5,85%	6,53	-1,79%
Period Avg.		687680,83	9,90%	274300,05	8,20%	6,58	-0,61%

From Table 1, it can be observed that the average chairman compensation during our sample period amount to SEK 687 680.83 whereas the average member compensation amounted to SEK 274 300.05. Further, the average chairman and member compensation have increased over our sample period. This is hardly surprising, considering the statistics from PWC (2016) included in the section Compensation of Swedish boards earlier in the thesis. Compared to the increase of 7,8% in average chairman compensation between 2014 and 2015 in the PWC report, average compensation levels increased with 9,9% during the three-year period in our sample. Member compensation increased with 8,2% between 2014 and 2015 which is to compare to our results of 10,3% over the three year sample period. The average board size have remained stable with only minor changes.

We can also conclude from Table 2 below that there are differences in the compensation levels of the various industries that are included in our sample. These are, on the other hand, rather different from the results in the report by PWC (2016). For instance, according to PWC (2016) one of the lowest compensation levels were found in the financial sector. In our sample, it constitutes one of the highest compensation levels for chairman, together with telecom and Media as well as Commodities, whereas the lowest are found in Energy and Environment and Health care. For members, the highest compensation is found in Telecom and Media and Commodities, and the lowest in Energy and Environment and Property.

Table 2. Compensation among sectors.

Sector	N	Mean Chairman Comp.	Mean Member Comp.
Energy & Environment	9	375000	166666.67
Property	90	426436.78	201770.11
Finance	81	1289316.7	383705.27
Consumer Goods	99	675600	291556.7
Health Care	138	482437.94	212969.4
Industrials	198	752278.76	304217.1
IT	78	590376.62	219571.43
Materials	27	971877.78	416156.48
Commodities	15	1045666.7	411000
Consumer Durables	45	717654.55	274784.09
Telecom & Media	9	1538333.3	540000
Services	108	517874.06	228298.58

7.2 Hypothesis 1

Table 3. Economic determinants of board compensation.

VARIABLES	ln(Chairman Comp.)	ln(Member Comp.)
ln(Total Assets) _{t-1}	0.0669** (2.011)	0.103*** (3.607)
ln(Board Size) _t	0.190*** (2.668)	0.147*** (2.923)
Price to Book _{t-1}	0.00687 (1.606)	0.00528 (0.773)
Market adj. Return _t	-0.00856 (-0.418)	0.00454 (0.270)
Market adj. Return _{t-1}	-0.0104 (-0.764)	0.0129 (0.986)
ROA _t	0.166*** (2.742)	0.0511 (0.741)
ROA _{t-1}	-0.135* (-1.728)	0.193** (2.167)
Constant	11.29*** (16.50)	9.769*** (15.31)
Time fixed effects	Included	Included
Observations	719	725
Number of Firms	267	269
R-squared	0.493	0.523

*** p<0.01, ** p<0.05, * p<0.1
Robust t-statistics in parentheses

After conducting the Hausman test, fixed effects were applied to the model. Table 3 demonstrates the results of the regressions that are the basis for the compensation prediction model for the chairman and members of the board, respectively. Only three of the seven chosen and from literature motivated explanatory variables are significant under the 95% confidence interval, which is the general significance level used in economic research, and the level we adopt in this thesis. These are $\ln(\text{Total Assets})_{t-1}$, $\ln(\text{Board size})$ and ROA , respective $\ln(\text{Total Assets})_{t-1}$, $\ln(\text{Board size})$ and ROA_{t-1} . However, the R-squared is fairly high for both of the models; 0,493 and 0,523, which suggests that a tolerable part of the outcome can be explained by the model. All significant variables have positive coefficients, which we expected (see Table 10 in Appendix).

The variables used in the model is as earlier mentioned based on previous research (e.g. Ting, 2016; Smith and Watts, 1992; Murphy, 1999; Ryan and Wiggins, 2004; Core et al., 2008), however, in models such as the one by Ting (2016), the most significant variables are the natural logarithm of board size, the lagged natural logarithm of total assets and the lagged ROA, just as in our model.

For analysis purposes, it should be said that prediction models used to examine excessive compensation, as by Ting (2016) as well as Dah and Frye (2017) are adopted on different markets (in these cases the Taiwanese and the U.S. market), which could explain the potential discrepancies in terms of variable significance, coefficient sign, and model reliability. Noteworthy is also that this research is based on U.S. studies (e.g. Murphy, 1999), and therefore, the model might be better fitted for Anglo American contexts.

However, the positive coefficient on board size is consistent with research on the Swedish market (Oxelheim & Clarkson, 2015; Collin et al., 2016). This could in line with literature suggest that chairmen of boards are compensated for their monitoring, and that larger board require more monitoring. The same consistency with research on the Swedish market goes for proxies for firm size. In this regression, the standard errors are clustered at firm and time level, which allows the data to contain correlation between the firms in the same time period. Compared to clustering only in firm level, this gives the significant variables slightly higher significance whereas the R-squared of 0,493 and 0,523 is unchanged.

As earlier mentioned, we predict the expected chairman and member compensation respectively, and define excessive compensation as actual compensation subtracted with expected compensation.

Table 4. Trend in excessive board compensation related to the benchmark.

Year	Chairman		Member	
	Mean Excess Comp.	Excess Comp. relative to benchmark	Mean Excess Comp.	Excess Comp. relative to benchmark
2016	169231.9 (8.712)***	22.47%	33626.86 (10.433)***	8.84%
2017	165540.8 (11.312)***	21.04%	32802.59 (8.999)***	8.53%
2018	158084.3 (11.319)***	19.49%	31138.31 (8.811)***	8.31%
Period Average	116859.0	21.00%	32522.59	8.56%

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The results in Table 4 above suggest that there is significant chairman and member excessive compensation among Swedish firms, which is consistent with research on for instance Taiwanese (Ting, 2016) and U.S. (Dah & Frye, 2017) markets. On average, chairmen are compensated 21% over the benchmark and members are compensated 8.56% over the benchmark, representing the expected level of compensation and thus the efficient compensation level in a corporate governance perspective. This indicates that we can reject H_0 of hypothesis 1. However, in order to draw conclusions on whether excessive compensation on the Swedish market is a potential sign

of poor corporate governance structures or perhaps an efficient incentivizing tool, the relation between excessive compensation and measures such as firm performance must be examined.

Interestingly, even though board compensation has increased over the years (see 7.1), the rate of excessive chairman and member compensation related to the benchmark of predicted compensation has decreased for each year. On average across all sectors, chairman excessive compensation has decreased from SEK 169 231.9 (22.47%) in 2016 to SEK 158 084.3 (19.49%) in 2018, and the excessive compensation for other members of the board has decreased from SEK 33 626.86 (8.84%) in 2016 to SEK 31 138.31 (8.31%) in 2018. This represents a decrease of around 6,5% respective 7% in 3 years. This could have various potential implications. For example, the decrease in excessive compensation despite the steadily increasing compensation levels could be a result of increased director workloads and increased scrutiny. From a theoretical perspective, firms that are aware of their governance mechanisms could view excessive compensation as inefficient and therefore aim to lower it, but it could also mean that directors are less opportunistic and that cronyism decreases, going from more of a managerial power approach towards an optimal contracting approach.

Table 5. Excessive compensation among sectors.

Sector	N	Mean Excess Chairman Comp.	Mean Excess Member Comp.
Energy & Environment	9	-85994.37	-29067.69
Property	90	-139492.4	-80132.85
Finance	81	618694	72486.8
Consumer Goods	99	114455.7	35078.66
Health Care	138	574.2676	6745.537
Industrials	198	236821.5	61952.56
IT	78	102413.2	10509.01
Materials	27	355359.3	137379.5
Commodities	15	482034.3	133187.4
Consumer Durables	45	247667.6	71553.21
Telecom & Media	9	877788.8	214931.2
Services	108	30257.94	9513.996

The highest mean excessive chairman compensation can be found in the telecom and media sector as well as in finance, whereas the lowest excessive compensation is negative, that is, undercompensation, can be found in property and energy and environment. For other board members, the highest mean excessive compensation is in telecom and media and materials, and the lowest, just like chairman excessive compensation, are found in property and energy and environment.

Table 6. Trend in positive excessive compensation.

Excess Compensation						
	Chairman	Member	Chairman	Member	Chairman	Member
Year	Pos. Excess Comp _t	Pos. Excess Comp _t	Pos. % Excess Comp _t mean	Pos % Excess Comp _t mean	% Excess Comp _t > 50%	% Excess Comp _t > 50%
2016	46,85%	48,66%	52,42%	33,69%	44,23%	29,36%
2017	46,91%	49,80%	49,80%	32,29%	42,11%	24,59%
2018	48,46%	52,73%	45,82%	26,64%	38,21%	18,52%
Period Avg.	47,41%	50,40%	49,35%	30,87%	41,52%	24,16%

The percentage of firms paying excessive compensation levels to their boards, seen in column 1 and 2 in Table 6 above, is not a majority of the firms on the Swedish market except for the firms paying excessive member compensation in the year of 2018. Before this, the number of firms are slightly under majority, which means that excessive compensation levels dominate the opposite in magnitude rather than in frequency. Further, it can be seen that positive chairman and member excessive compensation levels during our sample period on average amount to 49.35% respective 30.87%. Thus, as also mentioned above, the average levels of excessive compensation have decreased over the sample period, whereas, interestingly, the percentage of firms rewarding their directors with excessive compensation has slightly increased. For chairmen, it has increased from 46.85% in 2016 to 47.41% in 2018, representing an increase of 3.4% and for other board members, the increase from 48.66% in 2016 to 50.40% in 2018 represent an increase of 3.6%.

This could suggest that, in line with research (e.g. Holmström & Kaplan, 2003) firms use benchmarking to compensation levels of other firms in order to attract and retain valuable human capital. Also, as the magnitude of excessive compensation levels are decreasing, it is possible that firms do not view particularly high levels of excessive compensation as effective in terms of corporate governance, and therefore reduce these levels over time. Accordingly and in line with the decreasing rates of excessive compensation levels, the percentage of firms paying excessive compensation levels 50% over the expected and thus efficient level is reduced over the sample period. However, on average, this percentage still amounts to 41.52% respective 24.16% over the sample period.

7.3 Hypothesis 2

Table 7. The effect of ownership structures on excessive board compensation.

VARIABLES	Model 1		Model 2	
	Chariman Excess Comp.	Member Excess Comp.	Chairman Excess Comp.	Member Excess Comp.
Insider Ownership _t	1,048** (2.330)	394.0*** (2.632)		
Institutional Ownership _t			-21,042 (-0.759)	737.1 (0.0626)
ln(Total Assets) _{t-1}	-1,324 (-0.0917)	-1,784 (-0.351)	-372.0 (-0.0255)	-1,829 (-0.351)
Sales Growth _t	-12,903 (-1.605)	1,42 (0.502)	-12,698 (-1.581)	1,446 (0.508)
ROA _{t-1}	-23,029 (-0.348)	5,393 (0.296)	-21,923 (-0.330)	5,453 (0.300)
Constant	185,896 (0.590)	69,621 (0.627)	176,113 (0.557)	70,263 (0.626)
Time fixed effects	Included	Included	Included	Included
Observations	714	720	714	720
Number of FirmID	266	268	266	268
R-squared	0.021	0.186	0.022	0.176
Robust t-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

As can be seen in Table 6, there is a positive significant relationship between excessive chairman compensation as well as excessive member compensation and insider ownership. The R-squares are 0,021 for chairman excessive compensation respective 0,186 for member excessive compensation. This is inconsistent with some of the research on board compensation (e.g. Bryan et al., 2000; Fich and Shivdasani, 2005; Andreas et al., 2009), but is consistent with the approach of Ting (2016). It also makes sense in an agency theory and managerial power setting. A large proportion of insider ownership (especially if these insiders are board members) enhance the notion that board directors may influence or even set their own compensation. With the assumption of opportunistic behaviour, it is only logical that board compensation increases as a result of insider ownership. In regards to institutional ownership, however, no significant relations can be found. Therefore, we can reject H_0 in hypothesis 2 only in terms of insider ownership separately. This regression was made with a fixed effects model according to the Hausman test.

7.4 Hypothesis 3

Table 8. The effect of excessive board compensation on future firm performance.

VARIABLES	<u>Chairman</u>		<u>Member</u>	
	Market adj. Return	CAPM	Market adj. Return	CAPM
Excess Chairman Comp _{t-1}	-3.85e-07* (-1.863)	8.37e-08** (2.351)		
Excess Member Comp _{t-1}			-9.13e-07 (-1.498)	4.41e-07*** (4.328)
ln(Total Assets) _{t-1}	-0.0155 (-0.134)	-0.0301* (-1.853)	0.00367 (0.0322)	-0.0306* (-1.915)
ln(Board Size) _t	-0.107 (-0.712)	0.0183 (0.628)	-0.116 (-0.772)	0.0223 (0.760)
Sales Growth _t	0.333*** (4.158)	0.0107 (1.145)	0.321*** (3.988)	0.0125 (1.377)
ROA _{t-1}	0.117 (0.484)	0.0918*** (2.634)	-0.0441 (-0.217)	0.129*** (4.243)
Debt to Assets _t	-1.873*** (-4.150)	0.0502 (0.861)	-1.851*** (-4.100)	0.0551 (0.977)
Insider Ownership _t	0.00284 (0.329)	-0.161*** (-2.711)	0.000441 (0.0524)	-0.141** (-2.566)
Institutional Ownership _t	-0.243* (-1.687)	-0.0633*** (-2.736)	-0.237* (-1.681)	-0.0663*** (-2.851)
Constant	1.149 (0.447)	0.674* (1.901)	0.711 (0.282)	0.673* (1.929)
Time fixed effects	Included	Included	Included	Included
Observations	431	417	435	419
Number of Firms	243	231	245	232
R-squared	0.006	0.109	0.011	0.104

*** p<0.01, ** p<0.05, * p<0.1

Robust t-statistics in parentheses

When examining the effect of excessive chairman respective member compensation on future firm performance using market adjusted return, no significant relationship can be found. This could be a sign that excessive chairman and member compensation does not result in increased profitability, which in turn could suggest an environment of cronyism (e.g. Oxelheim & Clarkson, 2015). In regards to agency theory, this would mean that excessive compensation levels are not an efficient incentivizing tool, and that there might be superior alternatives to create incentives to monitor and supervise.

However, when using CAPM as an alternative performance measure, we can see a small significant positive relationship between excessive compensation and future performance for the chairman

of the board as well as the members of the board. The R-squared is 0,109 for chairman respective 0,104 for member. These are both higher than the R-squared for the regression on market adjusted return. This means that we cannot reject H_0 for hypothesis 3. The regression was made using fixed effects, according to the Hausman test.

The main difference between the two measures used, market adjusted return and CAPM, is that CAPM is risk adjusted due to the inclusion of beta in the model. In the market adjusted return, the beta is assumed to be equal to 1, whereas CAPM makes a more accurate beta estimation. Therefore, CAPM could be a better measure to capture the performance of the firm. This could partly explain the somewhat contradicting results in terms of coefficient signs comparing the market adjusted return with a negative coefficient, and the CAPM with a positive coefficient, that would be of significance under a 90% confidence interval.

Given that CAPM is a more relevant performance measure, these results could indicate that boards are rewarded for future performance, in line with research from Ting (2016). This means that excessive compensation may not be that bad, but rather an effective incentivizing mechanism. From the firm's perspective, this could be explained if chairmen as well as members are paid for their valuable human capital, and that shareholders also benefit from such compensation. It is interesting that these results contrast much of the research made on the U.S. market (e.g. Dah & Frye, 2017; Core et al., 1999; Brick et al., 2006). This might be in line with the differences between Anglo American board settings and those that are more Continental European, in terms of for example independent directors, that in more Continental European settings might act as a monitoring power that reduces cronyism and thus excessive compensation levels that do not result in increased performance. However, this discrepancy might also depend on the choice of performance measure, as we, under a 90% significance level, also find negative relation between excessive compensation and market adjusted return, in line with research from the U.S. market using stock returns as a performance measure (e.g. Core et al., 1999).

Nevertheless, the implications on performance when adding beta to the performance measure makes it interesting to look at excessive compensation and volatility as a proxy for risk taking.

7.5 Hypothesis 4

Table 9. The effect of excessive board compensation on firm risk taking.

VARIABLES	<u>Chairman</u>	<u>Member</u>
	Volatility	Volatility
Excess Chairman Comp _t	2.30e-08 (1.503)	
Excess Member Comp _t		9.43e-08 (1.319)
ln(Total Assets) _t	-0.0435*** (-5.583)	-0.0437*** (-5.777)
ln(Board Size) _t	0.00768 (0.198)	0.00599 (0.151)
ROA _t	-0.258* (-1.741)	-0.256* (-1.713)
ROA _{t-1}	-0.0725 (-0.616)	-0.0758 (-0.650)
Debt to Assets _t	0.0425 (0.431)	0.0419 (0.432)
Insider Ownership _t	0.00283 (1.347)	0.00291 (1.377)
ln(Firm Age) _t	0.0145 (1.545)	0.0155* (1.664)
Capital Expenditures _t	0.00 (-1.357)	0.00 (-1.603)
R&D to Sales _t	0.00235 (0.740)	0.00242 (0.755)
Constant	1.276*** (8.965)	1.279*** (8.970)
Time fixed effects	Included	Included
Observations	573	576
Number of FirmID	224	225
R-squared	0.358	0.359

*** p<0.01, ** p<0.05, * p<0.1
Robust z-statistics in parentheses

This regression was made using random effects after conducting the Hausman test. In line with Ting (2016), we find no significant relationship between excessive compensation and risk taking. This can, as has been proved by literature, be interpreted in various ways. Whereas Ting (2016) interpret this in combination with the significant effect of excessive compensation levels on future performance, and therefore states that excessive compensation might be used as an efficient governance tool to increase future performance. However, from an agency theory perspective, it can be argued that efficient governance mechanisms should increase firm risk taking, and that excessive compensation levels thus are a deficient governance tool.

8. Discussion and Conclusion

Assuming that the model works and that all assumptions are held, the results from our model suggest that there is excessive board compensation on the Swedish market. More specifically, the average excessive chairman and member compensation over the sample period amounted to 21% respective 8.56% in relation to the benchmark. This is in line with earlier research and therefore, our hypothesis. However, the average magnitude of excessive compensation levels has decreased with 6.5% from chairmen and 7% for other board member over the sample period, whereas the frequency of firms rewarding their chairmen and board members with excessive compensation levels has slightly increased with 3.4% respective 3.6% during the sample period.

Further, our results show that there is a positive relationship between insider ownership and board and member excessive pay, which enhance agency and managerial power approaches, as it could suggest that directors profit on their positions from which they to some extent can control their own compensation. However, more in line with optimal contracting, there are results suggesting that board are rewarded for future performance. This result implies that shareholders too benefit from the existing excessive board compensation, which differs a lot from the research conducted on the U.S. market. These results can be argued to be somewhat contradicting, as the results from hypothesis 2 could be interpreted to suggest that excessive compensation levels might be a result of agency problems, whereas the results from hypothesis 3 suggest the mere opposite. However, interpreting these results not only in line with Ting (2016), but also the Swedish governance code, stating that firms should compensate their directors for their competence, and in order to attract and retain valuable human capital, in a way that aligns their interests with the interests of shareholders, the results could be argued to make sense. In this regard, it is possible that insider owners might be in favor of excessive compensation levels as they have knowledge, perhaps through experience, on the effects on future firm performance, rather than practicing cronyism.

Nevertheless, because the U.S. market is so influential, the implications of research outside the market are important. For instance, the notion that excessive board compensation seems to positively influence future performance should be taken into consideration, not only for existing as well as potential investors, but also for regulators.

Moreover, it has been argued that high compensation levels is a key mechanism to attract and retain key personnel, whose valuable human capital can increase firm value in the best interest of

shareholders. However, when it comes to firm risk taking, implications for firm decision makers might be that excessive board compensation does not seem to be an efficient mechanism to increase risk taking. With consideration to the results in this thesis as well as the differences between the markets in terms of corporate governance structures, in an environment not characterized by cronyism, it is possible that excessive compensation levels would have a greater significant positive effect on firm risk taking on the U.S. market, where share- or option based compensation is more commonly used to create incentives to take on risky business opportunities. In the long run, the same could be applied to firm performance, in line with an optimal contracting view.

This study contributes to research by, as of our knowledge, for the first time, finding results that suggest that the practice of overcompensating chairmen and other board members exists among Swedish firms. It connects the subject to agency theory through ownership structures, and show a significant relation between insider ownership and excessive board compensation. It also contributes to already existing research by considering discrepancies between different functions of the board by separating the compensation of the chairman of the board and other directors. This is a reasonable thing to do, because as mentioned in the second section of this thesis, compensation levels of chairmen and other directors of the board are not the same, which also goes for the incentives of different functions within the board, as described in previous research, going hand in hand with theories central to the subject and the different roles of the board. This should therefore induce more sophisticated implications for firm decision makers and regulators. Therefore, the results of this study contribute to the debate on corporate governance and board compensation policies and practices in Sweden and other countries with similar corporate governance contexts, for example with so called “mixed” board structures.

However, there are some noteworthy limitations of this study. These have been elaborated upon in the methodological part as well as in the results section of this thesis, and include the sparse number of periods in our sample, the aspect of benchmarking to current compensation levels and the rather low amount of significant explanatory variables in the prediction model, as well as the potential endogeneity issues that might affect the model as a whole.

Therefore, in the future, researchers could contribute to the field by strengthening the model used, which would increase the robustness of the results and its findings. This could be done not only by revising the appropriateness of the determinants of board compensation used in literature to

suit different geographical markets, but also by including a greater number of periods in the model which would allow to draw more sophisticated conclusions on the effects on excessive board compensation on future firm performance. For this reason, it would also be reasonable to include more advanced performance measures, such as Jensen's alpha and the Fama French three factor model. Moreover, the model could be strengthened by including instruments to manage its potential endogeneity issues. A potential development is also to include variable share based payment in the study to better reflect total compensation of boards.

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Appendix

Figure 1. Economic determinants of board compensation.

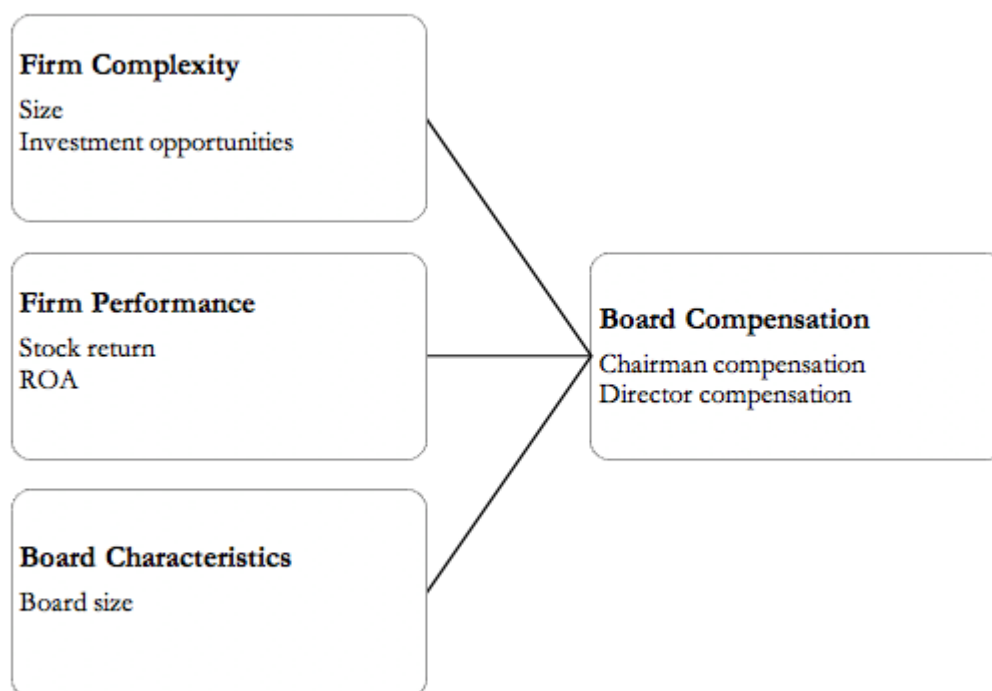


Table 10. Expected sign of economic determinants of board compensation.

Economic determinants of board compensation		
Variable	Proxy	Expected sign
Firm complexity		
Firm size	Natural logarithm of total assets t-1	+
Investment opportunity	Market to book ratio t-1	+
Firm performance		
Market based return	Market adjusted stock return (t-1)	+
Accounting return	ROA (t-1)	+
Board characteristics		
Board size	Number of members	+

Table 11. Descriptive statistic.

Descriptive Statistics						
Variables	Mean	Median	Standard deviation	Min	Max	Observations
<i>Chairman Comp. (in 1000 SEK)</i>	688273	500000	607535	50000	4075000	870
<i>Member Comp. (in 1000 SEK)</i>	274528	220000	164797	50000	1030000	876
<i>Excess Chairman Comp. (in 1000 SEK)</i>	164046	-15349	556965	-471607	3341019	719
<i>Excess Member Comp. (in 1000 SEK)</i>	32470	237142	128130	-226633	610631	725
<i>% Excess Chairman Comp. (in %)</i>	0.00	-3.30	60.83	-231.51	174.52	719
<i>% Excess Member Comp. (in %)</i>	0.00	2.24	40.53	-142.58	117.62	725
<i>Total Asset (in 1000 SEK)</i>	40683509	2692000	220300216	54800	2154203000	895
<i>Board Size</i>	6.58	6.00	1.56	3.00	14.00	871
<i>Market Adj. Return</i>	0.065	0.035	0.347	-0.735	1.309	822
<i>CAPM</i>	0.006	0.001	0.070	-0.220	0.185	812
<i>Volatility</i>	0.357	0.315	0.174	0.033	1.843	856
<i>Return on Assets (ROA)</i>	0.043	0.060	0.152	-0.734	0.442	890
<i>Price to Book ratio</i>	3.137	2.212	2.808	0.318	14.887	858
<i>Institutional Ownership</i>	0.524	0.530	0.258	0.00	1.488	871
<i>Insider Ownership</i>	0.132	0.023	0.889	0.00	25.924	871
<i>Sales Growth</i>	0.145	0.090	0.435	-0.973	2.946	886
<i>Capital Expenditures (in 1000 SEK)</i>	-577531	-33000	1529904	-10311000	0.00	867
<i>Debt to Assets</i>	0.219	0.196	0.183	0.00	0.966	888
<i>Firm Age</i>	14.76	15.00	12.91	0.00	145	870
<i>R&D to Sales</i>	0.488	0.00	3.483	0.00	32.125	727

Table 12. Correlation table.

(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1.00									
0.09	1.00								
0.28	0.09	1.00							
0.28	0.24	0.78	1.00						
0.18	0.21	-0.05	0.11	1.00					
-0.02	0.01	0.18	0.15	-0.10	1.00				
-0.11	-0.05	-0.02	-0.01	0.02	0.05	1.00			
0.03	-0.05	0.03	0.02	0.01	0.05	0.04	1.00		
-0.05	0.02	-0.02	-0.02	-0.04	0.07	-0.02	-0.02	1.00	
0.05	-0.02	-0.06	-0.06	0.05	-0.10	-0.20	0.03	-0.34	1.00

Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) <i>ln</i> (Chairman Comp.)	1.00										
(2) <i>ln</i> (Member Comp.)	0.92	1.00									
(3) <i>Excess Chairman Comp. (t-1)</i>	0.33	0.32	1.00								
(4) <i>Excess Member Comp. (t-1)</i>	0.25	0.29	0.88	1.00							
(5) <i>Excess Chairman Comp.</i>	0.88	0.81	0.45	0.32	1.00						
(6) <i>Excess Member Comp.</i>	0.84	0.88	0.35	0.34	0.87	1.00					
(7) <i>ln</i> (Board Size)	0.56	0.58	0.23	0.19	0.50	0.44	1.00				
(8) <i>ln</i> (Total Assets) (<i>t-1</i>)	0.65	0.68	0.28	0.19	0.59	0.43	0.57	1.00			
(9) <i>ln</i> (Total Assets)	0.65	0.68	0.28	0.19	0.58	0.43	0.58	0.99	1.00		
(10) <i>Price to Book ratio (t-1)</i>	-0.02	-0.04	-0.02	0.02	-0.05	0.02	0.03	-0.29	-0.26	1.00	
(11) <i>Price to Book ratio</i>	-0.05	-0.06	-0.05	-0.02	-0.06	-0.00	0.03	-0.31	-0.29	0.81	1.00
(12) <i>Market Adj. Return (t-1)</i>	-0.08	-0.08	-0.04	-0.09	-0.07	-0.08	0.02	-0.10	-0.07	0.37	0.31
(13) <i>Market Adj. Return</i>	-0.04	-0.05	0.03	0.02	-0.01	-0.05	0.03	-0.02	0.02	-0.06	0.26
(14) <i>Return on Assets (ROA) (t-1)</i>	0.09	0.14	0.04	0.03	0.02	0.00	0.14	0.18	0.19	0.17	0.12
(15) <i>Return on Assets (ROA)</i>	0.07	0.12	0.10	0.10	0.02	0.00	0.13	0.17	0.19	0.20	0.14
(16) <i>Sales Growth</i>	-0.12	-0.11	-0.06	-0.05	-0.12	-0.10	-0.07	-0.16	-0.12	0.13	0.11
(17) <i>Institutional Ownership</i>	0.38	0.44	0.10	0.05	0.27	0.31	0.27	0.34	0.33	0.04	0.06
(18) <i>Debt to Assets</i>	0.06	0.10	0.11	0.06	0.00	-0.05	0.05	0.34	0.34	-0.24	-0.29
(19) <i>Insider Ownership</i>	-0.06	-0.06	-0.03	-0.04	-0.06	-0.06	-0.06	-0.03	-0.03	-0.01	-0.02
(20) <i>RetD to Sales</i>	0.33	0.30	0.45	0.35	0.62	0.49	0.24	0.28	0.28	-0.04	-0.03
(21) <i>Capital Expenditures</i>	-0.32	-0.31	-0.12	-0.07	-0.38	-0.26	-0.26	-0.54	-0.55	0.12	0.13