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CEO COMPENSATION

- The Influence of Foreign and Institutional Investors

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Abstract
The purpose of this paper is to contribute to the research area on the connection between CEO compensation and institutional and foreign ownership using data on Swedish firms. We study the level of pay and performance-based compensation as well as probe further into determinants of CEO compensation in Sweden. We do not find support for an effect of institutional and foreign investors for the level of compensation or performance-based compensation. However, we find results supporting an effect of a subgroup of institutional owners on CEO compensation. Our results also show that firm size and growth opportunities are the most important factors in explaining CEO compensation in Swedish listed firms. Furthermore, we find interesting initial results suggesting that CEO ownership may also be an important factor in explaining CEO compensation.

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Table of Contents

1. Introduction

Over the past few years, issues regarding Chief Executive Officer (CEO) compensation have been given an increasing amount of attention (e.g. The Economist, 2007, Dagens Nyheter, 2007). In Sweden, criticism has been raised regarding the high level and shape of compensation contracts, although corporate views claim that CEO salaries in Sweden are modest, compared to international standards (Ivarsson, 2007, Svenska Dagbladet, 2007:a, Kornebäck and Larsson, 2007). Attention has been directed at large owners regarding their responsibility and ability to affect CEO compensation. A recent example is the rejection of Ericsson's employee incentive plan by foreign shareholders (Wahlin, 2007, Svenska Dagbladet, 2007:b). This may be an indication that foreign owners are becoming increasingly active in corporate governance in Sweden.

Research has been directed at studying the monitoring of firm CEOs by major shareholders in order to induce managers to act in the interest of the owners. According to extensive studies on agency theory, investors can choose either to monitor the CEO or construct compensation contracts in order to align the interest of the CEO with those of the shareholders (e.g. Bebchuk and Fried, 2005, Kole, 1997, Lambert, 1993). In addition, studies have been conducted on the connection between executive compensation and the effect of different ownership structures. In particular, the effect of institutional ownership on compensation has been observed[1] (e.g. Hartzell and Starks, 2003). The influence of foreign investors has not been researched to the same degree, but has been highlighted more frequently in the media following the increase of foreign ownership in domestic firms (Sundin and Sundqvist, 2007, Invest in Sweden Agency, 2004).

Corporate governance structures differ between countries and there may not be one ideal system suitable for all countries (Shleifer and Vishny, 1997). Despite this, most research focuses on the United States, due to more stringent disclosure regulation on executive compensation while only a few studies have been carried out using data from the Nordic region (e.g. Bechmann and Jørgensen, 2003).

[1] It should be noted that although we speak of the effect of institutional and foreign ownership on CEO compensation, there is theoretically no guarantee that there is a causal relationship in the stated direction between the two. It is possible that both monitoring and compensation are determined simultaneously and endogenously. However, previous studies find a causal relationship where ownership characteristics affect executive compensation, while the reverse relation has not been proven (Hartzell and Starks, 2003). Therefore, we assume this to be true in our study as well.

The purpose of this paper is to contribute to studies on the connection between CEO compensation and institutional and foreign ownership using data on Swedish firms. Evidence from the United States and Canada supports that institutional investors affect CEO compensation (e.g. Hartzell and Starks, 2003, Gillian et al., 2000). We wish to investigate if this is valid for Sweden due to the large concentration of institutional owners. 7 of the 10 largest owners on the Swedish stock market are institutions (Sundin and Sundqvist, 2007). Based on the results from pervious studies, we expect the effect on the level of compensation to be negative, while we expect a positive effect on performance-based compensation (e.g. Hartzell and Starks, 2003).

The influence of foreign ownership is interesting to investigate primarily due to the lack of knowledge of how foreign investors affect CEO compensation. Further, the effect of foreign ownership is relevant and interesting due to the significant increase in foreign ownership in the Swedish stock market, from 8 to 37 percent of total market capitalization, over the past 15 years (Sundin and Sundqvist, 2007). We believe foreign ownership will have a positive impact on both the level of compensation and performance-based pay. This is based on that foreign owners represent a culture of higher pay and that they may prefer a larger portion of performance based pay due to the difficulty of monitoring from a distance.

Our paper contributes to the research area on the determinants of CEO compensation by shedding light on the effect of institutional investors on CEO compensation on the Swedish market as well as conduct an initial study of the potential effect of foreign investors.

This paper will begin by outlining the theoretical foundation and results of previous studies in section 2. This will be followed by a background on the components of CEO compensation and the methodology used in our study in section 3. Section 4 describes the model and hypothesis. The data used in our study is described in section 5. The results are presented in section 6 and subsequently analysed in section 7. Finally, we conclude our study in section 8 and discuss areas for future research in section 9.

2. Theoretical Framework and Previous Research

Two main strands can be identified regarding theories on CEO compensation. The traditional approach employs agency theory and finds the balance and compromise between the CEO's personal interests on the one hand and the shareholders' interest as represented by the board of directors on the other (e.g. Jensen and Meckling, 1976). A different approach questions the ability of agency theory to explain CEO compensation contracting (Bebchuk and Fried, 2005). This instead assumes that the board of directors does not necessarily act in the interest of the shareholders due to the lack of accountability and that the board may also be subject to agency problems.

Previous research on the characteristics and effects of owners on CEO compensation focuses mainly on institutional investors. There are therefore theories on how institutional ownership affects the level of compensation and performance-based compensation. This research mainly uses data from the United States and the United Kingdom. Studies of the monitoring effects of foreign investors have been performed on emerging markets. Khanna and Palepu (1999) find that foreign investors serve an important monitoring function. However, we have not found previous studies on the effect of foreign investors on CEO compensation.

2.1 Theories on CEO Compensation Contracting

2.1.1 Agency Theory

Most research on compensation and ownership is described using agency theory. Agency theory expresses the relationship between the principal and an agent, who is appointed to act on the principals behalf through the delegation of responsibilities and decision making power (Jensen and Meckling, 1976). This theory is frequent in describing the relationship between the shareholders of a firm and the manager. The firm wishes to monitor the actions of the CEO as it is assumed that the CEO can gain personal benefits by making decisions that are not in the best interest of the firm.

Monitoring costs arise from the time and effort required to observe and control the actions of the CEO e.g. by nominating board members. As an alternative method to reach the same results, the firm can attempt to construct incentives through compensation for the CEO to act in accordance with the firm's best interests. Although these methods can be employed, it is

nearly impossible to fully align the interests of the CEO with the interests of the shareholders (Fama, 1980).

There will always be uncertainty in the CEO's ability to affect performance and to what extent positive and negative effects are results of the actions of the CEO. To construct an optimal compensation contract, the owner commonly relates a portion of the CEO's compensation to the performance of the firm. As a result, the CEO, assumed to be risk-averse, will demand a higher level of expected compensation, above that which would otherwise be optimal with a fixed salary. Hence, the amount of compensation the owners have to pay above this optimal level constitute the cost of the contract.

Compensation and incentive structures are designed as an attempt to mitigate the agency problem but will always be theoretically suboptimal as long as the CEO receives a salary regardless of the performance of the firm (e.g. Jensen and Murphy, 1998, Stigler and Friedland, 1983).

2.1.2 New Approach to Agency Theory

Another view is presented by Bebchuk and Fried (2005) and takes into account the limitations of agency theory. They present the idea that the board of directors can not by default be assumed to maximize shareholder value and may also be affected by agency problems. The relationship between the board of directors and the CEO is not solely one of monitoring, but also consists of relationships and social factors such as friendships and loyalty that may affect monitoring incentives. Further, this implies that the CEO has a larger influence on determining the compensation contract, which is not taken into consideration in conventional agency theory. The authors argue that this view helps explain how CEO compensation is structured.

2.2 Level of Compensation

Conyon and Murphy (2003) look at differences in CEO pay between the United States and the United Kingdom and compare separate components of executive compensation. They find that CEOs in the United States have significantly higher pay than those in the United Kingdom. The differences are largely explained by the larger portion of pay in option grants in the United States, which in turn may be explained by institutional and cultural differences. Conyon and Murphy predict that as labour markets for executives become increasingly free of

national boundaries, skilled managers may move to countries with higher pay. Therefore, understanding the effects of globalization, differences in culture, and labour market development are becoming increasingly important.

Hartzell and Starks (2003) study the relationship between institutional investors and executive compensation. In their study, they find a negative relationship between institutional ownership and the level of compensation. This relationship is explained by the monitoring role of institutional owners, which implies that firms with a larger share of institutional ownership are expected to have a level of compensation that does not exceed that which is expected given the size, performance, growth opportunities and industry of the firm (Gillian and Starks, 2003). The results from the study by Hartzell and Starks suggest that institutional owners act as monitors and thus mitigate the agency problem between shareholders and managers. Further, they find results that indicate that institution's individual preferences also influence compensation structure. Almazan et al. (2004) perform a similar study in which they divide institutional investors into subgroups depending on their willingness to monitor. They find that the higher the concentration of active investors, the lower the level of pay.

Regarding factors that affect the level of CEO compensation, a large number of empirical studies show a positive relationship between firm size and performance to the level of executive compensation (e.g. Zhou, 2000, Tian and Twite, 2006, Patton, 1951, Roberts, 1956, Chhaochharia and Grinstein, 2006). In addition, the importance of industry in explaining CEO compensation is also well-documented.

2.3 Performance-based compensation

According to Conyon and Murphy (2003, similar to Jensen and Murphy, 1990), CEO wealth is directly related to the stock performance of the firm in the form of stock options, stocks held and long term incentive plans. The most evident link between the wealth of the CEO and the shareholders is the CEO's stock ownership in the firm. Stock-based performance-based compensation is relevant due to the connection to the agency problem and is measured through the CEO's ownership in the firm directly through stocks and indirectly through e.g. option grants. Performance-based compensation measured in this way provides a possibility for determining the scope of the agency problem in the firm. In their comparative study, Conyon and Murphy find that CEOs in the United States have a higher stock ownership share

compared to CEOs in the United Kingdom. According to their study, share ownership thus appears to be more effective in alleviating the agency problem in the United States compared to the United Kingdom.

According to Gillian et al. (2000) and Hartzell and Starks (2003), one would expect institutional investor influence to be more prominent in performance-based compensation compared to other components of compensation. The study by Hartzell and Starks finds a positive relationship between institutional ownership and the performance-based compensation of executive compensation after controlling for firm size, growth opportunities, performance and industry. This may be explained by institutions attempting to align the interests of the firm with those of the CEO, thus mitigating the agency problem that arises between shareholders and managers. This is supported by other studies (Sullivan, 1995, Almazan et al., 2004), which find that institutional investors are increasingly involved in corporate governance.

An additional dimension of performance-based compensation is that the higher the share of performance-based pay as a fraction of total compensation, the higher the risk for the CEO. A higher share of performance-based compensation may thus result in the CEO demanding a higher level of expected compensation to compensate for this additional risk. This has been discussed in several studies (e.g. Hartzell and Starks, 2003).

3. Method

3.1 Background

CEO compensation normally consists of a number of components. Most companies have a fixed base salary, a flexible component, stock-based compensation, pension and company-specific perks. The board and the CEO negotiate the terms of the agreement, which may entail a contract that stretches over a number of years.

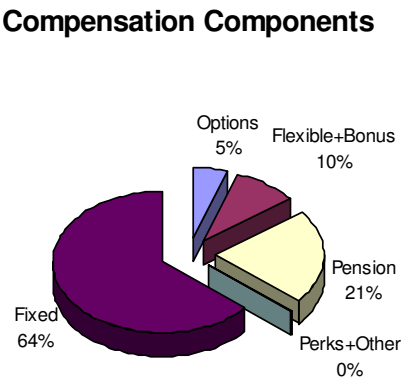

Table 1. Average Compensation components for 2001 from the collected data.

The fixed salary is predetermined. Factors that may affect the level of the fixed salary include the size of the company, performance and industry. Most firms also use some form of flexible salary where the level depends on how well the company is performing. The aim of performance-based compensation such as flexible salary and option programs is to equate the value and effects of the company for the shareholders with the personal payoffs for the executives and thus mitigate agency problems (Holmström, 1979, Shavell, 1979, Jensen and Meckling, 1976). Flexible salary is often equated with short-term performance, whereas options and suchlike are linked to long term performance. Many companies' compensation packages also contain specific perks such as a company car, healthcare and insurances. Pension is another important component of compensation that can greatly affect the total level of pay. Usually a percentage of the fixed salary is put aside for future payout. However, the exact payout may in certain cases depend on the interest earned over the years.

3.2 Methodology

This paper aims at studying the effect of institutional and foreign ownership on CEO compensation on the Swedish market through an empirical and quantitative study. We begin by investigating this using two main approaches, the level of compensation and performance-based compensation. In addition, other findings that may improve the understanding of the determinants of CEO compensation in Sweden will be presented.

3.2.1 Level of Compensation

We look at the level of compensation for two separate years[2]. In addition, we investigate the change in the level of compensation between the two years. The level of compensation is of interest as concentrated owners can monitor the CEO and therefore influence the level of CEO compensation. Increased monitoring limits CEO compensation from rising above what is normally expected given the size, performance, growth opportunities and industry of the firm (Hartzell and Starks, 2003).

To study the level of compensation we choose to construct our dependent variable according to the method used in Kole (1997) and Conyon and Murphy (2000), cash compensation and total compensation. Cash compensation consists of fixed salary plus bonus[3]. Influence from foreign or institutional owners is likely to occur though the board and therefore cash compensation may be used to directly capture the effect on compensation (Core and Guay, 1999). Total compensation consists of fixed salary, bonus, pension, options and other compensation. This categorization is relevant as it is of interest to look both at the amount of direct compensation available to the CEO in a given year and to study compensation including pension and incentive plans such as stock options, where the payout may not coincide with the current year.

In addition, we test if our results hold when using the level of pension or bonus separately. The level of pension is of interest due to the increased focus on pension plans, following pension plans of unprecedented size. This added pressure on large owners to be more restrictive in awarding large pensions (BBC News, 2002). The level of bonus is of interest due to the substantial increase in bonus as a share of total compensation (Dagens Nyheter, 2007).

[2] 2001 and 2005
[3] Bonus includes flexible compensation.

3.2.2 Performance-Based Compensation

It is interesting to look at performance based compensation since it is becoming an increasingly important component of CEO compensation. The relevance of investigating performance-based compensation stems from its relationship with agency problems and is thus a mechanism by which to study agency issues. This enables us to study the effect that institutional and foreign owners have on influencing the actions of the CEO.

We begin by using stock-based performance-based compensation, applying the same principle as Conyon and Murphy (2000) and similar to Jensen and Murphy (1990). Stock-based performance-based compensation refers to the number of shares[4] owned by the CEO and is interesting since it gives us a measure of the severity of the agency problem (Conyon and Murphy, 2000). We focus on the CEO's stock ownership in the firm, as the most obvious connection between CEO wealth and shareholder wealth goes through the CEO's holding of stocks (Conyon and Murphy, 2000).

Another measure for performance-based compensation we choose to test is the proportion of variable compensation[5] as a share of total compensation. This measure is employed as it captures all performance-based pay.

[4] Previous studies use both the number of current shares held and the number of potential shares through e.g. stock option grants (e.g Conyon and Murphy, 2000).
[5] Variable compensation consists of bonus including or excluding options.

4. Model and Hypothesis

We present two main models; the level of compensation and performance-based compensation[6]. The models below express the general form of the models used in our study and may vary slightly depending on the purpose of the particular regression[7]. In model 1, the level of CEO compensation is the dependent variable, while model 2 uses performance-based compensation as the dependent variable. As described previously, the models are based on similar studies, (e.g. Hartzell and Starks, 2003, Conyon and Murphy, 2000).

4.1 Models

Model 1: Level of Compensation

$$\begin{aligned} CEO\ compensation_{it} = {} & \beta_1\, foreign\ ownership_{it} \\ & + \beta_2 institutional\ ownership_{it} \\ & + \beta_3 size_{it-1} \\ & + \beta_4\, performance_{it-1} \\ & + \beta_5\, growth\ opportunities_{it-1} \\ & + \beta_6 largest\ shareholder_{it} \\ & + \sum \beta_k \cdot industry\ dummy\ variables_t \end{aligned}$$

Model 2: Performance-Based Compensation

$$\begin{aligned} Performance\text{ - }Based\ Compensation_{it} = {} & \beta_1\, foreign\ ownership_{it} \\ & + \beta_2 institutional\ ownership_{it} \\ & + \beta_3 size_{it-1} \\ & + \beta_4\, performance_{it-1} \\ & + \beta_5\, growth\ opportunities_{it-1} \\ & + \beta_6 largest\ shareholder_{it} \\ & + \sum \beta_k \cdot industry\ dummy\ variables_t \end{aligned}$$

[6] It should be noted that all measures of compensation, firm size, growth opportunities and performance when measured as total assets have been transformed using the natural logarithm. This follows the methodology in similar studies (e.g. Zhou, 2000 and Conyon and Murphy, 2000). All regressions are performed using the standard OLS (ordinary least squares) regression. It should be noted that tests for multicolinearity between the variables have been performed but the results do not show any issue of importance.

[7] These models can be found in the appendix.

4.2 Explanatory Variables

The explanatory variables that we will use in our study are as follows. We use the presence of an institutional or foreign owner among the ten largest owners[8] to test our hypothesis, given below. In addition, we control for firm size, performance, growth opportunities, whether the largest owner is foreign or institutional and industry.

4.2.1 Presence of an Institutional of Foreign Owner

We capture the possible influence of institutional and foreign owner's effect on CEO compensation using ownership variables. The presence of an institutional owner among the ten largest owners is identified using a categorical variable. The same is performed to identify the presence of a foreign owner among the ten largest owners.[9] Voting rights are used to define ownership.

4.2.2 Firm Size

Firm size is included as an explanatory variable since previous empirical studies on executive compensation have documented that size of the company is one of the most important factors in determining the level of CEO compensation (e.g. Conyon and Murphy, 2000, Zhou, 2000). As a measure of firm size, we choose to use market capitalization from the beginning of the previous year. This is selected on the basis of common practice within previous studies on executive compensation. Firm size is expected have a positive impact on CEO compensation (e.g. Hartzell and Starks, 2003).

4.2.3 Performance

Firm performance is included as an explanatory variable as it can be assumed that companies that performed well in the previous period may have higher compensation levels the following year. This is a common approach and is employed in similar studies (e.g. Conyon and Murphy, 2000, Hartzell and Starks, 2003). As a measure of firm performance, we use change in shareholder value over the previous year as captured by the change in market capitalization between January 1 and December 31.

[8] We look at the ten largest owners for two reasons. Firstly to eliminate owners with small shares and secondly to simplify data analysis.

[9] We have also performed the tests using the percentage of institutional and foreign ownership, respectively (among the ten largest owners) expressed as a share of the total number of stocks in the firm. This did not produce different results, and therefore we choose to proceed using the presence of an institutional or foreign owner expressed a as dummy variable.

4.2.4 Growth Opportunities

Growth opportunities are also included as an explanatory variable. We include this in our model due to the fact that firms with growth options can be claimed to need more qualified, and thus higher paid, managers, since they face a wider range of investment choices (Conyon and Murphy, 2000). This measure routinely uses the market-to-book ratio as a proxy and we choose to follow this practice, using data from the beginning of the previous year. [10]

4.2.5 Identity of the Largest Owner

To further capture the effects of ownership characteristics on CEO compensation, we control for the identity of the largest owner. A categorical variable is used to identify if the largest shareholder in the firm is institutional or foreign, respectively. This is done to control for the effects of the largest owner. Voting rights are used to define ownership.

4.2.6 Industry

Previous empirical studies on executive compensation deem industry as important in determining the level of CEO compensation (e.g. Gillian et al., 2003, Kole, 1997, Conyon and Murphy, 2000, Zhou, 2000). This categorization is important as it may capture differences in practice between industries. We use a categorical variable to identify industry specific differences.

4.2.7 Additional and Alternative Variables

Additional and alternative variables will be used in the following cases to further map the determinants of CEO compensation on the Swedish market. We will either change the explanatory variable or the dependent variable, as outlined below. The modified models can be found in Appendix E.

4.2.7.1 Board Compensation

Firstly, data on board compensation will be used in order to determine if there is a similar relationship between firms with high board compensation levels and institutional and foreign ownership. Board compensation is used as the dependent variable while the explanatory variables remain as stated in model 1.

[10] It should be noted that market-to-book may also reflect other aspects than growth opportunities. However, this proxy is commonly used and therefore we employ market-to-book in our study.

4.2.7.2 AP Funds

Secondly, for institutional ownership, we choose to look at AP funds, the Swedish National Pension Funds, specifically, following a previous study by Giannetti and Laeven (2007), and similar studies by e.g. Almazan et al. (2004). This is done on the basis of AP funds being viewed as more active managers since they are state owned pension funds. In these regressions, we modify model 1 by removing the foreign and institutional ownership variables and adding an AP fund variable.

4.2.7.3 Ownership and Performance

Thirdly, we add an interaction term to model 1 to capture the interaction between institutional and foreign ownership and firm performance on CEO compensation. This is due to the possible effect from institutional or foreign ownership and firm performance together and the effect of this interaction on CEO compensation.

4.2.7.4 CEO Ownership

Finally, we experiment by adding another explanatory variable to model 1, CEO ownership. In previous studies, many papers have chosen to exclude this variable in their models (e.g. Conyon and Murphy, 2000, Hartzell and Starks, 2003). We aim to investigate if this variable could contribute to explaining CEO compensation for future research.

4.2.8 Robustness Verification

To confirm the results of our study, we will control for errors by using certain alternative data. We change proxies for firm characteristics that are included as explanatory variables. Regarding firm size we will use total assets and instead of return we will use net income as a way of verifying our results. As an alternative measure of ownership we use dividend rights instead of voting rights.

4.3 Hypothesis

We expect to find a relationship between institutional ownership and CEO compensation. Research supports that such a relationship exists (Hartzell and Starks, 2003). We expect the sign to be negative for the level of CEO compensation due to the effects of monitoring. We can assume that institutions are more active in monitoring the actions of the CEO, partly because they are active managers and therefore the CEO would not receive a higher salary than what is otherwise justified by firm size, growth opportunities and firm performance. However, we expect a positive sign for performance-based compensation, due to the fact that

institutions in general prefer compensation related to the performance of the firm (Hartzell and Starks, 2003).

Concerning the effect of foreign ownership on CEO compensation, we do not have a clear expectation. There are no previous studies on this relationship to relate our results to. We can however discuss some of the possible effects of foreign ownership. Foreign ownership may result in a higher performance-based compensation, as foreign investors can be assumed to face more difficulty in monitoring the CEO and will therefore prefer to include a larger portion of performance based pay in the CEO's compensation. Another aspect is that the CEO may be able to affect compensation to a larger extent if the owners are not active monitors, resulting in a higher level of compensation (Bebchuk and Fried, 2004). Foreign owners may, in addition, be more inclined to award the CEO more generous compensation due to a culture of higher levels of CEO compensation in other countries. Based on these factors, we have a tentative expectation that foreign investors will have a positive effect of both the level of compensation and performance-based compensation.

The coefficients we are most interested in are β_1 and β_2, which capture the influence of institutional and foreign owners. Our null hypothesis expresses that the level of institutional and foreign ownership, respectively, have no effect on compensation. Our alternative hypothesis is that β_1 and β_2 are different from zero and hence that institutions or foreign investors influence the level of compensation or performance-based compensation. Our hypothesis is stated below.

H_0: There is no effect of institutional and foreign ownership, respectively, on CEO compensation
H_1: Institutional and foreign owners, respectively, affect CEO compensation

Our hypothesis is used throughout our study to test for effects of institutional and foreign ownership and remains the same when testing for both the level of compensation and performance-based compensation.

5. Data and Summary Statistics

We have chosen to look at all Swedish companies listed on the Swedish stock exchange for the years 2001 and 2005[11]. These years were chosen in order to obtain two years for comparison that were some years apart, in order to be able to assert any changes in both ownership structure and compensation patterns. We chose to use 2001 as our earlier reference year since data on compensation from annual reports is scarce in years prior to 2001[12].

5.1 Compensation Data

Data on compensation was collected through annual reports for 2001 and 2005 available through the company websites for the examined companies according to the given selection[13].

The data on CEO compensation was collected and categorized according to fixed salary, flexible salary, bonus, perks, other compensation and pension[14]. We use the companies' own definitions when sorting the data according to these categories. As flexible salary and bonus are used interchangeably by several firms, we chose to combine these categories and define both as bonus. The same approach applies to perks and other compensation. We also gathered data on the total number of stocks, options held by the company's CEO and collected and valued new option grants for 2001 and 2005 (see Appendix A for option valuation techniques).

As can be seen in table 2, both cash and total compensation have increased between the years.

	Compensation Characteristics				
Variable	Mean	Median	Std. Dev.	10%	90%
2001					
Cash Compensation	2 855 744	1 894 500	2 675 118	814 000	5 615 203
Total Compensation	3 370 556	2 137 001	3 426 186	817 600	7 900 962
2005					
Cash Compensation	3 817 896	2 511 000	3 693 942	960 000	8 588 000
Total Compensation	5 155 315	3 284 000	5 321 152	1 194 800	11 796 600

Table 2. Compensation characteristics for 2001 and 2005, both cash compensation and total compensation.

[11] 254 firms were investigated.
[12] It should be noted that the number of firms differ depending on the availability of data. Therefore, the total number of firms may not always sum to the same number.
[13] In the rare cases where the company used a split accounting year, we have used the annual reports for the years ending in 2001 and 2005.
[14] Companies where specific compensation data for the CEO are not available have been excluded from the data. For a few companies, pension compensation included a single large pension payment for the year. In these cases, the pension amount has been removed in order to avoid skewed results.

A categorization of compensation and its components in total and divided by industry for 2001 and 2005 can be seen in table 3. From the information we can see that fixed compensation is by far the largest component of total pay, although it decreases from 2001 to 2005. Pension is the second largest component and shows an increase in 2005. Thereafter, bonus is the largest component, increasing by almost 10 percent. Option value has decreased, while perks have increased nearly fivefold[15]. The level of total compensation has increased between the years, but is lower compared to the United States and United Kingdom (Conyon and Murphy, 2000). For 2005 we find that the IT and healthcare industries have the largest proportion of options, which is in line with a previous Nordic study (Bechmann and Jørgensen, 2003). The proportion of options is considerably smaller compared to the United States, Canada and the United Kingdom (Zhou, 2000, Conyon and Murphy, 2000). For example, over 40 percent of total pay in the United States is comprised of options, while options comprise approximately 5 percent of total pay in Sweden.

COMPENSATION 2001

		Total Pay		Average composition of total pay %				
	No. of observations	Mean	Median	Fixed	Bonus	Options	Pension	Perks
All Firms	203	3 370 556	2 137 001	63.6	9.7	5.1	21.2	0.4
By Industry								
Finance	36	3 933 198	2 592 000	62.5	9.8	8.3	19.1	0.3
Healthcare	21	2 667 388	1 437 000	63.5	5.8	1.1	29.3	0.2
Industrial	55	3 708 888	2 429 000	58.4	12.5	1.9	26.9	0.3
IT	34	2 107 688	1 725 659	64.2	8.0	7.8	19.7	0.2
Consumer Goods	22	3 002 128	1 800 418	72.1	4.6	1.8	19.7	1.8
Media and Entertainment	5	5 510 701	1 734 000	57.1	2.6	35.7	4.6	0.0
Raw Materials	8	4 275 804	3 320 000	65.8	11.1	7.8	15.3	0.0
Telecommunication	11	4 687 387	2 053 000	74.6	4.0	0.0	21.4	0.0
Services	10	3 429 962	2 203 025	59.7	25.3	0.1	14.9	0.0

COMPENSATION 2005

		Total Pay		Average composition of total pay %				
	No. of observations	Mean	Median	Fixed	Bonus	Options	Pension	Perks
All Firms	243	5 155 315	3 284 000	51.9	19.2	4.2	22.8	1.9
By Industry								
Finance	41	5 884 806	3 627 000	49.7	22.1	5.4	21.4	1.4
Healthcare	27	4 458 975	2 432 823	48.9	20.5	11.1	17.2	2.4
Industrial	59	6 118 959	3 725 000	48.3	17.9	3.5	28.3	2.0
IT	40	3 605 654	3 215 000	50.3	24.3	9.6	13.4	2.3
Consumer Goods	26	6 242 500	3 805 700	52.2	14.0	6.8	26.1	0.9
Media and Entertainment	6	6 514 174	3 826 500	54.7	29.8	5.2	8.8	1.6
Raw Materials	13	4 338 399	3 100 000	55.0	10.3	0.0	32.1	2.6
Telecommunication	15	5 944 079	3 003 150	56.5	20.4	2.0	18.4	2.8
Services	16	3 951 475	2 899 000	64.5	20.0	0.0	14.0	1.4

Table 3. Compensation data for all firms and by industry for 2001 and 2005
Note: The data on options should be interpreted with caution due to the limited number of observations.

[15] The inclusion of options plans provides a limited amount of data compared to previous studies on data from the United Stated or United Kingdom (e.g. Conyon and Murphy, 2000, Kole, 1997 and Hartzell and Starks, 2003). The limitations of looking at only two years means that the value of options included in the compensation data are limited to option grants in the current year. In many firms, options may not be granted annually, but every few years. Consequently, our data lacks the scope of options from previous years.

5.2 Ownership Data

Data on ownership structure was obtained through SIS Ägarservice 2005. This ownership data shows the ten largest owners for each of the listed companies and their voting and dividend share in the company. The data gives this information at the same point in time for all companies for both 2001 and 2005. We examined the data and categorized the different owners according to institutional ownership[16], foreign ownership[17] and other investors.

Table 4 below shows the percentage of firms with at least one institutional or foreign owner among the ten largest owners. In addition, the percentage of firms where the largest owner is institutional or foreign, respectively, is also given. From the data, we can see that the number of firms with at least one foreign owner among the ten largest owners has increased from 2001 to 2005 by 13 percent. Institutional ownership has fallen slightly over the same period. The number of firms where the largest owner is institutional or foreign has changed by a few percentage units between the years.

Ownership Data

	2001	2005
Firms with Foreign Ownership	43%	56%
Firms with Institutional Ownership	94%	91%
Largest Owner Foreign (Vote)	5%	7%
Largest Owner Foreign (Div)	5%	7%
Largest Owner Institutional (Vote)	13%	11%
Largest Owner Institutional (Div)	11%	9%

Table 4. Ownership characteristics. This table reports the percentage of firms with an institutional or foreign owner, among the ten largest owners, as well as data on the characteristics of the largest owner as of December 2001 and 2005. This data is divided into subsets depending on voting or dividend rights.

5.3 Firm Size

Market capitalization is used as a proxy for firm size[18]. This measure was calculated using collected data on stock price and the total number of shares. We follow the methodology of

[16] Institutional owners are defined as investors from a financial institution including banks, mutual funds, insurance funds, pension funds or other investment funds. Institutional investors were classified according to the name of the firm, often including the terms mentioned above.

[17] Not including dispersed foreign ownership, often refered to as "Other foreign investors" in annual reports and suchlike. This was done to separate owners with possibility of influence from dispersed foreign ownership, which may be assumed to have a lesser direct influence on compensation policies. This was done on the basis of sorting firms containing AB (Aktiebolag - classifying the firm as Swedish) from those with other firm classifications (e.g. AG or ASA, classifying the firm as foreign). Foreign owners are thus defined as all private or institutional owners not domiciled in Sweden. Private owners were identified as foreign or domestic using web search tools.

[18] In order to control for difference is choice of measure, we also use an alternative proxy for firm size. We therefore use the book value of assets, in line with Kole (1997) and Conyon and Murphy (2000). This data was collected through Datastream.

Hartzell and Starks (2003) and Conyon and Murphy (2000). Data from January 1 of the previous year, i.e. January 1, 2000 and 2004 was collected from the SIX Trust database. This was done in order to measure the effects of the previous year (*t-1*) on the compensation of the current year. We find that average firm size has decreased between the years, which may suggest that a number of new, smaller firms have been listed over the years. A comprehensive table with firm size data by year and industry can be found in Appendix B.

5.4 Performance

Data on the change in shareholder wealth for the firms was created through calculating the change in market capitalization from January 1 to December 31 for 2000 and 2004 respectively, using the data originally collected from the SIX Trust database[19]. In line with Hartzell and Starks (2003), we choose to measure the effects of the previous year (*t-1*) on the compensation of the current year. Performance has increased between the years for the firms in our study. A comprehensive table with performance data by year and industry can be found in Appendix B.

5.5 Growth Opportunities

The market-to-book value is used as a proxy for investment or growth opportunities. Kole (1997) uses the same measure and Conyon and Murphy (2000) employ a similar measure. This data was created and calculated through information gathered from the SIX Trust database and Datastream. The measure of growth opportunities has decreased between the years, which could be explained by a correction of market values over the period. A comprehensive table with market-to-book data by year and industry can be found in Appendix B.

5.6 Industry

In line with previous studies, industry categories are used as an explanatory variable in the model (e.g. Kole, 1997 and Conyon and Murphy, 2000). The industry category has been determined on the basis of Affärsvärlden's categorization and consists of the following industries: finance, healthcare, industrial, IT, consumer goods, media and entertainment, raw materials, telecommunications and services (Affärsvärlden, 2005). We use services as our base category. As can be seen in the table below, the industrial industry is the largest and media and entertainment the smallest in our data set.

[19] In addition, data on firm performance as measured by net income before extra items, was collected from Datastream. This measure is used as it corresponds to the most frequently reported measure of net income for companies on the Stockholm Stock Exchange.

Nr of Companies			
		Nr	%
Total		246	100%
By industry			
	Finance	43	17%
	Healthcare	31	12%
	Industrial	61	24%
	IT	41	16%
	Consumer Goods	27	11%
	Media and Entertainment	6	2%
	Raw Materials	13	5%
	Telecommunications	11	6%
	Services	13	7%

Table 5. Industry Classification. This table reports the distribution of firms along nine industry categories. The industry categories remain static across time and have been collected as of December 2005.

5.7 Additional and Alternative Variables

Descriptive data for the additional and alternative variables can be found in Appendix C.

5.7.1 Board Compensation

Data on compensation for the board of directors was collected. The data on board compensation is comprised of the total board compensation fee, compensation to the chairman of the board and compensation to other board members[20]. Compensation to both the chairman and the members has increased between the years.

5.7.2 AP Funds

Within the category of institutional owners, the Swedish AP funds were classified as a subgroup. They consist of the first, second, third, fourth, sixth and seventh AP funds. The share of AP fund ownership is 23 percent for both 2001 and 2005.

5.7.3 Ownership and Performance

The interaction between institutional or foreign ownership and performance, respectively, was captured through the product of performance and ownership[21]. The data on performance was collected as described above.

[20] In the category other board members, we have not included union representatives or deputy board members. Also, if the head of the board or any of the members have been employed in the company and received compensation for work within the company; this salary has not been included in our data set. In the few cases where it is not clearly stated the individual sum for each of the board members, excluding the head of the board, we assume that each member is paid an equal amount.

[21] A product larger (less) than one implies that the effects of ownership on performance is positive (negative).

5.7.4 CEO Ownership

Data on the shares owned by the CEO[22] has been collected and calculated as a percentage of the total number of shares outstanding. This was done in order to determine the CEO's ownership of the firm[23]. The percentage of CEO ownership has increased between the years. Compared to data from the United States and United Kingdom, the percentages of CEO ownership are similar (Conyon and Murphy, 2000).

[22] Including shares held by close family members, which are disclosed in the Annual Report according to Aktiebolagslagen.

[23] Input data for the number of stocks was collected by hand from annual reports for all firms and are reported as of December 31, 2001 and 2005 respectively. The data on total number of shares was obtained from the SIX Trust database.

6. Results

The results are presented as outlined previously. We begin with the level of compensation and then continue with performance-based compensation. Finally, we present our results for the additional and alternative variables to contribute to a better understanding of CEO compensation in Sweden.[24]

6.1 Level of Compensation

6.1.1 Level of Compensation for the Investigated Years

The table below reports the results from the regressions for cash and total compensation for 2001 and 2005.

	Dependent Variable		Dependent Variable	
	2001		2005	
Independent Variable	Cash Compensation	Total Compensation	Cash Compensation	Total Compensation
Dummy Foreign Owner	(-0,056)	(-0,208)	(0,009)	(-0,022)
Dummy Institutional Owner	(0,095)	(0,152)	(0,146)	(0,010)
ln (Market Capitalization)$_{t-1}$	0,377***	0,403***	0,328***	0,362***
ln (Return)$_{t-1}$	(0,086)	(0,094)	(0,025)	(-0,006)
ln (Market-to-book)$_{t-1}$	-0,261***	-0,304***	-0,311***	-0,322***
Largest Investor Foregin	(0,230)	(0,309)	(0,056)	(0,201)
Largest Investor Institutional	(0,060)	(0,319)	(-0,057)	(-0,020)
Dummy Finance	-0,713**	-0,838**	(-0,237)	(-0,264)
Dummy Health Care	(-0,027)	(-0,117)	(0,224)	(0,254)
Dummy Industry	(0,033)	(0,077)	(0,103)	(0,115)
Dummy IT	(0,184)	(0,435)	(0,326)	(0,503)
Dummy Consumer Goods	(-0,087)	(0,010)	(0,160)	(0,156)
Dummy Media	(0,434)	(0,628)	(-0,112)	(-0,129)
Dummy Raw Material	-	-	(0,103)	(0,297)
Dummy Telecom	(-0,132)	(-0,139)	(0,130)	(0,141)
Intercept	6,846***	6,475***	7,880***	7,518***
Number of observations	66	67	125	123
Adjusted R^2	0.66	0.62	0.60	0.57

Table 6. Level of compensation. This table reports the coefficients from the regressions looking at cash and total compensation for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

6.1.1.1 Cash Compensation

When studying the level of cash compensation, we find that institutional or foreign ownership does not affect the level of cash compensation. Similarly, whether the largest owner in the firm is foreign or institutional does not affect the level of cash compensation. These results apply for both 2001 and 2005. We find that the institutional ownership coefficient is positive while the results for the foreign ownership coefficient show different signs for the two years.

[24] Since we noticed that many observations were missing, we decided to use an alternative method in estimating the regressions. Consequently we estimated the regressions excluding cases pairwise instead of listwise. Although the number of observations increased, our results were left unchanged.

The only significant explanatory variables appear to be market capitalization and market-to-book. We can see that, on average and holding all else constant, when the size of the firm increases by one percent, the cash compensation will increase by 0.38 and 0.33 percent for 2001 and 2005 respectively. For growth opportunities, we find a negative coefficient of -0.26 and -0.31, for 2001 and 2005.

The industry dummy for raw materials is dropped in the regression for 2001 due to the few firms in this industry category. The results for industry category for 2001 show that the only significant difference is given for the finance industry, whereas the result for the other industry categories indicate that there is no significant difference compared to the base category (services). When controlling for firm size using total assets and firm performance using net income, our results still hold. The same is true when using dividend rights instead of voting right for ownership.

6.1.1.2 Total Compensation

For the level of total compensation, our results when testing for the effect of the existence of a foreign or institutional owner show corresponding results to cash compensation. We find that foreign or institutional ownership does not affect the level of total compensation. Whether the largest owner in the firm is foreign or institutional does not affect the level of total compensation either. These results apply for both 2001 and 2005. We find that the institutional ownership coefficient is positive and the foreign ownership coefficient is negative.

Firm size and growth opportunities are the only significant coefficients. We find that, on average and holding all else constant, when the size of the firm increases by one percent, the total compensation will increase by 0.40 and 0.36 percent for 2001 and 2005 respectively. For growth opportunities we find a negative coefficient of -0.30 and -0.32, for 2001 and 2005. The results are thus similar to those for cash compensation.

As previously, the industry dummy for raw materials is dropped in the regression for 2001 for the same reasons as mentioned previously. The results for industry category for 2001 show that the only significant difference is given for the finance industry, whereas the result for the other industry categories indicate that there is no significant difference compared to the base

category. When controlling for firm size using total assets and firm performance using net income, our results still hold. The same is true when using dividend rights instead of voting right for ownership.

For the case where we find a significant industry dummy for finance, we can see that it has a negative impact on both cash and total compensation. The finance industry appears to be significantly different from the other industries, which do not show any significant deviation from the base category.

It should be noted that the adjusted R^2 is approximately 60 percent, indicating the model has some explanatory power. The number of observations differs substantially between the years, with the number almost doubling for 2005.

6.1.1.3 Level of Bonus and Level of Pension

In addition, we further verify our results by looking at the level of bonus and, as above, we do not find any significant effect of foreign or institutional ownership. These results also hold when we control for different proxies for firm size and performance. We also find the same results when using ownership measured by dividend rights instead of voting rights. It should be noted that since much information is lacking concerning the specification of bonus and other compensation for 2001, we have relatively few observations to base our results on for that year. The table of results for the level of bonus and the level of pension can be found in Appendix D.

For the level of bonus, we find that the coefficient for firm size is positive and significant, 0.34 and 0.36 percent for 2001 and 2005 respectively and negative and significant for growth opportunities, -0.08 and -0.29 percent respectively.

When looking at the level of pension, we find similar results as for the level of cash compensation and the level of total compensation. The only coefficients that are significant are firm size and performance. We see no significant effect of foreign or institutional ownership. The coefficient for firm size is positive, 0.50 and 0.42 percent for 2001 and 2005 respectively and negative for growth opportunities, -0.31 and -0.45 percent respectively.

6.1.2 Change in Ownership and Compensation

The table below shows the results from the regressions for the change in cash and total compensation between the years.

	Dependent Variable	
Independent Variable	Change in Cash Compensation	Change in Total Compensation
Difference Foreign Ownership	(-0,315)	(-1,835)
Difference Institutional Ownership	(-1,102)	(-1,633)
Difference ln (Market Capitalization)$_{t-1}$	(-0,113)	(0,094)
Difference ln (Return)$_{t-1}$	(0,005)	(0,057)
Difference ln (Market-to-book)$_{t-1}$	(0,067)	(-0,043)
Largest Investor Foregin	(0,180)	(0,311)
Largest Investor Institutional	(-0,044)	(0,310)
Dummy Finance	(0,400)	(0,443)
Dummy Health Care	(0,560)	1,152**
Dummy Industry	(0,410)	(0,377)
Dummy IT	(0,539)	(0,040)
Dummy Consumer Goods	(0,778)	(0,707)
Dummy Media	(0,156)	(0,015)
Dummy Raw Material	-	-
Dummy Telecom	(0,763)	(0,906)
Intercept	(-0,113)	(-0,056)
Number of observations	49	49
Adjusted R^2	-0.17	0.03

Table 7. Change in compensation. This table reports the coefficients from the regression looking at the change in cash and total compensation. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

6.1.2.1 Change in Cash and Total compensation

When looking at how the change in foreign and institutional ownership affects the change in the level of compensation, we find that none of our coefficients are significant.

We now find a significant industry dummy, for healthcare on the 5 percent level. As was observed previously, the industry dummy for the raw materials category is dropped due to a lack of observations. It should be noted that many observations are dropped due to the lack of data from 2001. This might explain the low adjusted R^2 and the poor explanatory power of the model, which can be seen in the table above.

When looking at total compensation and using total assets and net income as proxies for firm size and performance, respectively, we find that there is a significant effect of the largest owner being foreign on the 10 percent level. However, this does not hold when controlling for dividend rights. Overall, the change in foreign and institutional ownership between 2001 and 2005 does not seem to affect the change in cash compensation or total compensation over the chosen years.

6.1.2.2 Change in the Level of Bonus and Pension

When looking at how the change in foreign and institutional ownership affects the change in the level of bonus, we find significant results for firm size with a coefficient of 1.63 and growth opportunities, -1.20 (see Appendix D for a table of results). For the change on the level of pension, we find no significant coefficients. This may be explained by the small number of observations (19).

6.2 Performance-based compensation

6.2.1 Stock-Based Performance-based compensation

The results from the regressions for stock-based performance-based compensation are shown in the table below.

	Dependent Variable	
	2001	2005
Independent Variable	Stock-Based Performance-Based Compensation	
Dummy Foreign Owner	(0,058)	(0,013)
Dummy Institutional Owner	(-0,066)	-0,090*
ln (Market Capitalization)$_{t-1}$	-0,027**	(-0,008)
ln (Return)$_{t-1}$	(0,026)	(-0,001)
ln (Market-to-book)$_{t-1}$	(0,006)	(0,004)
Largest Investor Foregin	(-0,028)	(-0,018)
Largest Investor Institutional	(0,097)	(-0,010)
Dummy Finance	(0,119)	(0,072)
Dummy Health Care	(0,045)	(0,017)
Dummy Industry	(0,014)	(0,039)
Dummy IT	(-0,016)	(0,012)
Dummy Consumer Goods	(-0,020)	(0,074)
Dummy Media	(-0,040)	(0,010)
Dummy Raw Material	-	(0,024)
Dummy Telecom	(0,008)	(0,020)
Intercept	0,641**	0,246**
Number of observations	53	114
Adjusted R^2	-0.001	-0.03

Table 8. Stock-based Performance-based compensation. This table reports the coefficients fro the regressions looking at stock-based performance-based compensation for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

When using stock-based performance-based compensation as measured by the percentage of CEO ownership in the firm, we find no significant results regarding institutional or foreign ownership for 2001. However, for 2005 we find that institutional ownership is related to the stock-based performance-based compensation, indicating that institutional ownership will on average decrease the performance-based compensation by 0.09 percent. Furthermore, it is worth noting that that adjusted R^2 value is very low, indicating that there are factors explaining the stock-based pay-for-performance not captured in our model. The previous pattern of size and performance does not hold, as can be seen in the table above.

6.2.2 Bonus as Share of Total Compensation as Performance-based compensation

	Dependent Variable	
	2001	2005
Independent Variable	Bonus as share of total compensation	
Dummy Foreign Owner	(0,010)	(-0,002)
Dummy Institutional Owner	(-0,059)	(0,076)
ln (Market Capitalization)$_{t-1}$	0,025**	0,023**
ln (Return)$_{t-1}$	(0,004)	(-0,008)
ln (Market-to-book)$_{t-1}$	-0,021*	-0,015**
Largest Investor Foregin	(0,089)	(-0,015)
Largest Investor Institutional	(0,047)	(-0,060)
Dummy Finance	(0,001)	(0,060)
Dummy Health Care	(0,021)	(0,026)
Dummy Industry	(0,055)	(0,041)
Dummy IT	(0,075)	(0,015)
Dummy Consumer Goods	(0,042)	(-0,017)
Dummy Media	(-0,014)	(-0,036)
Dummy Raw Material	-	(-0,008)
Dummy Telecom	(-0,001)	(0,116)
Intercept	-0,440	-0,468**
Number of observations	69	123
Adjusted R^2	0.05	0.098

Table 9. Bonus as a share of total compensation. This table reports the coefficients from the regressions looking at bonus as a share of the total compensation for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

When looking at bonus as a fraction of total compensation the results are similar. Foreign and institutional owners do not seem to affect the fraction of pay that is flexible. Size and growth opportunities are significant. For firm size we have coefficients of 0.03 and 0.02 for 2001 and 2005. For growth opportunities we find coefficients of -0.02 for both 2001 and 2005. However, the adjusted R^2 value is very low, as can be seen in the table above. The same regression was run using bonus and options together as a fraction of total compensation and found similar results.

6.3 Additional and Alternative Variables

The results for the regressions performed for the additional and alternative variables are presented in Appendix E.

6.3.1 The Board of Directors

As a further control of our results, we look at board compensation. We disregard total board compensation and focus on compensation for the chairman and per member in order to avoid biases created by the difference in the number of board members between firms. Our results show that the coefficient for firm size is significant. The coefficient for growth opportunities is significant for all cases except for the chairman of the board for 2001. For 2001, we find that the effect of foreign ownership is significant on the 5 percent level with a value of 0.60. It

should be noted that many observations are dropped due to the lack of data, especially for 2001.

6.3.2 AP Funds

When looking at the effect of institutional ownership as defined solely by the AP funds, we find significant effects for 2005. We find that there is a significant effect of the existence of at least one AP fund for both cash compensation and total compensation for 2005, with coefficients of 0.26 and 0.34, respectively. This indicates that CEOs are paid more in firms with an AP fund owner among the ten largest owners and is significant on the 10 percent level for cash compensation and 5 percent level for total compensation. As previously, firm size and growth opportunities for both years as well as the finance industry for 2001 are significant. When controlling the results using total assets and net income as proxies for firm size and performance, respectively, the findings still hold. The same is true when controlling for dividend rights instead of voting rights.

6.3.3 Ownership and Performance

When looking at how institutional or foreign investors interact with performance and affect CEO compensation, we find no significant results. The coefficients for firm size and growth opportunities are significant, as well as for the finance industry for 2001. As previously, firm size and finance are positive and the growth opportunities coefficient has a negative impact. For complete results, see Appendix E.

6.3.4 CEO Ownership

When adding an additional variable capturing CEO ownership to the original regressions (with cash compensation and total compensation for 2001 and 2005, respectively as the dependent variable), we find that firm size and growth opportunities are significant, as before. The results also show that the variable CEO ownership is significant for all cases except one, total compensation for 2001. The coefficient is negative and ranges from -1.16 to -1.20. The adjusted R^2 value is reasonably high, slightly above 60 percent.

7. Discussion

The purpose of this paper is to investigate whether the existence of a foreign or institutional owner affects CEO compensation. We look at this through two main approaches, the level of compensation and performance-based compensation.

We do not find support for the hypothesis that institutional or foreign investors affect the level of CEO compensation or performance-based compensation. Hence, our results on the effect of institutional owners contradict findings from previous studies using data from other countries. For foreign ownership, our study does not give any indication that foreign owners influence CEO compensation.

7.1 Level of Compensation

For the level of compensation, we cannot reject our null hypothesis that institutional and foreign owners, respectively, have no effect on CEO compensation.

The level of compensation in Sweden is, by international standards, modest. Average total compensation in Sweden is roughly half of the average total compensation in the United Kingdom and one tenth of that of the United States (e.g. Conyon and Murphy, 2003). The difference is mainly explained by the value of options. Only a select number of Swedish global firms have salaries that are comparable to those of the United States or the United Kingdom (e.g. Ericsson).

Our results show that foreign or institutional ownership does not affect the level of compensation as measured by cash compensation and total compensation. Similar results are found when we look at the level of bonus and pension specifically. Whether the largest owner is foreign or institutional does not have an impact on the level of pay either. The direction of impact is mixed and our results do not show a clear negative or positive impact from foreign or institutional ownership.

Our results from the change in the level of compensation between the years do not produce any significant results. The change in compensation does not appear to be determined by foreign or institutional ownership. The effect of firm size and growth show mixed results. This is possibly explained by the small number of observations.

Our results may indicate that institutional and foreign investors are not active monitors in Swedish firms. Different subcategories within these ownership categories may have different monitoring incentives, implying that the overall effect of institutional or foreign investors is not straightforward. In this case, it may be more interesting to look at subcategories, in which owners are categorized according to their incentives and ability to monitor. Other studies have touched upon other distinctions between owners (e.g. Giannetti and Laeven, 2007, Almazan et al., 2004, Khanna and Palepu, 1999). One such distinction is made by Almazan et al. (2004), who show that firms with more active owners tend to have lower levels of pay than firms with more passive owners. We attempt to make an initial investigative study of this by distinguishing AP funds as a subgroup, as is described below. We then find different results.

7.2 Performance-based compensation

For performance-based compensation, we cannot reject our null hypothesis that institutional and foreign owners, respectively, have no effect on CEO compensation with one exception.

Our results from tests on performance-based compensation show the following. For all cases, we cannot reject our null hypothesis, with one exception. For 2005, we can reject the null hypothesis on the 10 percent level, indicating there may be a negative effect of institutional ownership on stock-based performance-based compensation, contradicting our expectations. Previous studies have shown a positive relationship between institutional ownership and performance-based compensation. However, the explanatory power of our models is very low, indicating that the explanatory variables in our model may not be the central determinants of performance-based compensation.

As with many previous studies, our results can be interpreted through the framework of agency theory. The most important issue is the incentive for large owners to monitor the CEO or structure compensation accordingly. This suggests that performance-based compensation should be higher in firms with owners that monitor the CEO less rigorously. However, as described above, the majority of our results do not support this theory.

There are a number of possible explanations for this. Foreign and institutional owners may differ in their respective ways of exerting their power through the board. It is more likely that large domestic owners are represented on the board of directors, and foreign owners may thus have more limited influence and monitoring capabilities. There are also other theories that

would clarify the relationship better, as suggested by Bebchuk and Fried (2005). They propose that other relationships may affect the board of directors, so that agency problems arise between the share holders and the board. Further investigations would, however, be required to add additional support to this theory.

Again, as with the level of compensation, a possible explanation for the lack of significance for our ownership variables is the choice of distinction between different groups of owners. As mentioned previously, differences within the group of institutional or foreign owners may be of such magnitude that it would serve the interest of explaining CEO compensation better if other categorizations were made.

We can relate the results from stock-based performance-based compensation to Swedish corporate culture. The main determinant of the number of shares held by the CEO may not necessarily be closely related to compensation, but rather be determined by factors such as whether the CEO is also the founder of the firm. Future studies may find that adding such an explanatory variable may help explain stock-based performance-based compensation in Sweden. Other studies (e.g. Conyon and Murphy, 2000) have chosen variables such as CEO age or whether the CEO is also the chairman, the second case being prohibited by Swedish corporate law. Hence, there may be country specific factors which could be added in a future model.

Hartzell and Starks (2003) identify an important issue in studying CEO compensation. Currently, with the existing information disclosure regulations it is not possible to identify the full portfolio held by the manager, including the stocks and options already held by the manager. It is not known when certain shares and options were acquired and their change in value with regards to the initial purchases price. We suspect this may have a significant effect on the performance-based compensation, as the total composition of the managers portfolio is not known and therefore not accounted for when constructing incentive schemes. Ofek and Yermack (2000) find evidence that the manager will adjust their personal portfolio, of which not all is visible to outsiders, according to the composition of their compensation package. This suggests there is much within this area that is yet to be studied.

7.3 Control Variables

We find that the most important factors in explaining the level of CEO pay and performance-based pay is firm size and growth opportunities. This is in accordance with a number of previous studies (e.g. Zhou, 2000, Patton, 1951, Roberts, 1956, Chhaochharia and Grinstein, 2006). We find that firm size has a positive relation to CEO compensation, as is expected. For growth opportunities, we find a negative relation to CEO compensation, which contradicts our expectations and previous studies (Conyon and Murphy, 2000). This is not as expected, as firms with more growth opportunities are generally viewed as more risky, leading the CEO to demand a higher level of compensation. Our results could be explained by the fact that larger, established firms may have access to the fund to pay CEOs a higher compensation, despite fewer growth opportunities. Conversely, although growth firms may need a qualified, and thus expensive, manager, they may not have the resources to employ such a manager.

Firm performance and industry do not appear to be important in our study, with the exception of the finance industry in certain cases. Firm performance may not show an impact for a number of reasons. We use a one year lag, whereas it may be argued that performance should be lagged by more years. Another reason is that firm performance may be due to market conditions rather than firm specific situations. In these cases, we do not expect CEO compensation to be directly determined by firm performance. Further, it is important to note that for the firms and years in our study, fixed salary is by far the largest component of CEO compensation (65 percent, on average) and we believe this component is unlikely to be affected by firm performance. This can be explained by contracting issues, which may affect our results in that CEO compensation contracts are negotiated and thereafter valid for a number of years before renegotiation takes place. Together with the large portion of fixed salary and pension, it would therefore seem unlikely that CEO compensation would be adjusted downward even if firm performance is weak. Weak firm performance may cause the CEO to be replaced, but we believe it is unlikely that the new CEO would receive a lower salary than the previous CEO.

7.4 Additional and Alternative Variables

7.4.1 The Board of Directors

For the level of compensation to the chairman of the board and members of the board, we can not reject the null hypothesis regarding the effect of institutional and foreign ownership, with one exception.

When looking at the results from board compensation, we find that the results in general mirror our previous results. This is true for three out of our four regressions. Conversely, for 2001, we find evidence that indicates that there may be a positive relationship between foreign ownership and the compensation to the chairman of the board. In sum, there does not appear to be a relationship between institutional or foreign owners and board compensation.

The exception for 2001, where we find that the existence of a foreign owner is positive and significant in explaining the compensation for the chairman of the board, may be of interest for future studies. The board of directors may also be subject to agency issues, meaning that their compensation can also be an indication of the influence of owners. It should be noted that there may also be determinants of board compensation that differ from those of CEO compensation.

7.4.2 AP Funds

We can reject the null hypothesis for 2005, indicating that the existence of AP funds does have an influence on the level of CEO compensation.

When looking specifically at the AP funds, we find that the coefficients are significant and positive for 2005 and the results are consistent for several tests. This may indicate that the influence of AP funds has increased between the years. Since we found that institutional investors defined as all institutions did not produce significant results, but the AP funds prove otherwise, our data indicates that different groups of institutional investors may affect compensation differently. This has been investigated for other sub segments in previous studies (e.g. Giannetti and Laeven 2007, Almazan et al. 2004). However, it is unclear from our study whether the difference stems from the institutions in capacity of state-owned funds, Swedish institutions, or some other categorization. We believe the influence of the AP funds specifically can be explained by the pressure exerted on them in the capacity of managers of

state-owner pension funds. The change between the years is plausible due to the attention given to corporate governance and active ownership following the discussions on the generous pension awarded the firm ABB's Barnevik (BBC News, 2002). Therefore, we expect that AP fund owners have become more active between the years, despite the fact that the number of firms with AP fund ownership has remained constant. These results provide support for using other and possibly more specific ownership categorizations.

Thus, when dividing institutional ownership into subgroups, we find a positive relationship between institutional ownership and CEO compensation. This positive effect supports the expected result given theory, which suggests that managers who receive a larger share of performance-based pay will demand a higher level of expected compensation. This, in turn, means that the level of total expected compensation will also be higher than otherwise (Hartzell and Starks, 2003). A different explanation for the higher level of compensation draws from the study by Rajan and Wulf (2006). If owners are better monitors, they may compensate the CEO with a higher salary since the CEO is less likely to extract private benefits as a result of increased monitoring. Simultaneously, the positive relationship may conversely imply that the monitoring of the AP funds is insufficient, resulting in higher salaries than would otherwise be expected. We cannot determine the underlying components of the higher level of compensation and therefore further analysis is required to more accurately explain this result.

7.4.3 Ownership and Performance

We do not find support for that an interaction term between foreign or institutional owners and performance affects the level of CEO compensation.

When studying the results from the interaction effect between ownership and performance on CEO compensation, we find that there is no significant positive or negative effect. This is not unexpected, since we do not find an effect of foreign or institutional ownership on compensation in many of our other regressions. Our results are interesting to look at because we assume that institutions function as active owners and monitor the CEO. Consequently, reasoning through theory may indicate that firms in which the CEO is monitored are less likely to be affected by a CEO that pursues their own interests to the detriment of the shareholders, resulting in improved firm performance.

7.4.4 CEO Ownership

We find support for that CEO ownership affects the level of CEO compensation in the majority of cases.

We investigate the benefit of adding an additional variable which captures CEO ownership given as the percent of the firm owned by the CEO. We find that this variable is significant and, as expected, negative. If the CEO has a high share of ownership in the firm, the interests of the CEO and the shareholders are more aligned. This implies that the CEO will be less likely to demand higher compensation than what is expected given the size, performance and industry of the firm (Hartzell and Starks, 2003). We believe our results may be directly explained by Swedish corporate culture, where a large ownership in the firm is more likely to be an indication of the CEO also being the founder of the firm or otherwise closely connected to the firm, rather than the shares being awarded as compensation.

8. Conclusion

Despite the growing interest in executive compensation contracts, few studies have been conducted outside of the Unites States and the United Kingdom. Consequently, this area of executive compensation is still unknown territory in many aspects.

The purpose of this paper is to contribute to studies on the connection between CEO compensation and institutional and foreign ownership using data on Swedish firms. Our study sheds light on the effect of institutional investors on CEO compensation on the Swedish market as well as the potential effect of foreign investors.

The level of CEO compensation has increased over the studied time period, but is still modest compared to e.g. the United States and United Kingdom. Fixed salary continues to be the largest component and performance-based pay has increased. This indicates that Sweden is converging with norms in for example the United States, where performance-based compensation is becoming an increasingly important component.

In our study, we do not find support for an effect of institutional and foreign investors on CEO compensation in Sweden. This is true for both the level of compensation and performance-based compensation. We do, however, find results supporting an effect of a subgroup of institutional owners on CEO compensation. The most important determinants of CEO compensation in Swedish listed firms are firm size and growth opportunities. Furthermore, we find interesting initial results suggesting that CEO ownership may also be an important factor in explaining CEO compensation.

We believe our study contributes to understanding the connection between CEO compensation and institutional and foreign ownership in Sweden. Further, our study shows that there are interesting owner subgroups as well as other important factors influencing CEO compensation in Sweden. We hope this paper will inspire future studies within the area to further probe into the mechanisms driving CEO compensation in Sweden and internationally.

9. Suggestions for Future Research

Studies on executive compensation levels and components have mainly been performed in the United States and information on other countries is still limited (Tian and Twite, 2006). Further research would benefit from looking at different countries and comparing executive compensation and the effects of ownership structure and concentration on them. This is in part due to the differences in corporate governance practices and corporate culture, which impose restrictions and structures that affect executive compensation.

Information from the United States is arguable most commonly used due to the structure and extent of their disclosure regulation regarding CEO compensation. In Sweden, this information has not been available in separate components for many years. Although many firms have greatly improved their reporting on the components of CEO pay, the practice to do so is still a recommendation rather than a requirement. We find large discrepancies in the availability of information between the years 2001 and 2005 included in our study. Information for 2005 is more often reported in its components, providing data that allows it to be used for studies such as this more readily.

In July 2005, the Swedish Code for Corporate Governance was implemented (SOU, 2004, Dagens Industri, 2005). We believe that the guidelines proposed in this code will encourage firms to increase their disclosure of information on the components of CEO compensation. Judging from annual reports for Swedish listed firms from 2006, this appears to be the case, which implies that the understanding or CEO compensation may be improved in the future (e.g. Electrolux Annual Report, 2007).

One of the main possibilities for improvement in our study would be to increase the number of observations over the years. Since we believe more detailed compensation data will be available from Swedish firms over the coming years, it would be interesting to develop this study further with additional data. This is perhaps most clearly illustrated when comparing the data available to Zhou (2000) for the Canadian market or Hartzell and Starks (2003), who use 36,000 observations in their study of the American market. In addition, comprehensive ownership data listing all owners and their classification as foreign and/or institutional would strengthen the results of this study.

Our results show that institutional and foreign investors, respectively, do not affect CEO compensation, while we do find evidence when using a subcategory of institutional investors. This indicates that the current division regarding owners may not be sufficient in explaining the effect of ownership on CEO compensation. For future studies, it may be interesting to follow studies such as Giannetti and Laeven (2007) and Almazan et al. (2004), in which a subcategory to one investor group is chosen and thus further investigate which investor categories have the largest influence on CEO compensation.

Another interesting aspect, which has been noted by several studies, is the effect of board structure on CEO compensation (e.g. Bebchuk and Fried, 2005, Chhochharia and Grinstein, 2006 and Tian and Twite, 2006). The corporate governance regulations regarding factors such as the number of executives on the board, the independence of the board members and if the CEO is also the chairman of the board may affect the level and composition of CEO compensation. As mentioned previously, the board of directors may also be subject to agency problems that affect their monitoring responsibilities. The mechanisms of these factors and relationships have yet to be researched and may help explain the levels and structure of CEO compensation.

Much research remains in the area of ownership and CEO compensation. As our thesis shows, many studies within this area have been conducted recently and there is an ongoing debate on the determinants of CEO compensation. This suggests that further contributions to better understand the connection between ownership and CEO compensation may be available within the next few years.

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11. Appendix

11.1 Appendix A - Option Valuation

Valuing the executive stock options has been done through a modified Black and Scholes valuation with adjustments for continuous dividends. The options have been valued though information and input data collected from annual reports. Only stock options grants that have been awarded during the current year, i.e. 2001 or 2005 are included.

It should be noted that there are several restrictions and conditions pertaining to executive stock options that limit the accuracy of Black and Scholes valuation. These include that the options are exercised prior to maturity, although this is theoretically suboptimal. Related to this fact, executive stock options are also often only valid and exercisable as long as the holder is employed at the firm. For this reasons, many executive stock options will expire without being exercised, even if they are in the money, or lead to earlier exercise than would otherwise have been optimal. Hence, many alternative methods have been suggested for valuing executive stock options, which mainly take into consideration the propensity for the option holder to exit the firm prior to the option's expiry date (e.g. Jennergren, 1992, Hall and Murphy, 2001). However, the most commonly used valuation method is still Black and Scholes, correcting for continuous dividends.

11.1.1 Modified Black-Scholes Option Valuation Methodology

The method used to value the executive stock options is a modified Black and Scholes option pricing model (Merton, 1973). This model also considers continuous dividends. The pricing formula hence takes the following form:

$$c(S_0,T) = e^{-rt}(S_0 e^{(r-q)T} \cdot N(d_1) - KN(d_2)$$

$$d_1 = \frac{\ln(S_0 e^{(r-q)T} / K) + (\sigma^2/2)T}{\sigma\sqrt{T}} \qquad d_2 = d_1 - \sigma\sqrt{T}$$

Thus, the call price c is determined by the following assumptions:

1. The estimated risk-free interest rate, r, during the options lifetime
2. The stock price at the time of issuance of the options S_0
3. The estimated continuous dividend yield, q, during the options lifetime
4. The strike price per share, K
5. The estimated volatility of the stock during the options lifetime, σ^2
6. The time of maturity of the option T

The strike price and maturity are determined by the firm prior to or at the time of issuance of the options. In the case where no specific date was stated, January 1 of the year was taken as the date of issuance and December 31 for the maturity date of the stated year. Information on the stock price at the time of issuance is available.

11.1.2 Risk-free Interest Rate

The risk-free interest rate used corresponds to the current Swedish rates on T-bills and Treasury bonds with the closest available duration (Riksbanken, 2006). Hence, we use different rates depending on the duration of the option. The maturity of the option was thus rounded to the nearest whole year. We use this rate as it was known at the time of issuing the options and it satisfied the Black and Scholes condition of a risk-free interest rate. The rates used are summarized below:

Year\Duration	1	2	3	4	5	6	7	8	9	10
2001	2.74%	4.27%	4.41%	4.55%	4.69%	4.81%	4.94%	4.99%	5.05%	5.10%
2002	4.33%	4.63%	4.75%	4.87%	4.99%	5.06%	5.13%	5.19%	5.24%	5.30%
2003	3.07%	3.50%	3.69%	3.89%	4.09%	4.20%	4.31%	4.42%	4.53%	4.64%
2004	2.32%	2.80%	3.13%	3.46%	3.78%	4.03%	4.28%	4.33%	4.37%	4.42%
2005	1.89%	2.33%	2.50%	2.67%	2.84%	3.00%	3.17%	3.24%	3.31%	3.38%
2006	2.74%	3.20%	3.31%	3.42%	3.52%	3.56%	3.60%	3.63%	3.67%	3.70%

Table 10. Interest rates used for option valuation

11.1.3 Continuous Dividend Yield

As our data consists of information on all companies listed on the Stockholm Stock Exchange, not all companies will have a dividend yield that is consistent over time or representative of an average dividend payout. We therefore choose to use a proxy and instead employ the average dividend yield over a five-year period of 3 % for the expected continuous dividend yield.

11.1.4 Estimated Future Stock Price Volatility

The volatility used reflected the calculated volatility over a 60 month period prior to the issuance of the option. If the company is in the bottom 5% or top 5% of volatilities of all the companies listed of the Stockholm Stock Exchange, we adjust the volatility to correspond to the 5^{th} and 95^{th} percentile values. In the cases for which we valued options, this was not necessary as none of the companies included had stock price volatilities in either 5 % end of the sample.

11.2 Appendix B – Firm Size, Performance and Growth Opportunities

This table reports the mean, median, standard deviation and 10th and 90th percentiles of the firm data on market capitalization, market-to-book and return as of January 1, 2000 and 2004, respectively and by industry.

Descriptive Statistics	Mean		Median		Std. Dev.		10%		90%		Nr of observations	
	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004
Market Capitalization (million SEK)												
All Firms	14 904	9 474	942	699	84 006	28 176	144	95	24 771	23 435	182	201
By Industry												
Finance	16 749	14 584	2 612	2 605	32 564	33 260	325	269	66 701	40 897	32	36
Healthcare	643	1 360	306	279	951	2 835	62	38	1 466	4 304	19	25
Industrial	8 158	5 114	918	1 242	18 298	9 963	161	139	25 834	9 326	49	24
IT	2 075	648	985	287	2 564	775	201	71	5 962	1 813	31	33
Consumer Goods	16 971	11 875	550	1 827	52 154	29 418	142	208	26 123	28 949	19	20
Media and Entertainment	5 744	2 675	2 688	2 393	9 445	2 982	259	225	14 285	5 689	6	5
Raw Materials	12 334	12 729	2 303	5 322	19 638	22 373	132	171	33 873	26 049	9	9
Telecommunication	144 890	35 016	2 616	395	381 456	73 674	759	64	367 868	156 254	8	13
Services	7 290	7 010	592	1 259	18 721	12 623	27	142	17 563	20 569	8	7
Return												
All Firms	9.37%	37.62%	4.34%	21.89%	64.35%	62.43%	-64.48%	-13.25%	91.66%	102.44%	180	199
By Industry												
Finance	19%	53%	15%	35%	49%	71%	-19%	13%	39%	104%	31	36
Healthcare	36%	19%	13%	2%	87%	43%	-49%	-20%	169%	80%	19	24
Industrial	22%	37%	6%	25%	51%	38%	-26%	-1%	92%	102%	49	52
IT	-26%	37%	-56%	18%	68%	66%	-84%	-33%	60%	111%	31	33
Consumer Goods	23%	34%	4%	30%	74%	43%	-45%	-10%	87%	97%	19	20
Media and Entertainment	11%	10%	16%	3%	65%	10%	-60%	2%	78%	21%	6	5
Raw Materials	-36%	5%	-31%	-4%	17%	24%	-57%	-16%	-19%	30%	9	9
Telecommunication	-34%	49%	-29%	18%	31%	92%	-71%	-24%	-4%	111%	8	13
Services	27%	76%	29%	16%	77%	162%	-56%	-10%	116%	210%	8	7
Market-to-Book												
All Firms	3.63	2.48	0.72	0.69	10.62	6.50	0.00	0.00	8.44	7.22	167	198
By Industry												
Finance	1.45	0.90	0.29	0.36	3.83	2.24	0.00	0.02	1.98	1.36	34	34
Healthcare	7.96	7.50	6.85	1.49	10.18	18.02	0.06	0.01	16.51	18.07	14	22
Industrial	1.73	1.64	0.65	0.58	3.51	4.27	0.06	0.01	4.02	3.47	45	51
IT	9.16	6.13	2.24	1.16	23.93	11.50	0.00	0.00	16.48	14.41	25	32
Consumer Goods	2.77	1.84	1.16	0.90	3.93	2.31	0.02	0.09	7.17	4.92	19	20
Media and Entertainment	0.66	0.56	0.54	0.74	0.41	0.30	0.00	0.00	1.10	0.77	6	5
Raw Materials	0.89	0.84	0.88	0.68	0.78	0.82	0.76	0.59	1.63	1.14	7	11
Telecommunication	9.32	4.72	2.97	2.59	17.02	6.09	0.52	0.31	21.39	12.45	9	12
Services	2.12	2.62	0.82	1.50	3.56	3.82	0.02	0.05	5.50	6.21	8	10

Table 11. Descriptive characteristics for firm size, performance and growth opportunities

11.3 Appendix C – Additional and Alternative Variables

The tables below show descriptive data for the additional and alternative variables.

11.3.1 Board of Directors

The table below shows descriptive statistics for the chairman of the board and the head of the board for both 2001 and 2005.

Board Compensation

Chairman/Head (KSEK)	Mean		Median		Std. Dev.		No of Observations	
	2001	2005	2001	2005	2001	2005	2001	2005
All Firms	139	153	100	125	105	105	64	170
By Industry								
Finance	157	174	110	135	120	126	17	32
Healthcare	99	118	79	100	88	74	9	25
Industrial	132	166	120	149	73	96	19	43
IT	94	111	67	100	84	60	8	25
Consumer Goods	144	157	149	125	103	102	5	19
Media and Entertainment	-	215	-	215	-	49	0	2
Raw Materials	100	169	100	187	-	104	1	6
Telecommunication	318	207	256	125	159	201	3	9
Services	147	135	147	120	152	81	2	7

Table 12. Compensation Data for Chairman of the Board for all firms and by industry for 2001 and 2005

Board Compensation

Per Member (KSEK)	Mean		Median		Std. Dev.		No of Observations	
	2001	2005	2001	2005	2001	2005	2001	2005
All Firms	343	372	200	250	447	429	159	227
By Industry								
Finance	485	548	240	300	560	608	31	38
Healthcare	217	270	160	200	233	213	15	28
Industrial	335	366	248	300	317	314	47	58
IT	136	239	120	200	88	159	21	37
Consumer Goods	531	386	220	210	745	504	16	24
Media and Entertainment	100	253	100	250	57	95	2	4
Raw Materials	297	490	200	400	267	293	9	9
Telecommunication	469	573	192	200	773	896	9	13
Services	237	176	180	135	169	109	7	13

Table 13. Compensation Data for Board Member for all firms and by industry for 2001 and 2005

11.3.2 AP Funds

AP Fund Ownership

	2001	2005
Firms with an AP Fund owner	23%	23%

Table 14. Ownership data for the AP funds for 2001 and 2005.

11.3.3 CEO Ownership

The table below shows statistics on the average and median of the share of the firm held by the CEO.

CEO Ownership

	Mean		Median		Std. Dev.		No of Observations	
	2001	2005	2001	2005	2001	2005	2001	2005
All Firms	2.97%	3.20%	0.07%	0.16%	9.64%	11.01%	157	206
By Industry								
Finance	5.10%	5.37%	0.12%	0.16%	14.63%	17.99%	30	36
Healthcar	9.67%	3.60%	0.73%	0.74%	17.89%	5.69%	15	24
Industrial	1.82%	1.81%	0.09%	0.05%	6.57%	6.68%	42	54
IT	2.85%	1.00%	0.48%	0.21%	5.95%	2.01%	23	31
Consumer	0.62%	4.14%	0.01%	0.18%	1.68%	10.98%	16	20
Media an	0.01%	11.89%	0.00%	0.13%	0.01%	28.54%	3	6
Raw Mate	0.34%	7.35%	0.00%	0.23%	0.80%	16.20%	7	11
Telecomm	0.05%	0.39%	0.00%	0.14%	0.15%	0.84%	12	14
Services	1.40%	1.12%	0.52%	0.28%	2.84%	2.60%	9	9

Table 15. CEO ownership data for all firms and by industry for 2001 and 2005

11.4 Appendix D – Level of Bonus and Level of Pension

11.4.1 Level of Bonus and Level of Pension

The tables below show the results for the level of bonus and level of pension for 2001 and 2005.

	Dependent Variable	
	2001	2005
Independent Variable	Bonus	
Dummy Foreign Owner	(0,055)	(-0,066)
Dummy Institutional Owner	(-0,647)	(-0,340)
ln (Market Capitalization)$_{t-1}$	0,341**	0,361***
ln (Return)$_{t-1}$	(-0,100)	(0,159)
ln (Market-to-book)$_{t-1}$	(-0,080)	-0,290***
Largest Investor Foregin	(0,325)	(0,246)
Largest Investor Institutional	(-0,260)	(-0,612)
Dummy Finance	(-1,653)	(1,206)
Dummy Health Care	-	(1,245)
Dummy Industry	(-0,502)	(1,094)
Dummy IT	(-1,002)	(1,756)
Dummy Consumer Goods	(-0,950)	(0,612)
Dummy Media	(-2,062)	(0,283)
Dummy Raw Material	-	(1,411)
Dummy Telecom	-	(1,713)
Intercept	7,590*	5,503***
Number of observations	25	78
Adjusted R^2	-0.01	0.22

Table 16. Level of bonus. This table reports the coefficients from the regressions looking at the level of bonus for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

	Dependent Variable	
	2001	2005
Independent Variable	Pension	
Dummy Foreign Owner	(-0,019)	(-0,143)
Dummy Institutional Owner	(0,443)	(0,005)
ln (Market Capitalization)$_{t-1}$	0,499***	0,421***
ln (Return)$_{t-1}$	(0,116)	(0,011)
ln (Market-to-book)$_{t-1}$	-0,312**	-0,446***
Largest Investor Foregin	(-0,130)	0,718*
Largest Investor Institutional	(-0,195)	(0,112)
Dummy Finance	(-0,354)	(-0,610)
Dummy Health Care	(0,298)	(0,270)
Dummy Industry	(0,934)	(-0,079)
Dummy IT	(0,796)	(0,327)
Dummy Consumer Goods	(-0,430)	(0,104)
Dummy Media	-	-
Dummy Raw Material	-	(0,530)
Dummy Telecom	(0,949)	(-0,058)
Intercept	(1,962)	4,695***
Number of observations	30	111
Adjusted R^2	0.50	0.43

Table 17. Level of pension. This table reports the coefficients from the regressions looking at the level of pension for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

11.4.2 Change in the Level of Bonus and Pension

The tables below show the results for the change in the level of bonus and pension between 2001 and 2005.

	Dependent Variable	
Independent Variable	Change in Bonus	Change in Pension
Dummy Foreign Owner	(0,196)	(-0,303)
Dummy Institutional Owner	(2,265)	-
ln (Market Capitalization)$_{t-1}$	1,625**	(0,787)
ln (Return)$_{t-1}$	(-0,046)	(-0,073)
ln (Market-to-book)$_{t-1}$	-1,203**	(-0,068)
Largest Investor Foregin	(-1,159)	(1,332)
Largest Investor Institutional	(0,264)	(1,108)
Dummy Finance	(0,499)	(0,673)
Dummy Health Care	(-0,980)	(1,613)
Dummy Industry	(-0,550)	(0,156)
Dummy IT	(0,500)	(1,963)
Dummy Consumer Goods	(-0,847)	(1,387)
Dummy Media	-	-
Dummy Raw Material	-	-
Dummy Telecom	-	(0,731)
Intercept	(-0,181)	(-0,216)
Number of observations	20	19
Adjusted R^2	0.59	-0.08

Table 18. Change in the level of bonus and pension. This table reports the coefficients from the regressions looking at the change in the level of bonus and pension between 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

11.5 Appendix E – Results for Additional and Alternative Variables

11.5.1 Board of Directors

$$\begin{aligned} Board\ compensation_{it} = {} & \beta_1\, foreign\ ownership_{it} \\ & + \beta_2 institutional\ ownership_{it} \\ & + \beta_3 size_{it-1} \\ & + \beta_4\, performance_{it-1} \\ & + \beta_5\, growth\ opportunities_{it-1} \\ & + \beta_6 largest\ shareholder_{it} \\ & + \sum \beta_k \cdot industry\ dummy\ variables_t \end{aligned}$$

	Dependent Variable		Dependent Variable	
	2001		2005	
Independent Variable	Chairman of the Board	Member of the Board	Chairman of the Board	Member of the Board
Dummy Foreign Owner	0,601**	(0,140)	(0,013)	(0,120)
Dummy Institutional Owner	(0,328)	(0,312)	(0,059)	(0,200)
ln (Market Capitalization)$_{t-1}$	0,147*	0,333***	0,212***	0,241***
ln (Return)$_{t-1}$	(0,037)	(-0,082)	(-0,003)	(0,020)
ln (Market-to-book)$_{t-1}$	(0,025)	-0,236***	-0,187***	-0,206***
Largest Investor Foregin	-	(-0,056)	(-0,200)	(-0,268)
Largest Investor Institutional	(0,693)	(0,370)	(0,173)	(0,178)
Dummy Finance	(0,045)	(-0,515)	-0,723*	(0,227)
Dummy Health Care	(-0,214)	(-0,240)	(-0,600)	(0,318)
Dummy Industry	(0,288)	(-0,272)	(-0,524)	(0,287)
Dummy IT	(-0,413)	(-0,423)	(-0,566)	(0,516)
Dummy Consumer Goods	-	(0,028)	(-0,705)	(0,151)
Dummy Media	-	(-0,396)	(-0,350)	(0,349)
Dummy Raw Material	-	-	(-0,614)	(0,632)
Dummy Telecom	-	(-0,278)	(-0,534)	(0,558)
Intercept	1,504***	5,048***	7,726***	6,887***
Number of observations	23	57	97	123
Adjusted R^2	0.62	0.46	0.38	0.26

Table 19. Board of directors. This table reports the coefficients from the regressions looking at the level of compensation for the board of directors for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

11.5.2 AP Funds

$$\begin{aligned} CEO\ compensation_{it} = {} & \beta_1 AP\ funds_{it} \\ & + \beta_2 size_{it-1} \\ & + \beta_3 performance_{it-1} \\ & + \beta_4 growth\ opportunities_{it-1} \\ & + \beta_5 largest\ shareholder_{it} \\ & + \sum \beta_k \cdot industry\ dummy\ variables_t \end{aligned}$$

	Dependent Variable		Dependent Variable	
	2001		2005	
Independent Variable	Cash Compensation	Total Compensation	Cash Compensation	Total Compensation
Dummy AP Funds	(0,028)	(0,136)	0,255*	0,338**
ln (Market Capitalization)$_{t-1}$	0,375***	0,389***	0,302***	0,323***
ln (Return)$_{t-1}$	0,090*	(0,010)	(0,014)	(-0,012)
ln (Market-to-book)$_{t-1}$	-0,261***	-0,289***	-0,287***	-0,287***
Largest Investor Foregin	(0,222)	(0,091)	(0,039)	(0,168)
Largest Investor Institutional	(0,093)	(0,215)	(-0,041)	(-0,008)
Dummy Finance	-0,716**	-0,835**	(-0,116)	(-0,166)
Dummy Health Care	(-0,052)	(-0,205)	(0,249)	(0,215)
Dummy Industry	(0,013)	(0,031)	(0,142)	(0,115)
Dummy IT	(0,149)	(0,353)	(0,369)	(0,501)
Dummy Consumer Goods	(-0,118)	(-0,068)	(0,222)	(0,154)
Dummy Media	(0,395)	(0,502)	(0,108)	(-0,125)
Dummy Raw Material	-	-	(0,001)	(0,180)
Dummy Telecom	(-0,135)	(-0,176)	(0,348)	(0,353)
Intercept	6,970***	6,832***	8,441***	8,230***
Number of observations	66	67	115	115
Adjusted R^2	0.67	0.62	0.61	0.59

Table 20. AP funds. This table reports the coefficients from the regressions looking at the AP funds. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

11.5.3 Ownership and Performance

$$\begin{aligned} CEO\ compensation_{it} = {} & \beta_1\, foreign\ ownership_{it} \cdot performance_{it-1} \\ & + \beta_2 institutional\ ownership_{it} \cdot performance_{it-1} \\ & + \beta_3 size_{it-1} \\ & + \beta_4\, performance_{it-1} \\ & + \beta_5\, growth\ opportunities_{it-1} \\ & + \beta_6 largest\ shareholder_{it} \\ & + \sum \beta_k \cdot industry\ dummy\ variables_t \end{aligned}$$

	Dependent Variable		Dependent Variable	
	2001		2005	
Independent Variable	Cash Compensation	Total Compensation	Cash Compensation	Total Compensation
Foreign investors effect on performance	(-0,017)	(0,042)	(0,080)	(0,069)
Institutional investors effect on performance	(-0,041)	(-0,060)	(-0,249)	(-0,284)
ln (Market Capitalization)$_{t-1}$	0,374***	0,401***	0,333***	0,362***
ln (Return)$_{t-1}$	(0,135)	(0,129)	(0,235)	(0,242)
ln (Market-to-book)$_{t-1}$	-0,252***	-0,294***	-0,314***	-0,322***
Largest Investor Foregin	(0,218)	(0,064)	(0,102)	(0,218)
Largest Investor Institutional	(0,106)	(0,192)	(-0,069)	(-0,038)
Dummy Finance	-0,691**	-0,824**	(-0,257)	(-0,284)
Dummy Health Care	(-0,052)	(-0,159)	(-0,256)	(0,281)
Dummy Industry	(0,019)	(0,061)	(0,111)	(0,123)
Dummy IT	(0,168)	(0,415)	(0,361)	0,519*
Dummy Consumer Goods	(-0,108)	(-0,030)	(0,180)	(0,168)
Dummy Media	(0,399)	(0,622)	(-0,050)	(-0,099)
Dummy Raw Material	-	-	(0,103)	(0,262)
Dummy Telecom	(-0,137)	(-0,145)	(0,126)	(0,118)
Intercept	6,978***	6,566***	7,913***	7,512***
Number of observations	68	69	125	123
Adjusted R^2	0.66	0.61	0.61	0.58

Table 21. Ownership and performance. This table reports the coefficients from the regression looking at ownership and performance for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.

11.5.4 CEO Ownership

$$\begin{aligned} CEO\ compensation_{it} = {} & \beta_1 CEO\ ownership_{it} \\ & + \beta_2\, foreign\ ownership_{it} \\ & + \beta_3 institutional\ ownership_{it} \\ & + \beta_4\, size_{it-1} \\ & + \beta_5\, performance_{it-1} \\ & + \beta_6\, growth\ opportunities_{it-1} \\ & + \beta_7 largest\ shareholder_{it} \\ & + \sum \beta_k \cdot industry\ dummy\ variables_t \end{aligned}$$

	Dependent Variable		Dependent Variable	
	2001		2005	
Independent Variable	Cash Compensation	Total Compensation	Cash Compensation	Total Compensation
CEO Ownership	-1,194*	(-1,154)	-1,200**	-1,164*
Dummy Foreign Owner	(0,026)	(-0,119)	(0,048)	(0,021)
Dummy Institutional Owner	(0,099)	(0,312)	(0,074)	(-0,149)
ln (Market Capitalization)$_{t-1}$	0,342***	0,377***	0,316***	0,343***
ln (Return)$_{t-1}$	0,115*	(0,091)	(0,028)	(0,001)
ln (Market-to-book)$_{t-1}$	-0,265***	-0,302***	-0,293***	-0,296***
Largest Investor Foregin	(0,052)	(-0,035)	(0,023)	(0,313)
Largest Investor Institutional	(0,099)	(0,042)	(-0,028)	(0,014)
Dummy Finance	(-0,627)	-0,786*	(-0,067)	(-0,158)
Dummy Health Care	(0,091)	(0,003)	(0,340)	(0,327)
Dummy Industry	(0,011)	(0,039)	(0,241)	(0,172)
Dummy IT	(0,179)	(0,473)	(0,487)	(0,562)
Dummy Consumer Goods	(0,155)	(0,247)	(0,383)	(0,276)
Dummy Media	(0,076)	(0,006)	(0,005)	(-0,086)
Dummy Raw Material	-	-	(0,226)	(0,353)
Dummy Telecom	(-0,122)	(-0,159)	(0,243)	(0,160)
Intercept	7,613***	6,846***	8,068***	8,013***
Number of observations	52	53	113	110
Adjusted R^2	0.67	0.64	0.61	0.62

Table 22. CEO ownership. This table reports the coefficients from the regression looking at CEO ownership for 2001 and 2005. Three, two and one asterisks represent a significance level of 1, 5 and 10 percent respectively.