Financial Reporting and Corporate Governance

Essays on the contracting role of accounting and the effects of monitoring mechanisms

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To my parents

Abstract

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The governance and transparency in firms constitute the major concerns in today's business. Contracts are fundamental aspects of corporations and in order to be efficient they should be designed and monitored using high quality information and well-functioning corporate governance. This thesis covers the role of accounting in the contractual context and the effects of monitoring mechanisms in firms in enhancing the quality of financial reports.

The need for accounting information in contractual relationships comes from the limitations of relevant information for monitoring managerial behavior, which is fundamental for efficiency of contracts. In this respect, this study concerns two important issues: first, the role that accounting plays in increasing the effectiveness of contracts for resolving agency problems in firms; and second, the effect of a firm's governance mechanisms as well as a country's legal environment for ensuring high quality financial reports.

Regarding the first issue, the essays examine the use of accounting performance in CEO compensation contracts. The general conclusion is that compensation contracts are used as an alternative monitoring mechanism in firms with greater agency problems. The evidence for the use of accounting performance-based compensation in family firms with dual-class shares indicates that, due to the excess voting rights by controlling shareholders in these firms, agency problems arise and CEOs receive higher performance-based compensation. Furthermore,

findings show that with an improved transparency due to the changes in accounting standards, the link between accounting performance and CEO compensation becomes stronger.

With respect to the second research issue, the essays examine the role that governance mechanisms play in enhancing the quality of financial reports and the contracting role of accounting in designing an efficient compensation contract. The results indicate that governance regulations and the mandatory compensation disclosures enhance the efficiency of compensation contracts and the pay-performance relation. Furthermore, the monitoring performance of the board of directors and specifically the role of employee representatives is found to be important in improving the earnings quality of firms. Overall, the results from the essays conclude that financial accounting information plays an important role in CEO compensation, as reflected in the pay-performance relation. However, for playing this role, both the firm's governance mechanisms and the country's legal environment must be effective.

Keywords: monitoring, compensation contracts, accounting performance, earnings quality, ownership structure, board of directors, governance regulations.

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A windy day in November,
kitchen table,

Slussen!

Contents

Part I

Introduction

1 Background to the studies

The emergence of contractual relationships among a wide range of actors is grounded in the activities of financial capital markets. Contracting arrangements between parties are put in place to restrain collusions between some actors at the expense of others and mitigate conflicts of interest. In particular, the separation of ownership and control (Berle and Means, 1932) and the divergent interests between corporate insiders and outside shareholders create a demand for efficient contracting and monitoring mechanisms (Jensen and Meckling, 1976). Contractual arrangements, such as compensation contracts between managers and shareholders, are used in order to align the interests of managers with those of shareholders. These contracts often include restrictions on managers' actions conditional on certain accounting numbers (Watts and Zimmerman, 1986, p.196). The use of accounting numbers in contracts suggests that the efficiency of contracts depends on the choice of accounting measures. This aspect of accounting is considered the *contracting role* of accounting in the literature (Holthausen and Leftwich, 1983; Watts and Zimmerman, 1986).

The role that accounting plays in the contracting process is dependent on managerial incentives (Fields et al., 2001). This is mainly because managers exercise discretion and judgment in selecting accounting procedures. Managers whose incentives are aligned with those of shareholders choose accounting methods that convey information to investors and communicate the firm's financial condition (Dye and Verrecchia, 1995; Fields et al., 2001; Watts and Zimmerman, 1990). On the other hand, a self-serving incentive of managers disrupts the potential benefits of such discretion in choosing an efficient accounting procedure. As argued by Watts and Zimmerman (1990, p.135), "[c]ontracts that use accounting numbers are not effective in aligning managers' and contracting parties' interests if managers have complete discretion over the reported accounting numbers." Therefore, restrictions on accounting choices are needed to limit any possible costs imposed on users as a result of the self-serving management behavior.

Within the framework of accounting standards regimes, financial statement preparers are required to use some discretion and judgment in accounting methods that convey information to the market (Fields et al., 2001). This is, in particular, reflected in the "principles-based" International Financial Reporting Standards (IFRS), in which there is a relatively more reliance on managers' judgment

and discretion in accounting method choice, compared to the "rules-based" accounting standards (such as the US GAAP) (Agoglia et al., 2011). Accordingly, flexibility in accounting procedures is expected to lead to a more informative signal, regarding the underlying economic events, in financial statements (Dye and Verrecchia, 1995).

The advocates of the principles-based approach refer to the primary aim of IFRS for higher quality financial reporting and provide evidence of positive capital market effects of financial statements under IFRS (see Barth et al., 2008; Daske et al., 2008; Hellman, 2011b; Landsman et al., 2011). On the other hand, the negative consequences of increased discretion – such as the manipulation of financial accounts motivated by contractual considerations – have been one of the main concerns in the literature (Agoglia et al., 2011). In this respect, research has focused on how institutional factors, such as legal systems, as well as corporate governance practices influence managerial incentives when applying accounting methods (Ball et al., 2000; Brüggemann et al., 2013; Ernstberger and Grüning, 2013). In particular, the potential role that corporate governance plays in enhancing the efficiency of contracts and mitigating opportunistic accounting method choice has motivated extant accounting research. This role emphasizes the efficiency of internal governance mechanisms – e.g., provided by the board of directors and/or ownership – for limiting possible opportunistic behavior and enhancing the accounting choice that is used efficiently to motivate managers to act in the best interests of shareholders.

Furthermore, over the last decade, corporations have increasingly become subject to various regulatory reforms within and across countries. Notably, after several major corporate accounting scandals in the beginning of the 2000s (e.g., Enron and Worldcome in the U.S., and Parmalat, Skandia, and Royal Ahold in Europe) and the financial crisis in 2007, the usefulness of systems of corporate control was largely debated. In particular, boards of directors were criticized for not fulfilling their role of monitoring managers. Subsequently, a wide range of legislative and regulatory changes were adopted in several countries in response to the failures that resulted from these scandals. The new regulatory requirements are aimed to promote investor protection and enhance governance mechanisms (Ernstberger and Grüning, 2013). Hence, the impact of legal systems, enforcement regimes, and corporate governance in shaping managerial incentives and, therefore, the observed financial reporting practices should be investigated (Brown et al., 2014;

Brüggemann et al., 2013).

In summary, a high complexity in structuring different contracting arrangements and governance mechanisms has raised attention among researchers, along with the main focus of regulatory bodies, who seek to understand the ways in which monitoring managerial practices and protecting shareholder interests can be promoted. This thesis concerns the role of accounting as an integral part of the firm's contracting process and considers the interaction between the usefulness of accounting in enhancing the efficiencies of contracts and the potential role of governance mechanisms for monitoring and improving the quality of the reported accounting numbers.

1.1 The role of financial reporting and corporate governance

Information asymmetries and conflicts of interest between contracting parties are considered important reasons for the commitment to increased transparency and higher quality financial reporting (Healy and Palepu, 2001). As argued by Armstrong et al. (2010, p.179) "[t]he information environment plays a central role both in determining the extent of these conflicts and in designing the mechanisms to mitigate them." In particular, detailed information about firms' operating systems, financing, and investing activities, is essential for the efficiency of contracting arrangements. Accounting is a fundamental part of contracting mechanisms since it provides information for designing and evaluating contracts. This implies that certain contractual arrangements are more efficient than others in reducing agency costs, depending on the accounting numbers that are used in contracts (Watts and Zimmerman, 1986). The role that corporate financial reporting and disclosure plays in mitigating agency costs has been considered to be an important area of governance research in the accounting literature (Bushman and Smith, 2001).

A main feature of financial information systems is to provide high quality accounting information and a commitment to a transparent information environment (Kothari, 2001). Higher quality financial reporting is essential to decrease the severity of information asymmetry between managers and market participants. A potential problem, resulting from information asymmetry, is the incentive problems, which arise when the manager's actions are unobservable to the principal (i.e., moral hazard or hidden action problems) (Lambert, 2001). Due to the incidence of these problems and the conflicts of interests between managers and

shareholders, contracting and monitoring costs arise (Jensen and Meckling, 1976). In this respect, accounting information plays a central role in designing contracts that aim at mitigating agency costs (Holthausen and Leftwich, 1983). The important role of financial accounting information here is mainly related to the limitations of relevant information for monitoring managerial behavior, which is fundamental for efficient contract mechanisms.

Prior studies provide evidence regarding the role that financial reporting plays in addressing issues in corporate governance (for survey see Armstrong et al., 2010; Bushman and Smith, 2001). The large focus on the role of financial reporting and accounting information in corporate governance and, in particular, compensation contracts owes to the fact that these contracts are incomplete and need to be supplemented with more information (Armstrong et al., 2010). Increased transparency and higher quality financial reporting can enhance the efficiency of contracting and governance mechanisms and potentially reduce agency conflicts between managers and shareholders. For example, in compensation contracts, improved transparency facilitates the performance evaluation and rewarding of management by filtering out factors that are irrelevant to management's actions on performance (De Franco et al., 2013; Holmstrom, 1982; Ozkan et al., 2012). Furthermore, financial reports – with credible, timely, and relevant information – are important means of communication with other parties, such as independent directors. High quality financial reports can enhance the monitoring performance of the board of directors (Armstrong et al., 2010). In fact, even though the board of directors typically has access to internal reports, the demand for public information and corporate transparency is still great. This is mainly because public disclosures and financial information are subject to various rules and enforcement, and they are also monitored by auditors (Bushman et al., 2004b).

Conversely, another body of research in this area focuses on how corporate governance affects the quality of financial reporting and disclosure (e.g., Ernstberger and Grüning, 2013; Kim et al., 2014; Wang, 2006). This literature shows that governance structures in firms play an important role in enhancing the transparency and quality of financial reporting. In particular, the board of directors plays a key role in monitoring management and overseeing the financial reporting process. In this respect, extant research shows that the board monitoring curbs inappropriate 'earnings management' and limits the abilities of managers to distort and manipulate financial statements (Kim et al., 2014; Klein, 2002; Peasnell et al., 2005;

Srinidhi et al., 2011; Xie et al., 2003).

Following recent regulatory pressure for improving governance mechanisms in firms, the majority of the members of the boards are required to be independent directors (Armstrong et al., 2010). Accordingly, it is expected that the directors on the board who are independent from corporate insiders can contribute to better monitoring of management performance. However, the potential problem faced by outside independent directors is similar to that faced by outside shareholders, i.e., less access to credible information. The effectiveness of a board's decision-making is dependent on the quality of information that they receive. Limited information lessens the ability of a board to effectively monitor and evaluate managers (Jensen, 1993). Therefore, having a transparent information environment is still important for the monitoring performance of a board of directors. In this respect, the effect of regulations and country-level legal systems in facilitating and enforcing existing accounting standards as well as enhancing governance mechanisms in firms is an important area of recent accounting research.

An increased transparency, higher quality of financial reporting, and effective corporate governance system are at the center of attention of practitioners, regulatory bodies, and academics. In particular, the above discussion shows that there is a close connection between efficiency of contracts, information transparency, and governance mechanisms. On the one hand, higher quality financial reporting and more informative accounting earnings can improve contracting arrangements by enhancing transparency and resolving information asymmetry between managers, directors, and outside shareholders. On the other hand, the efficiency of corporate governance is important in reducing management incentives to withhold information and engage in accounting flexibility (e.g., earnings management). These mechanisms may substitute or complement each other in mitigating agency problems. However, they can all be considered important monitoring mechanisms, ensuring that the incentives of managers and corporate insiders are aligned with the interests of shareholders in maximizing the firm's value. Accordingly, this thesis focuses on the interactions across governance mechanisms and, in particular, investigates the relationship between monitoring mechanisms and financial accounting information.

1.2 The case of Sweden

As discussed above, recently there has been increased attention on how firms' reporting incentives are shaped by country-level institutional factors (e.g., legal systems) and firm-level governance structures (e.g., boards of directors). However, the research in this area has been mostly concerned with the settings characterized by dispersed ownership structures. This implies that a large body of research is limited to one specific class of agency problem resulting from the separation of ownership and control at the top level of corporations (see Brickley and Zimmerman, 2010, p.236). However, it is also important to study other environments, which provide us with information on the governance features that have been less frequently considered in literature. This thesis has an exclusive focus on Sweden, given that some features of this setting, while recognizable in many other countries, are difficult to detect in the much-studied setting of the US.

In particular, focusing mostly on the conflicts of interest between managers and shareholders, previous research has placed less emphasis on the common agency conflicts between different classes of shareholders (Brickley and Zimmerman, 2010; La Porta et al., 1999). The conflicts of interest between shareholders comprise the main governance problem in many countries and is a common feature of many corporations around the world (Burkart et al., 2003; Claessens et al., 2002; La Porta et al., 1999). The ability of large investors to expropriate other shareholders' wealth is the primary source of agency problems in many firms. In particular, in these firms, agency problems arise when large shareholder control rights significantly deviate from their cash-flow rights (due to the use of dual-class shares or through pyramidal ownership structures) (Masulis et al., 2009). In firms that controlling shareholders have more control than economic incentives, negative valuation consequences through expropriation by controlling shareholders is possible.

Swedish firms are mostly characterized by concentrated ownership structures, family controlling owners, and the use of control enhancing mechanisms (e.g., using dual-class shares). However, these features are not unique in Sweden; instead, they constitute the common ownership structures in many firms around the world (see La Porta et al., 1999). Considering the European context, for example, these characteristics are representative of many European firms (see Barontini and Bozzi, 2011; Coffee, 2005; Croci et al., 2012; Prencipe et al., 2014; Renders and

Gaeremynck, 2012). In particular, given the large influence of controlling shareholders in many firms, there is a growing concern for the problem of minority shareholder expropriation in European countries (Coffee, 2005).

Corporate governance concerns, including independent boards of directors and efficient executive compensation contracts, are subject to extensive debate in many countries. In Europe, there has been an increased focus on enforcing strong legal institutions for better investor protection, introducing corporate governance codes for improving governance practices, and promoting more transparency and shareholder oversight on executive compensation. Therefore, it is of contemporary significance to examine how these recent reforms in corporate governance affect the transparency and governance of corporations.

In Sweden, the structure of the board of directors is closer to the 'stakeholder' governance model, as identified in many European settings (Ball et al., 2000; Oxelheim and Wihlborg, 2008)[1]. Notably, the board of directors in Swedish firms typically includes employee representatives, which represents a common feature of employee board participation in Europe (see Vitols, 2010). In addition, following the Swedish Code of Corporate Governance, the board of directors in Swedish firms includes almost no inside directors but often consists of a considerable number of the largest owners. With respect to compensation contracts, there have recently been several reforms regarding the detailed disclosure of Chief Executive Officer (CEO) compensation plans and shareholders' binding votes on these plans, which also contribute to the recent emphasis of the European Union on executive compensation.

In summary, using the Swedish setting, this thesis constitutes an investigation into corporate governance features (i.e., the boards of directors structure and ownership characteristics) that are recognizable in several countries, particularly in Europe, and the effects of recent changes in regulation for enforcing better corporate governance practices and increased disclosure.

[1]Ball et al. (2000) identifies the 'shareholder' governance' model as a typical feature of corporate governance in common-law countries (e.g., Australia, Canada, the UK, and the US), in which shareholders are the main parties influencing the governance of firms. On the other hand, in code-law countries (e.g., France, Germany, and Japan) agents for various contracting groups participate in governance of firms, as identified under the 'stakeholder governance' model.

1.3 The outline of the thesis

This thesis consists of three essays in which the relationship between governance mechanisms and financial reporting is investigated. Table 1 presents an overview of the essays and research questions. All three essays consider corporate governance features within the Swedish setting. The ownership structure of Swedish firms is concentrated and characterized by a large influence from controlling shareholders. Hence, in the Swedish setting, potential conflicts of interest between corporate insiders and minority shareholders constitute the major concern and call for governance mechanisms to align the managerial interests with those of the firms as a whole.

Another common feature of the essays is that they all focus on CEO compensation. In particular, CEO cash compensation is a key aspect in the corporate governance debate and is directly related to the quality of accounting information. Hence, CEO compensation provides a relevant research issue for examining the interaction between financial reporting and corporate governance. Furthermore, CEO compensation has become the subject of more regulation for transparency and more shareholder engagement.

In the first essay, the focus is explicitly on ownership structures and the use of CEO performance-based compensation in firms where there are potential conflicts of interest between outside shareholders and corporate insiders. Specifically, the agency problems of family firms with dual-class shares are considered. This essay indicates that greater agency problems, due to the divergence of interests between majority and minority shareholders, are associated with a stronger link between CEO pay and accounting performance, which is used as an alternative governance mechanism.

The second essay concerns the change in CEO compensation practices following several regulatory reforms. In particular, the effect of the mandatory adoption of new accounting standards (i.e., IFRS) as well as new corporate governance requirements are examined in this essay. The overall results provide evidence for a stronger link between accounting performance and CEO compensation with the IFRS adoption and increased compensation disclosures. Furthermore, the pay-performance relation becomes stronger in dual-class firms that submit compensation proposals for shareholder voting.

Table 1. Overview of the Essays

Essays	Research Questions
Essay 1: CEO compensation, corporate governance and family owners in Sweden	Are there any differences in the pay-performance relation across firms with different types of ownership structures?
Essay 2: The effect of regulatory reforms on the pay-performance relation	Do firms increase the pay-performance relation with the introduction of new accounting and corporate governance regulations?
Essay 3: The sheep watching the shepherd: The monitoring performance of the boards with employee representatives	Do employee representatives improve the board's function of monitoring CEO compensation and financial reporting?

The third essay focuses on the board of directors and, specifically, the presence of employee representatives on the boards. Information asymmetry between independent board members and corporate insiders can impose limitations on the monitoring function of the boards. We examine the role of employee representatives and argue that these board members, who have access to firm-specific information as well as more human capital tied to the firm, can contribute to the monitoring role of the boards. The results provide evidence for the potential roles that the employee representatives play in enhancing the monitoring performance of the boards, particularly with respect to financial reporting quality.

Collectively, the essays investigate the contracting role of accounting as well as the role that corporate governance plays in enhancing the benefits of contracts and accounting information as an integral part of contracts. The first essay focuses on the interaction between the ownership structure and the contracting role of accounting in designing an efficient compensation contract. The second essay focuses on the role of regulation and the effect of the mandatory disclosure in enhancing the efficiency of compensation contracts and pay-performance relation. The third essay considers the role of employee representatives on the boards in monitoring management and improving the earnings quality of firms. Overall, these essays focus on two important issues: first, the role that financial accounting

information plays in increasing the effectiveness of contracts; and second, the effect of a firm's governance mechanisms as well as a country's legal environment in enhancing the quality of financial reports.

2 THEORETICAL FRAMEWORK

2.1 Information asymmetry and the incentive problem

In a world with complete and perfect markets, as described in the theory of Modigliani and Miller (1958), there are no transaction costs, no costs of contracting, and no information processing costs (see Watts and Zimmerman, 1986). In that world, investment decisions are independent of firms' financial policies and capital structures, and they are made as long as the marginal benefits of investments equal the marginal costs. However, in a "real" world characterized by information asymmetries, investment decisions become inefficient due to the existence of information differences across participants in the market (Hubbard, 1998). Specifically, *adverse selection* and *moral hazard* are the consequences of information asymmetry where shareholders do not have access to complete information regarding the companies' activities and investment opportunities (Beaver, 1998).

Adverse selection, owing to information differences, arises when shareholders cannot completely verify the information in the market, and when information acquisition costs are high. The information problem, also known as the "lemons problem", leads to inefficiency in the functioning of capital markets. In particular, the information problem in the market results in the undervaluation of "good" quality ideas simply because investors cannot distinguish between different types of business ideas (Healy and Palepu, 2001). This implies that managers choose to disclose more to solve this problem as the information asymmetry between the market and the manager increases (Verrecchia, 2001). Hence, providing high quality information and enhancing the transparency in the market can solve this problem, which is one of the main objectives of financial reporting. Through financial reporting and disclosure, managers seek to alleviate the negative consequences of the information problem by communicating firm specific information (Fields et al., 2001; Healy and Palepu, 2001).

The information role of financial reporting is a well-established research area in the accounting literature (Brüggemann et al., 2013). Research in this area investigates the role of higher transparency and higher quality of financial reporting for enhancing the efficiency of the capital market. For example, prior studies document a negative association between the level of disclosure and cost of equity capital, suggesting that managers choose a higher degree of disclosure in order to lower information risk. This decreases the subsequent incremental return for bearing information risk, which explains the incentive for managers to enhance transparency in corporations (Botosan, 1997; Botosan and Plumlee, 2002; Lang and Lundholm, 1996).

Another major problem that imposes limitations on the function of capital markets is moral hazard. This problem arises as the result of information asymmetries among individuals and when individual actions cannot be observed (Holmström, 1979). This may refer to a situation where managers expropriate shareholder value, for instance, by making investment decisions that are not beneficial to shareholders. Furthermore, moral hazard occurs when management does not play an active role and does not pay the consequences for the risks or the responsibilities of their decision-making (Bushman and Smith, 2001). These situations reflect upon potential conflicts of interests between managers and shareholders (Jensen and Meckling, 1976).

The separation of ownership from control (Berle and Means, 1932) is the primary source of agency conflicts where the decisions are made by managers and the ultimate costs or benefits of these decisions are borne by investors (Fama and Jensen, 1983). In the principal-agent framework, both the principal (shareholders) and the agent (managers) are assumed to follow their own interests. This implies that corporate resources may not be used entirely to increase shareholder value, but instead may be used for the benefits of corporate insiders (Demsetz and Lehn, 1985). Hence, the agency problem arises as the result of conflicts of interests between the agent and the principal (Jensen and Meckling, 1976). In order to alleviate the negative consequences of this problem, agency theory describes the need for monitoring and contracting arrangements (Fama and Jensen, 1983; Jensen and Meckling, 1976).

Financial information plays an important role in contractual arrangements that are presumably used for mitigating agency costs (Fields et al., 2001; Holthausen and Leftwich, 1983; Watts and Zimmerman, 1986). This role is usually derived from

contract theories, which seek to explain the mechanisms for alignment of interests between managers and owners, including compensation contracts. In particular, high-quality financial accounting information can facilitate monitoring mechanisms and promote efficient governance contracts. This *contracting*, also known as *governance*, role of financial reporting is particularly manifest in compensation contracts. The following sections focus on the importance of efficient contracts in alleviating moral hazard problems and the role of accounting in this respect.

2.2 Contractual arrangements

The need for contracting is fundamental in any business dealings. In the economic literature, the view of the corporation as the "nexus of contracts" (e.g., Coase, 1937; Fama and Jensen, 1983; Hart and Moore, 1988; Jensen and Meckling, 1976) is explained by the need to allocate decision rights to managers and boards, with specialized knowledge to maximize firm value. Specifically, self-serving attitudes as well as the divergent goals of individuals are underlying reasons for developing contractual arrangements that aim to mitigate agency conflicts between parties (Jensen and Meckling, 1976; Watts and Zimmerman, 1986).

In today's business, corporations consist of complex relationships among various actors including managers, [different types of] shareholders, debtholders, labor, customers, suppliers, and government (Shivakumar, 2012). Different actors have different goals and specific interests, which may not necessarily be aligned with the interests of other parties. Agency problems are grounded in the conflicts of interests between different parties. The most recognized agency problem occurs between managers and shareholders when self-serving managers follow their own interests and aim to increase their own benefits at the expense of outside shareholders.

Early finance literature emphasized the role of market forces in disciplining managers (e.g., Fama, 1980). Specifically, the control and forces of several markets, including the labor market and product market competition, are considered to be important in this respect. Fama (1980) argued that market forces can discipline and efficiently monitor management since, in a competitive market, managers are concerned about their reputation in the labor market. The signals provided by an efficient capital market regarding the values of firms' securities can influence the

managerial labor market and, thereby, discipline managers and mitigate agency conflicts between managers and outside shareholders.

Assuming that the market can impose pressure on managers, a question that may arise is why we need to introduce governance mechanisms. Despite these market forces, a residual demand for additional control and governance still remains, as is documented in the large body of economic research (for surveys see Armstrong et al., 2010; Bushman and Smith, 2001; Fields et al., 2001; Healy and Palepu, 2001). In general, the literature has considered various governance mechanisms that can be useful in resolving agency problems. Additional governance is imposed through control mechanisms, such as boards of directors, concentrated ownership structures, incentive compensation, debt contracts, and security laws. Perhaps the most recognized solution to the agency problem is to design optimal contracts between investors and managers. Optimal contracts, such as compensation contracts, are in place to align the interests of corporate insiders (i.e., managers) with those of shareholders.

Grounded in agency theory, an optimal contracting framework concerns the problem of moral hazard in the presence of information asymmetry (Holmström, 1999; Jensen and Murphy, 1990; Murphy, 1999). As argued by Holmström (1999), market forces (e.g., induced by the labor market) are not enough to resolve the incentive problem. The main reason is that managers have risk preferences that depend on their career concerns. Market incentives, however, cannot protect managers against high risk; and therefore, they are suboptimal. Owing to the risk-averse behavior of managers there is a need to design contracts to align the interests of managers with those of shareholders. The importance of these contracts becomes evident when they incentivize managers to act on shareholder interests. A well-designed compensation contract is an optimal incentive contract when it motivates managers to enhance the value of a firm (Jensen and Murphy, 1990).

The underlying idea in designing incentive compensation contracts is to link manager pay to firm performance. In this framework, the agent's expected utility is a function of the benefits from compensation and the cost of providing effort. The principal's expected utility is directly related to firm performance, which is a function of the agent's ability and effort (Bushman and Smith, 2001). Incentive contracts tie the agent's expected utility to the principal's objective, i.e., increase in shareholder wealth (Jensen and Murphy, 1990). This implies that the design of efficient incentive contracts is important because the principal receives the marginal

benefits (increase in performance) at the equilibrium of marginal cost (providing compensation for the agent).

Furthermore, the risk involved in compensation packages is another important aspect of the design of optimal compensation contracts. While shareholders are usually neutral to firm-specific risk (due to holding diversified portfolios), managers tend to be risk-averse (Jensen et al., 2004). Yet, being exposed to large risks, managers may transfer the risk as well as subsequent costs to shareholders. This implies that there is a trade-off between risk-taking and incentives. Optimal compensation contracts should, therefore, adjust for the level of risks managers are exposed to by using performance measures that incentivize managers without imposing high levels of risks on them (Jensen et al., 2004).

The above discussion points out that an *ex ante* performance measure is a key factor in defining the incentive plans. Given that managerial actions, as the main variable of the manager's utility function, are unobservable, the principal defines an optimal compensation policy by linking a manager's expected utility to firm performance (Bushman and Smith, 2001; Jensen and Murphy, 1990). Managers are motivated to enhance the future performance of the firm if the designed incentive pay is linked to performance measures, i.e., the pay-performance relation. However, performance measures that are influenced by factors other than managerial performance are not informative on an agent's action and yield inefficient contracts. This implies that optimal compensation contracts should filter out any components that are beyond managers' control to provide them with incentives to exert effort (Holmstrom, 1982).

In practice, evidence shows that a complex portfolio of performance measures, including accounting performance measures as well as market performance measures, are used in determining compensation contracts (see Bushman and Smith, 2001; Ittner et al., 1997; Murphy, 1985). For example, accounting earnings are commonly used in manager compensation contracts, particularly in bonus plans, to reduce manager shirking and motivate them to follow shareholder interests (Watts and Zimmerman, 1986)[2]. In the next sub-section, the contracting role of

[2]The use of accounting information in contacts is not limited to defining boundaries, such as in bonus rates in compensation contracts. Another example is when accounting measures are used to determine the boundaries of a debt contract, such as interests rates. The use of accounting information in debt contracts is another research area relating to the contracting role of accounting, which is excluded from the literature review of this thesis.

accounting information is reviewed and compensation contracts delineated in positive accounting theory are considered since these constitute the main focus of this thesis.

2.3 Positive accounting theory

Positive accounting theory, developed by Watts and Zimmerman (1978, 1979), is grounded in economic theories that assume non-zero contracting and information costs (e.g Coase, 1937; Hart and Moore, 1988; Jensen and Meckling, 1976). As mentioned by Watts and Zimmerman (1978, p.180) accounting is an integral part of contracts that define the firm. A systematic relationship between accounting choices and contracts within firms related to the incentives of management is the main focus of positive accounting theory. According to this theory, accounting decisions define contractual arrangements, such as compensation contracts and debt contracts. The underlying idea is that managers choose income-increasing or income-decreasing accounting procedures depending on the costs or benefits of contracts (Watts and Zimmerman, 1986). This theory considers the incentives of managers for choosing accounting methods that lead to the desired financial reporting objectives (Fields et al., 2001).

In explaining the relationship between accounting choices and contracts, Watts and Zimmerman (1990) focused on two competing perspectives. On the one hand, the *efficient contracting* perspective suggests that accounting procedures are cost-effectively in place in order to increase firm value. On the other hand, managers' *ex post* choice of different accounting procedures (i.e., after knowing the nature of the contracts), is identified under the *opportunistic* behavior of managers. The latter perspective is explained by manager incentives to expropriate shareholder value. In understanding these competing perspectives, compensation contracts are relevant examples. In particular, assuming that executive compensation contracts are directly linked to manager incentives, a large body of research has examined the use of accounting numbers in compensation plans (Fields et al., 2001).

However, before staring with *how* accounting-based performance measures are used in compensation contracts, we might ask *why* they are used in compensation plans in the first place. In other words, given that the main aim of incentive contracts is to align manager interests to those of shareholders, a question may arise as to why not only use market performance measures (such as stock return)

in defining managerial incentive plans. With respect to accounting performance measures (such as profitability), Bushman and Smith (2001) considered three potential roles: a) creating incentives to take actions; b) filtering common noise from other performance measures (e.g., stock price); c) balancing managerial effort across multiple activities.

The first role is mainly related to the direct incentive impact of accounting performance measures in defining bonus plans. Annual bonuses are explicitly related to common financial measures – including earnings per share, net income, and operating income – and they provide a direct incentive for managers to increase their pay by improving the financial performance of firms. The second role is clearly discussed by Sloan (1993), referring to the fact that earnings are more under the manager's control than the stock price. While stock prices are noisy measures of performance evaluation since they reflect unconstrained market factors, earnings are more useful in isolating the performance that is influenced by management actions. Finally, the third role suggests that the flexibility of accounting performance measures are useful in directing managerial effort across multiple activities. Balancing the trade-off between risk and incentive is a critical aspect of designing compensation contracts. The flexibility of accounting performance measures can address this issue and alleviate losses to agency relations (Bushman and Smith, 2001).

The use of accounting performance measures in bonus plans implies that accounting choice plays an important role in the efficiency of earnings-based compensation contracts (Watts and Zimmerman, 1978). However, there is also a risk of manipulation of accounting measures because they are under the direct control of the managers. Managers can affect accounting performance measures through discretion in accounting choices. As explained by Fields et al. (2001, p.257), "[m]anagers whose incentives are consistent with those of the firms' owners may exercise accounting choices to convey private information to investors; other managers may use discretion opportunistically, possibly inflating earnings to increase their compensation". The question becomes whether this discretion in accounting choice instead distorts the efficiency of contracts and leads to further problems. According to Watts and Zimmerman (1986), such discretion, although it could presumably be a tool for opportunistic managers to increase their compensation through manipulation of accounts, is important in directing managers to follow the shareholder interests. Hence, one can argue that the possibility that account-

ing numbers could be misused by managers does not imply that these measures have fundamental limitations, *per se*. However, in this respect, it is important to consider the role of other mechanisms of control in restricting possible opportunistic behavior.

In this section, the main elements of the contracting perspective in the finance and accounting literature are discussed. Concerning the role of optimal contracts in mitigating agency problems, compensation contracts and the use of accounting information financial reporting in improving the efficiency of these contracts were the main focus. The primary objective of management compensation contracts is to motivate managers to maximize firm value and to reduce conflicts of interest between corporate managers and outside shareholders (Smith Jr and Watts, 1992). However, maintaining this objective also depends on the extent of other monitoring mechanisms that are available to firms. For example, managerial compensation contracts can be used as a tool to motivate managers in increasing firm value where shareholders have less opportunity to directly monitor managers. In other words, costly monitoring mechanisms, such as incentive compensation contracts, make more sense in the absence of alternative (less costly) governance mechanisms. Accordingly, the next section specifically discusses the interaction between various governance mechanisms and how they complement or substitute for each other with the main aim to alleviate information asymmetry between managers and shareholders. In particular, the focus is on the literature that investigates the role of governance mechanisms and financial reporting in this respect.

3 FINANCIAL REPORTING AND CORPORATE GOVERNANCE RESEARCH

3.1 Corporate governance mechanisms

Corporate governance is a term that is frequently used by researchers, practitioners, the media, regulators, and the general public focusing on control mechanisms. While common definitions of corporate governance typically take into account the means to mitigate conflicts of interest between managers and investors (see Bushman and Smith, 2001), it has not been possible to find a complete general agreement on the definition of corporate governance. Brickley and Zimmerman (2010) argued that providing a definition of corporate governance is difficult because it

covers a broad range of governance structures (i.e., board of directors, active investors, debt contracts, compensation contracts, auditors, anti-takeover policies, etc.). Hence, a narrow choice of definition is problematic since it limits the focus and interpretation of the role of governance mechanisms.

For instance, in defining corporate governance, a general distinction between internal or external control mechanisms is broadly used in literature (e.g., Armstrong et al., 2010; Denis and McConnell, 2003; Hoitash et al., 2009). Monitoring by the board of directors and controlling shareholders, and the use of incentive compensation (i.e., performance-based compensation) are considered as internal governance mechanisms; whereas disclosure requirements, corporate laws for investor protection, and monitoring by creditors, are examples of external monitoring mechanisms in literature. However, as argued by Brickley and Zimmerman (2010), a definite separation of internal and external control mechanisms can be problematic as it may result in ignoring the complex interactions among a set of contracting relationships inside and outside the firm.

Furthermore, the separation of ownership and control and the conflicts of interests between the agent (i.e., managers) and the principal (i.e., owners) (Jensen and Meckling, 1976) are often the main focus of the corporate governance literature. However, a narrow definition of corporate governance, which only focuses on the classic agency conflict between managers and shareholders ignores the potential conflicts of interest among other parties (Brickley and Zimmerman, 2010). For example, delegating the responsibility of monitoring management to the board of directors may lead to another agency conflict between the board of directors and shareholders (Drymiotes and Sivaramakrishnan, 2012). Accordingly, boards of directors may avoid efficient monitoring because they are dependent on managers or simply because they do not have an incentive to put much effort in monitoring managers. In addition, the corporate governance literature has typically focused on the separation of ownership and control concerning firms characterized by dispersed ownership structures. However, as argued by Brickley and Zimmerman (2010, p.236), "[s]eparation of ownership and control can also exist among shareholders, since cash flow and control rights need not be identical". The primary agency problem in many companies outside the US and the UK arises due to the conflicts of interest between inside controlling shareholders and outside minority shareholders (La Porta et al., 1999; Renders and Gaeremynck, 2012; Shleifer and Vishny, 1997).

In summary, a narrow definition of corporate governance that merely focuses on the agency problem between managers and shareholders is problematic since it ignores other potential agency conflicts. Notably, the board of directors and the controlling shareholders are expected to provide direct monitoring over managers and substitute the need for other costly monitoring mechanisms, such as incentive compensation plans. However, the potential agency conflicts between these parties and outside shareholders may lead to other agency problems. There is growing literature that considers multi-tier agency relationships in firms. According to this literature, agency problems arise due to the conflicts of interests between various parties, including managers, the board of directors, and majority and minority shareholders. In the next sub-sections, the literature that considers these different agency relationships is reviewed and a discussion on the interaction between various types of corporate control mechanisms is provided.

3.1.1 The board of directors

An important governance mechanism is monitoring by the board of directors that scrutinizes the management performance (Fama, 1980; Fama and Jensen, 1983). The boards, as representatives of the shareholders, have two important responsibilities: (1) to monitor and discipline management, and (2) to advise management (Armstrong et al., 2010). These two responsibilities are crucial and central to decision-making within a firm. However, *how* the boards of directors can achieve these objectives has been the subject of a large body of research. Specifically, the boards of directors require information for making important decisions, such as hiring, firing, and rewarding executives. However, the information asymmetry problem between directors and managers may be an obstacle for the board decision-making. In particular, the monitoring performance of the boards requires an independent relationship with managers as well as access to relevant information.

Following a number of major corporate scandals in recent years, the efficiency of governance and contract mechanisms have been criticized. This has led to several changes in the corporate governance structures of firms based on mandatory and voluntary requirements in order to strengthen the effectiveness of these mechanisms. In the US, the incidence of several scandals in the beginning of the 2000s (e.g., Enron and Worldcom) was blamed on the failure of firm-level gov-

ernance systems and, therefore, preceded substantial new regulations, such as the Sarbanes-Oxley legislation (Cohen et al., 2013; Jensen et al., 2004). In Europe, the main guidelines for corporate governance – particularly after corporate scandals in the UK in the late 1980s – started with the great influence of a series of public reports (e.g., Cadbury 1992; Greenbury 1995; Hampel 1998; Turnbull 1999). Following these reports and mainly due to the emphasis of EU recommendations on introducing the code (the best practices) of corporate governance, most European countries have provided guidelines to improve the corporate governance practices of organizations (Oxelheim and Wihlborg, 2008).

In these codes, attention has been devoted to independent directors, who have no relationship with corporate insiders mainly to enhance the boards' monitoring over managers (Armstrong et al., 2010). Sitting on the board of directors conveys many responsibilities. For instance, boards have the responsibility to hire and fire CEOs, provide assessments and reviews of executive compensation plans, and assess firm strategies and projects (Adams et al., 2010). While an increase in the number of independent members on the board of directors is considered to be an improved element of corporate governance practice in firms, the efficiency of an entire independent board in improving different firm practices is debated. The main limitation of independent or outside directors is related to the information problem. In particular, the information asymmetry that exists between managers and outside directors hinders their ability to monitor managers (Bushman et al., 2004a; Jensen, 1993). Furthermore, independent or outside directors may have lower incentives to increase the firm value since, in contrast to executive directors, they do not invest their human capital into the firms. Hence, the trade-off between the advising and monitoring performance of the boards, particularly related to the composition of the boards, has been a subject of divergent views in the literature (Armstrong et al., 2010).

Recently, there has been an emphasis on diversification of the boards. A diversified board – characterized by a composition of members with different backgrounds and competences – can improve the quality of the boards in handling complicated tasks, which require a combination of the advising role and the monitoring role (see Adams et al., 2010; Adams and Ferreira, 2009; Carter et al., 2003; Kim et al., 2014). For example, gender diversified boards are found in some previous studies to enhance the monitoring ability of the boards and lead to higher earnings quality and increased transparency (Adams and Ferreira, 2009; Gul et al.,

2011; Srinidhi et al., 2011). Furthermore, the participation of foreign board members has recently been considered in research. Masulis et al. (2012) examined the potential costs and benefits involved with having foreign directors on the board. They argued that foreign directors that usually have larger networks as well as more access to foreign markets can have a significant contribution in terms of advising managers, while at the same time they may cause monitoring deficiencies due to poor board meeting attendance.

A related issue, which concerns the diversity among the board of directors, is the effect of employee representatives on board performance. Employee representatives' attendance on the boards, which is not uncommon in Europe, has been less considered in the literature. While similar to executive directors, employee representatives invest their human capital in the firm, unlike executive directors they are more concerned about monitoring management and sustaining an independent relationship. The third essay of this thesis explicitly examines the role of these members on boards and provides evidence on the monitoring performance of the boards that have employee representatives.

3.1.2 Ownership structure

Agency theory predicts that when ownership is concentrated, controlling shareholders have stronger incentives to supervise managerial activities (Jensen and Warner, 1988). The presence of controlling shareholders with greater incentives to monitor and discipline managers is expected to reduce agency costs associated with monitoring managers. Accordingly, empirical research has provided evidence that the ability of directly controlling managers inside the firm diminishes the need for alternative governance mechanisms, such as performance-based compensation (Core et al., 1999; Frye, 2004; Ke et al., 1999; Mehran, 1995).

Instead, the primary source of an agency problem in concentrated ownership firms arises due to the conflicts of interest between controlling shareholders and outside shareholders (La Porta et al., 1999; Morck et al., 2005). While controlling shareholders have incentives to directly monitor managers, they may have negative effects on outside shareholder value by following their own interests in companies. Shleifer and Vishny (1997) specifically considered the role of large shareholders in exercising their power in firms and the potential costs associated with expropriation of minority shareholder wealth by large shareholders. The entrenchment

effect of having a large control, demonstrated by Stulz (1988), concerns a situation where controlling shareholder interests deviate from those of other minority shareholders and leads to a misallocation of corporate resources.

In Europe, according to Coffee (2005), the extraction of private benefits of control in firms with concentrated ownership is the major governance problem. Controlling shareholders may care less about the day-to-day share price, but they ascertain that their interests are considered by management. Renders and Gaeremynck (2012) argued that the concentrated ownership structure of companies in Europe may mitigate the traditional principal-agent problem. However, the large influence of controlling shareholders may lead to conflicts of interest between majority and minority shareholders (the so-called principal-principal agency conflict). Focusing on the features of corporate governance in Europe, their results indicate that having greater principal-principal conflicts is associated with weaker corporate governance. The authors argued that, due to the large influence of controlling shareholders over the company and corporate governance mechanisms, the conflicts of interest between majority and minority shareholders leads to a weaker corporate governance in these firms.

As a dominant type of controlling shareholders of firms in many countries, family owners have been the subject of a large body of research in the corporate governance literature (Croci et al., 2012; Prencipe et al., 2014). This research typically deals with the specific characteristics of family owners as they arguably pursue some non-economic goals, have emotional attachments to the business, and demonstrate altruism towards family-related managers (Prencipe et al., 2014).

While some studies consider the *alignment effect* of family owners as a result of lower agency conflicts between managers and shareholders (e.g., Ali et al., 2007; Anderson and Reeb, 2003; Chen et al., 2008), other studies focus on the conditions under which family owner interests deviate from those of outside shareholders and lead to the expropriation of firm value (i.e., the *entrenchment effect*) (Morck et al., 2005; Villalonga and Amit, 2006). Taking into account these contradicting perspectives in the family firm research, the first essay of this thesis investigates CEO compensation and the pay-performance relation in family firms. Specifically, this essay examines family firms that have greater potential agency problems due to the use of control enhancing mechanisms (e.g., dual-class shares) as well as family ties with CEOs.

So far in this section, the focus has been on two important elements of corporate governance of firms (i.e., ownership structure and board structure). The above discussion appraises the potential role of controlling owners and the boards in alleviating information asymmetry between managers and shareholders. The above also discusses other sources of agency problems in firms with, for example, outside directors and controlling shareholders. The next section presents the literature that considers the variation of CEO compensation and the pay-performance relation in firms with respect to ownership and board structures.

3.1.3 Compensation contracts

An important aspect of corporate governance, which has long been at the center of attention, concerns firm compensation policies. Compensation contracts are considered to be important in closing the gap between manager and shareholder interests, which can provide an optimal solution to the agency problem. However, in practice, executive compensation is criticized for being very large and highly influenced by the managers in firms. Following these criticisms, several legislations have been introduced in several countries promoting greater control over compensation plans and enhanced remuneration disclosures.

Three underlying aspects in designing executive compensation contracts are "attraction", "motivation", and "retention" (Jensen et al., 2004). As stated by Jensen et al. (2004, p.28), "[w]ell-designed packages will carefully manage the subtle interactions between the three dimensions of remuneration." In this respect, the board of directors needs to design compensation contracts that not only attract and retain talented and internationally experienced executives, but also motivate them to increase the firm performance. Executive compensation packages often include different components of fixed and variable pay in order to achieve this aim. Variable compensation, such as bonuses and equity incentive plans, are expected to provide managers with a higher motivation to enhance firm performance. Executives compensation can be classified as cash and/or equity-based compensation. Salary and bonus are two common types of cash compensation; equity-based compensation is usually comprised of share options and restricted stock.

The optimal link between firm performance and executive pay is the central aim of designing compensation contracts. Economists have long emphasized the importance of the pay-performance relation in encouraging executives to create more

value. Accordingly, the pay-performance relation motivates managers to create more value for shareholders since managers also get a share of this higher value (Jensen et al., 2004). Hence, in solving the agency problem – as the result of the separation between ownership and control – executive compensation contracts provide incentives for managers to enhance shareholder wealth (Jensen and Murphy, 1990).

Another important aspect in designing executive pay is related to the risk involved in compensation packages. In contrast to shareholders, executives tend to be risk averse; therefore, they usually prefer to have higher fixed pay (i.e., salary) over variable pay (Jensen et al., 2004). Optimal compensation contracts address the issue of risk aversion and incentivize mangers by engaging them in the real outcome of the firm (Holmström, 1999; Jensen and Murphy, 1990). Given that variable components of an executive compensation package (i.e., bonus, stock options, performance-based stocks) entail different levels of risk, a well-designed compensation plan should also carefully manage the risk involved in pay in order to attract, motivate, and retain talented executives. However, exposure to higher risk through too much variable compensation may cause executives to expect a higher premium of compensation. Hence, firms that provide executives with incentive compensation always face a trade-off between the goals of efficient risk sharing and designing incentive plans that motivate executives at the lowest possible cost (Jensen and Murphy, 1990; Jensen et al., 2004).

Based on the above discussion, performance-based compensation plans can provide an advantage if they are carefully specified. For example, equity-based compensation is highly related to shareholder objectives and, therefore, can increase the market performance of the firm (Armstrong et al., 2010; Jensen et al., 2004). However, equity-based incentives, particularly if poorly designed, can lead to further problems. Too much focus on equity-based compensation plans can entail excessive risk to executives and demotivate managers or even, in the worst case scenario, destroy firm value (Jensen et al., 2004).

Annual bonuses, another important type of variable pay, offer several advantages over equity-based plans for providing incentives in organizations. Bonus plans or profit-sharing plans are usually designed based on the accounting performance of a firm. This means that they can provide managers with clear incentives for increasing the value of a firm by specifying operational objectives. Furthermore, these rewards usually have a short-term perspective, which means that managers

have a stronger incentive to achieve their rewards by increasing the performance of the firm. However, there are also some disadvantages with respect to bonus plans. A much-considered one is the potential incentive of managers for manipulating accounting earnings. Notably, accounting earnings – as the underlying performance measure of bonuses – may be subject to accounting flexibility for the benefits of opportunistic managers, but at the subsequent cost to shareholders.

In the majority of recent papers in the area of executive compensation and corporate governance, there has been a discussion and comparison of two competing hypotheses:

- **Optimal Contracting view**. This view considers the role that incentive contracts play in mitigating the classical principal-agent problem by rewarding the agent when value is created for the firm.
- **Managerial Power view**. Based on this hypothesis, executives have power and control over the boards of directors in settling their own compensation. As such, weaker governance is considered as an important reason for large payouts to executives.

According to the optimal contracting perspective, executive remuneration packages should be designed to minimize conflicts of interests that exist between executive directors and shareholders. Referring to the agency theory, most of the compensation literature considers a link between executive pay and firm (accounting or market) performance an optimal contract (Jensen and Murphy, 1990). In particular, facing a dispersed ownership structure, incentive compensation is used an alternative monitoring mechanism by rewarding CEOs to act in the best interest of shareholders. Alternatively, in settings where firms are characterized by concentrated ownership structures, the agency cost associated with monitoring managers is lower (Demsetz and Lehn, 1985). Hence, CEO incentive compensation is less used in firms with controlling shareholders (see Core et al., 1999; Ke et al., 1999; Mehran, 1995).

The managerial power view, which is also known as the rent-extraction hypothesis, concerns the managers' influence over their own benefits by maximizing their compensation (Bebchuk and Fried, 2003, 2004; Bebchuk et al., 2002). This view, similar to the optimal contracting view, recognizes the agency problems in firms (Bebchuk et al., 2002). However, in contrast to the optimal contracting perspective, the managerial power perspective questions the link between pay and

performance in motivating managers to maximize shareholder value. Instead, this view concerns the high levels of executive compensation as a result of executive power over the board of directors. In particular, the lack of the separation of the roles of board chair and CEO (CEO duality) as well as the minority of independent board members on the boards of directors have been criticized as the main reasons for large payouts to executives (see Bebchuk and Fried, 2004). Following this approach, a large number of studies have examined the role of independent board members in moderating and monitoring executive pay, although the result of this research is rather mixed (e.g., Brown and Lee, 2010; Conyon and He, 2011, 2012; Core et al., 1999; Mehran, 1995; Yermack, 1996).

In general, defining a well-designed compensation contract requires a well functioning board of directors. There is an ongoing need for monitoring the variable executive compensation, given that the *ex ante* performance determinants of variable compensation may encourage managers to opportunistically choose accounting methods that inflate earnings (see Watts and Zimmerman, 1986). Moreover, as discussed earlier, a large grant of equity-based compensation to executives may have negative consequences in terms of excessive risk-taking by managers. Therefore, these incentive plans should be monitored and controlled by the board of directors and compensation committees continuously.

The monitoring of executive compensation plans is one of the most critical responsibilities of the board of directors. However, it is still not clear what kind of boards (i.e., with which observable characteristics) facilitate this role (see Adams et al., 2010). While the literature agrees on the important role of independent directors in enhancing the governance of executive compensation, there is also a concern that too much focus on categorizing the board as "weak or strong" and "good or bad" naively simplifies the larger picture with respect to the function of the governance mechanism in general (Armstrong et al., 2010; Jensen et al., 2004). Based on a survey study, Armstrong et al. (2010, p.208) argued that many papers identify boards with a relatively higher proportion of outside directors and with a non-CEO chair as examples of "good" governance structure. However, it is not clear why firms choose to have this kind of governance structure in the first place.

There are reasons to believe that the relationship between the board's structure and its ability to assess CEO compensation is not straightforward. First, in practice it is difficult for boards to directly observe managers and evaluate their performance

(Adams et al., 2010). Second, having more independent directors on the boards may lead to greater CEO compensation as a result of intense monitoring. This is because a greater monitoring pressure from the boards could impose higher risks on CEOs in these firms as a result of less job security, which could lead to higher CEO compensation (see Hermalin, 2005). Third, whether or not director interests are also aligned with those of shareholders is another issue. This sort of mis-alignment mainly happens when directors are paid by managers and are subordinate to them (Kumar and Sivaramakrishnan, 2008; Weisbach, 2006). Hence, an 'optimal' structure of the board of directors with respect to the efficiency of compensation contracts remains an empirical question.

The complexity of the role of the board of directors, in general, and in designing executive compensation plans, in particular, is the focus of current literature. On the one hand, the potential conflict of interests between the boards of directors and shareholders has led to additional emphasis on having independent directors on the boards to monitor managers and their compensation plans. On the other hand, the information asymmetry between the boards and managers can be problematic for board function and effectiveness. Jensen (1993) argued that the boards of directors often fail to effectively monitor management due to the information asymmetry problem that exists between managers and the board of directors. Therefore, facing a greater information asymmetry problem, increased disclosure can potentially improve the boards' ability to monitor executive compensation and enhance the pay-performance link (De Franco et al., 2013). In the next section, the main role of accounting information and public disclosure in a governance context and in incentive contracts is discussed.

In this section, the role of governance mechanisms, including incentive compensation, board of directors, and controlling shareholders is reviewed[3]. Overall, designing a complete set of governance mechanisms, which ensures that managers maximize firm value, is not an easy task. The board of directors are responsible for providing an efficient monitoring of firms, but the potential agency conflicts between the boards and shareholders, and/or the boards and managers limit their role. Controlling shareholders have higher incentives to monitor managers, but they may only follow their own interests in firms, which could also differ from

[3]The extent of the governance literature is larger and includes other mechanisms, such as debt contracts, market for corporate control, legal rules, etc. However, the above-mentioned mechanisms constitute prominent aspects of governance research, which are also considered in this thesis.

the interests of other shareholders. Compensation contracts, based on the optimal contracting view, are put into place to align the interest of managers and shareholders, but large payouts to executives and the absence of a strong pay-performance relation questions the efficiency of these optimal contracts. The potential problems involved with the above-mentioned governance mechanisms do not imply, however, that they are ineffective in dealing with agency problems. Governance mechanisms complement or substitute for each other depending on the extent of monitoring problems in firms. Furthermore, the information environment plays an important role in the efficiency of contracts. The next section discusses the role of accounting information and increased disclosure policies in contractual arrangements.

3.2 Accounting information and disclosure policies

Accounting information and accounting disclosures are required to address the information asymmetry problem in an imperfect market (Beaver, 1998; Fields et al., 2001; Healy and Palepu, 2001; Stulz, 2009; Watts and Zimmerman, 1986). An important approach, studied in the accounting research, is related to the role of corporate disclosures in reducing information asymmetry. In particular, a large body of accounting research concerns the implication of different accounting policies for corporate transparency. An important role of regulated financial reports is to provide relevant information to investors, which is critical for the functioning of an efficient market (Healy and Palepu, 2001).

Furthermore, the role of financial reports with high quality information and transparency is particularly important in settings where there is a great demand for information for monitoring reasons. In this respect, accounting plays a central role as part of the contractual and monitoring mechanisms to mitigate agency problems between parties. Regulated financial reports and public disclosure can enhance the transparency and limit the scope of agency conflicts between shareholders and managers. The importance of the role of financial reporting in this context is that it provides input into control mechanisms and contributes to the mitigation of agency problems.

Publicly disclosed information concerning the financial position and performance of a firm is expected to be perceived by contracting parties as credible information (Bushman et al., 2004b). For example, although the board of directors has access

to private communication in firms, they rely on public disclosures and financial reports as these reports are subject to: accounting rules, auditor oversight, and a higher degree of enforcement (Armstrong et al., 2010; Bushman et al., 2004b). In this respect, audited financial reports provide credible, low cost information, which is a starting point in alleviating information asymmetries and addressing agency problems. Furthermore, financial accounting systems help boards and outside shareholders to understand the underlying information for the 'source' of changes in firm value or share price and enhance their decision-making by separating *controllable* from *uncontrollable* events (Bushman et al., 2004a, p.169).

Brüggemann et al. (2013) argued that in IFRS there is a specific focus on the information role of financial statements. This is related to the main objective of the IAS regulation for a high degree of transparency and comparability of financial statements to improve the efficient function of capital markets. This valuation or information role of financial reporting to alleviate the problem of adverse selection, according to Brüggemann et al. (2013), is related to the *intended consequences* of the mandatory IFRS adoption. However, they also argued that there are *unintended consequences* of IFRS adoption, which are not explicitly stated as in the IAS regulation objectives on the role of accounting. These latter economic consequences are mainly related to the contracting and monitoring costs associated with contractual arrangements and the use of accounting information for efficiency of contracts (see Holthausen and Leftwich, 1983).

While a large body of research has investigated the economic consequences of IFRS adoption by focusing on the informational or valuation effect of accounting numbers (e.g., Barth et al., 2008; Daske et al., 2008; Pope and McLeay, 2011), the effects of IFRS adoption on contracting mechanisms have been less considered (Brüggemann et al., 2013; Wu and Zhang, 2009). However, recently some studies have focused on the importance of higher quality accounting earnings in a contracting context. For example, the implications of the transition to IFRS in CEO performance evaluation and incentive compensation are studied by Ozkan et al. (2012). In particular, focusing on the pay-performance relation the authors found an increase in accounting-based performance weight in designing CEO pay after IFRS adoption. Hence, they argued that a greater use of accounting earnings in determining CEO compensation, after the adoption of IFRS, implies that compensation committees consider accounting earnings to have a higher quality in contracting arrangements. Wu and Zhang (2009) reached a similar conclusion

regarding the implication of accounting earnings in the post-IFRS period as being more informative in the firms' internal performance evaluation. With their findings they concluded that the greater reporting transparency after the IFRS adoption plays an important role in improving firms' internal performance evaluations and efficiency of compensation contracts.

In addition to the role of earnings quality in contracts, following the IFRS adoption, the literature has recently focused on specific country-level requirements for increased transparency, in particular, in compensation contracts. Mandatory disclosure of accounts can provide an additional control mechanism to commit to a more credible disclosure and reduce information asymmetry and agency problems (Cheng et al., 2013). Clarkson et al. (2011) investigated how the regulatory reforms of executive compensation disclosure impacted the design of CEO compensation contracts and the pay-performance relation. They found a stronger pay-performance sensitivity following regulatory changes, suggesting an improved ability of the boards to evaluate management in the post-reform period. De Franco et al. (2013) examined whether increased compensation disclosure can improve evaluation and compensation of management by looking at the pay-performance sensitivity. They concluded that higher disclosures improve transparency, which facilitates the monitoring and evaluation of a manager's performance and compensation.

However, in the literature on contracting context and information disclosure, two competing hypotheses are identified. On the one hand, the effect of disclosure regulation on mitigating information asymmetry between directors and management is considered to be beneficial. In this vein, it is expected that mandated disclosure enables outside directors to have more efficient performance evaluations of executives (Clarkson et al., 2011; De Franco et al., 2013). With a greater monitoring ability of the board of directors, management entrenchment becomes more difficult and excess compensation decreases. Furthermore, with a general commitment to an increased level of transparency in accounting information, the board of directors are able to provide efficient compensation contracts by assessing higher quality accounting information (Ozkan et al., 2012).

On the other hand, increased mandatory disclosure can be harmful to both executives and the firm (Hermalin and Weisbach, 2012). This is explained by the 'disclosure cost' hypothesis that more mandated disclosures may impose higher levels of risk on managers as a result of the shareholder and public scrutiny of ex-

ecutive pay. Facing such risk, managers would seek increased compensation and participate in inefficient contracts in order to reduce the extent of consequences from additional scrutiny (e.g., less job security) (Lo, 2003). As a result of these contradicting perspectives, the overall changes in compensation contracts after the introduction of mandatory disclosure requirements is an empirical question. This implies that more research needs to be done in order to investigate the role of disclosure regulation in contracting arrangements.

Regardless of the competing views in the literature, the recent tendencies in legislation seem to be toward increased compensation disclosure and more shareholder oversight over executive compensation, which follows from the criticisms of the current structure of executive compensation (see Bebchuk and Fried, 2004). For example, the EU commission has recently proposed introducing a mandatory 'say on pay'[4]. This proposal requires all companies listed in Europe's stock exchanges to provide a clear remuneration policy discussion, which includes details of executive pay and the link between management pay and long-term firm performance and submit it for a binding shareholder vote. Due to the considerable attention on executive compensation from the public, media, and policy makers, it is important to provide more evidence on executive compensation particularly after recent regulations. The second essay of this thesis contributes to this debate by providing evidence on the effects of mandatory requirements for transparency of executive compensation as well as the effects of the shareholder vote on executive compensation policies.

3.3 Interaction between financial accounting information and governance mechanisms

In previous sections, the role of accounting information and disclosure in facilitating governance and contract mechanisms was discussed. It was also explained that the role that financial reporting plays in this regard depends on other governance mechanisms, which also address information asymmetry between contracting parties. In this respect, an important aim of financial accounting information is to provide high quality information when defining contracts. In compensation

[4]European Commission - IP/14/396 09/04/2014: European Commission proposes strengthening shareholder engagement and introducing a "say on pay", *see* `http://europa.eu/rapid/press-release\_IP-14-396\_en.htm`.

contracts, for example, accounting earnings play an important role in defining bonus plans; and therefore, motivating managers to enhance the performance of a firm.

As discussed in the previous section, the boards of directors also rely on publicly disclosed financial reporting as a primary source of information in evaluating compensation contracts, as financial reports are subject to regulatory enforcement. However, even under the framework of regulated accounting standards, managers have discretion to exercise judgment in accounting choices. This means that *ex-ante* performance measures that are defined in compensation contracts may lead to a self-serving management behavior, when they distort accounts in order to obtain their own desired benefits. In this respect, contracts are not only a solution to the agency problem, instead they could be considered a source of the agency problem. Therefore, even with the presence of regulated accounting information, firm governance mechanisms are critical for improving the credibility of accounting information. Accordingly, accounting research in this area has also examined how various governance aspects of firms can limit the manager's self-serving behavior with respect to accounting choices to improve financial reporting quality (e.g., Kim et al., 2014; Klein, 2002; Peasnell et al., 2005; Wang, 2006).

Klein (2002) studied the relationship between board characteristics and earnings management and found that board independence has a negative impact on abnormal accruals (a proxy for earnings management). In a similar paper, Xie et al. (2003) studied the background of directors in the audit committee. They argued that independent directors in audit committees can limit earnings management due to their incentives to monitor financial reports. The general conclusion of these papers is that the boards of directors, as the representatives of shareholders, play an important role in monitoring the quality of financial statements, as an important source of communication with outside shareholders.

Furthermore, there is some evidence that firms with controlling shareholders, such as family owners, are different with respect to the demand or supply of earnings quality. Wang (2006) found that founding family ownership is associated with higher earnings quality. This indicates that family owners contribute to the financial reporting quality, which is explained by the ability of these controlling shareholders to discipline and control management (based on the alignment hypothesis). However, as noted by Wang (2006), this positive association can also be related to the demand from outside shareholders in the market, given that they

require more transparent financial reports in firms where controlling shareholders are able to expropriate outside shareholder wealth owing to the extent of their control (based on the entrenchment hypothesis). In a study by Ali et al. (2007), the direct ability of family owners for controlling and monitoring management behavior is found to be associated with higher quality of accounting earnings. However, this study also indicates that family firms with dual-class shares face another agency problem due to the potential entrenchment effect of family owners, which affects the disclosure practices of firms.

The main point here is that the monitoring effect of governance mechanisms depends on the heterogeneity of monitoring problems in firms as well as the existence of alternative monitoring mechanisms. For example, the monitoring ability of the boards of directors replaces costly alternative governance mechanisms, including incentive plans (e.g Cohen et al., 2013; Dicks, 2012). Still, given that information asymmetries between independent board members and corporate insiders limit the function of the board of directors, country-level regulation may be needed to impose a higher transparency and disclosure in firms as a complementary monitoring mechanism. In this relationship, information transparency is a key aspect indicating the extent of agency problems in firms as well as supporting the mechanisms to solve these problems (Armstrong et al., 2010).

To summarize, how financial reporting facilitates efficient contracting among various parties comprises an important body of the accounting and corporate governance research (Armstrong et al., 2010). In particular, the accounting research in this area investigates the relationship between corporate governance characteristics of firms (i.e., the board structure and ownership structure) and the quality of financial reports. On the one hand, a large body of research considers the role of financial reporting in designing and monitoring contracts. In particular, financial information plays an important role in reducing information asymmetries that exist in governance contracts between managers, boards of directors, and outside shareholders (Armstrong et al., 2010). On the other hand, extant accounting research also examines the importance of other monitoring mechanisms in enhancing the quality of financial information. This latter view concerns both country-level legal systems[5] and company-level governance mechanisms as being

[5]There has recently been more emphasis on country governance policies that enable the enforcement of accounting rules. For example, based on EU regulation (No. 1606/2002), European countries that have adopted IFRS since 2005 are required to ensure compliance of these policies as

important in improving the financial reporting quality. Whereas the effect of legal systems is exogenous to the firms, the effect of inner corporate control systems (e.g., monitoring of the owners and the boards) is more complex given that firm governance structures and firm accounting procedures are both endogenous and are more likely to be interrelated[6].

4 THE INSTITUTIONAL AND REGULATORY SETTING IN SWEDEN

In section 1.2, I briefly explained the implications of studying Sweden and the governance structures of this setting, which shares features with many other countries, particularly within Europe. In this section, I provide a more detailed description of the Swedish setting in order to give a clear picture of these common characteristics. First, a general background of the Swedish market and the regulatory setting of Sweden is reviewed. This is followed by an overview of my licentiate thesis (Samani, 2012) as the main source of data and ideas for my PhD thesis. In the licentiate thesis, there is an empirical investigation of a Swedish sample of hand-collected data with a focus on the relationship between ownership structure, board structure, and executive compensation. These findings of the licentiate thesis are briefly described in this section.

4.1 The regulatory setting of Sweden

The Stockholm Stock Exchange (SSE) is one of Europe's largest stock markets, relative to the size of the economy (Högfeldt, 2005). There is a relatively high transparency and media coverage in Sweden, which assists the development of the Swedish stock market (Carlsson, 2007; Randøy et al., 2009). Although a large

well (Brown et al., 2014; Christensen et al., 2013; Leuz, 2010).

[6]For example, it is not clear whether or not the higher quality earnings are used as a complementary mechanism to specific features of corporate governance or as a substitute for those. In particular, an important question is whether the lack of transparency is due to the controlling power of large shareholders or related to the conflicts of interests between controlling shareholders and minority shareholders and a way in which controlling shareholders can expropriate outside shareholders. Furthermore, the positive relation between corporate transparency and the independent board of directors is well-documented in recent research, but the direction of causality is unclear. In particular, whether the boards of directors in this respect increase the quality of financial reporting by their monitoring or if, instead, the information demands of boards lead to a higher quality of financial reporting needs to be explored in future research (Armstrong et al., 2014).

number of people in Sweden hold shares in companies, the majority of publicly listed firms in the Swedish market are held by major founding families (Carlsson, 2007). The ownership structures of firms in Sweden are typically concentrated. Furthermore, control enhancing mechanisms, such as dual-class shares and pyramidal ownership structures are commonly used among Swedish firms. Even though the ownership structures of firms in Sweden are different from the much-studied firms in Anglo-Saxon markets, they represent features that are familiar in many settings outside the US and the UK (see La Porta et al., 1999).

While the use of dual-class shares and pyramid ownership structures are frequent among Swedish firms, the high level of law enforcement, tax rules, and anti-corruption indices may counteract weak minority protection (Holmén and Högfeldt, 2009; Zerni et al., 2010). Listed firms are required to follow several requirements for enhancing the transparency and corporate governance of firms. These requirements, in part, are based on the focus of regulatory bodies in increasing the stock market scrutiny and additional concerns with respect to the value of minority shareholders (Cronqvist and Nilsson, 2003). Here, some major changes in requirements for improved transparency and corporate governance in Swedish listed firms are presented.

In the late 1980s, a standard setting body for accounting in Swedish listed firms was formed, known as *Redovisningsrådet* or the Swedish Financial Accounting Standards Council (SFASC). This standard setting body followed the basis of standards issued by the International Accounting Standards Committee (IASC) with a focus on equity investor interests (Hellman, 2011a). This orientation toward the needs of capital markets and, at the same time, a close connection between practice and regulation were among the main features of SFASC. The Swedish accounting practices gradually developed toward the IAS regulation, and during 1991-2004 almost all of the IFRS were adopted by the SFASC. Still, the nature of these accounting standards were more of "comply or explain" recommendations meaning that there were deviations from the original IFRS when necessary due to Swedish legal requirements (Hellman, 2011b, p.62). Furthermore, despite the gradual implementation of IASs in Sweden, the year 2005 commenced with the introduction or amendment of several new accounting standards[7]. Therefore,

[7]Examples of accounting standards that have been effective since 2005 include: IAS 1 (Presentation of Financial Statements), IAS 2 (Inventories), IAS 16 (Property, Plant and Equipment), IAS 17 (Leases), IFRS 2 (Share-based Payment), and IFRS 4 (Insurance Contracts).

one can argue that several major changes, with respect to new accounting treatments as well as increased disclosure of accounts happened in Sweden with the EU adoption of IFRS.

In January 2005, with the mandatory adoption of IFRS by the European Union (EU)[8], Swedish listed firms changed their local accounting principles (SFASC) to IFRS. One main objective of the adoption of IFRS in Europe was to increase the transparency and comparability of European financial reporting (Brüggemann et al., 2013). Mandatory application of IFRS in Sweden, since 2005, has been followed by more detailed disclosure requirements for different accounts. However, even though compliance with IFRS was required by SSE and monitored by auditors, there was no strong enforcement in accounting practices until 2007. The Swedish Financial Supervisory Authority, SFSA (*Finansinspektionen*), has the main responsibility of enforcing compliance with accounting standards starting in July 2007. Hence, in Sweden the effects of the introduction of IFRS and the changes in enforcement can be observed at different points in time (Christensen et al., 2013, p.150).

In addition to a significant change in the preparation and presentation of financial reports, according to IFRS, listed firms in Europe have increasingly been facing harmonized regulation and recommendations from the EU with respect to corporate governance improvements. In light of the recommendations of the European Commission in 2004 and 2005[9] regarding the improvement of corporate governance and transparency of remuneration of directors, European countries started or amended their corporate governance codes, in order to provide better corporate governance practices. The EU recommendation in 2004 promotes an appropriate regime for remuneration of directors of listed firms and the recommendations in 2005 deals mainly with the structure of the board of directors and the role of non-executive or supervisory directors of listed companies (Croci et al., 2012; Fernandes et al., 2013).

The Swedish Code of Corporate Governance was introduced in 2005 and is to be followed by all listed firms in SSE. The Code was revised in 2008 and again in

[8]European Union regulation No. 1606/2002 (the IAS Regulation).

[9]European Commission 2004. Recommendations on fostering an appropriate regime for the remuneration of directors, [2004] OJ L385/55.
European Commission. 2005. Recommendations on the role of independent non-executive or supervisory directors, [2005] OJ L52/51.

2010. There are several recommendations in the Code with respect to the structure of the board of directors in Swedish listed firms. In particular, it is stated that a majority of the board members must be independent of the company and its management, and the CEO cannot be the chair of the board (i.e., rejecting the idea of CEO duality). Furthermore, at least two directors that are independent of the company and its management should also be independent of the company's major shareholders. In practice, the board structure of Swedish listed firms is quite independent with respect to executives, following the requirements of the Code. On the other hand, it is common to have the largest shareholders and their representatives as board members or often also as the chairperson.

The latest Code (in 2010) has more focus on executive compensation plans. For instance, the importance of having an independent remuneration committee in the board of directors of listed companies is promoted. There is also more focus on providing information regarding outstanding shares and share-price related incentive schemes in the corporate governance report. In general, a key feature of the Code is that it is based on the "comply or explain" idea suggesting that firms can decide not to follow the Code but instead explain the reasons for that non-compliance.

In addition to the Code, the Swedish Annual Accounts Act (*Årsredovisningslagen, ÅRL*) and the Company Act (*Aktiebolagslagen, ABL*) provide requirements with respect to executive compensation practices. The former requires companies to disclose the total amount of remuneration to directors and CEOs. Furthermore, it requires separately specifying different components of CEO remuneration including salaries, other benefits, bonuses and similar compensation, social costs, and pension costs. The latter provides several guidelines for remuneration of senior executives of listed companies. In particular, the boards of listed firms are required to annually prepare proposals and guidelines for salary and other remuneration to the CEO and other senior executives. In this proposal, the nature of compensation to senior executives and the conditions under which it is enforceable should be specified. The guidelines shall cover the period from the next annual general meeting (AGM), and any deviations with the previous proposal and the corresponding reasons should also be disclosed. An important feature of these guidelines is that they are monitored by auditors. According to the Company Act, firm auditors shall – no later than three weeks before the AGM – provide a written, signed statement to the board of directors as to whether or not the guidelines of the

last AGM have been followed. Moreover, these guidelines are subject to shareholder vote. In fact, the Company Act, in effect since 2006, introduced mandatory requirements for a binding shareholders vote on executive compensation or "say on pay".

The Swedish Companies Act also provides a framework for the corporate governance of listed firms in Sweden and part of this Act deals with the structure of the board. One explicit feature of the board structure in Sweden is related to the presence of employee representatives on the board. Supported by the laws of co-determination (*Medbestämmandelagen, MBL*) and board participation (*Lag om Styrelserepresentation, LSA*), employee representatives have the rights to participate on the board and have a say on company policies and decision-making. Accordingly, two to three employee representatives, depending on the size of the company[10], can be part of the board of directors. While it is not required in some countries, such as the US and the UK, the employee participation right is a common feature of several European countries (Vitols, 2010). Sweden promotes employee participation rights, which are mainly embedded in the political structure and influence of a major party, Social Democrats, with a strong focus on employee rights (Randøy and Nielsen, 2002).

The above mentioned features of the Swedish setting, while very much different from Anglo-American markets, are similar to many other countries around the world. First, the ownership structures of firms are characterized by concentrated ownership structures, family controlling owners, and the common use of excess control rights (e.g., dual-class shares and pyramids). With respect to the structure of a board of directors, employees have the right to nominate their representatives as members of the board of directors. Furthermore, following the recommendations from the Code, other than the CEO, executives cannot be part of the board. On the other hand, in many firms the largest owners or their representatives have a considerable participation. A potential downside of Swedish corporate governance is the risk of expropriation of minority shareholder interests in Swedish firms (Hellman, 2011a). These characteristics provide a suitable setting for an empirical investigation on the role of governance mechanisms in firms where there are potential conflicts of interests between controlling shareholders and minority

[10]In companies with at least 25 employees, employees shall be entitled to two board members (representatives) and one supplement for each such member. In companies with an average of at least 1000 employees, employees are entitled to select three board members and one supplement for each such member. (SFS:1987:1245).

shareholders.

4.2 The licentiate thesis

The study in Samani (2012) investigates how the monitoring and controlling ability of the largest owners and the board of directors affect CEO compensation. Considering the agency theory, this study investigates the extent of agency problems in firms, depending on specific firm and governance characteristics and how this is related to the level and the structure of compensation plans in Sweden.

In order to identify the extent of information asymmetry and subsequent agency problems, the firm ownership structure is an important factor. The institutional setting in Sweden, related to the ownership structure of the firms, has provided motivation to conduct a study to examine the effect of ownership structures on executive compensation. Hereafter, the main features of ownership structure in Swedish firms which are gathered and studied in the licentiate thesis as well as the follow up PhD thesis are presented.

Table 2 presents the corporate ownership structures of listed firms in Sweden during the years 2005 to 2009 (a total of 1164 firm-year observations). As shown in this table, the capital shares (voting shares) held by the largest shareholders are around 24% (33%), on average. This indicates the ownership structure of firms in Sweden is concentrated. In addition, the deviation of voting rights from cash-flow rights is, on average, around 9%. Furthermore, almost 48% of Swedish firms have dual-class shares with voting rights in excess of cash-flow rights. Around 82% (41%) of Swedish firms have the first (second) largest shareholder holding at least 10% of the capital shares.

The majority of Swedish firms (more than half) have family owners as the largest shareholders, who hold around 26% of capital rights and 38% of voting rights, on average. In addition, a higher percentage of family firms compared to non-family firms have dual-class shares. Collectively, these numbers reflect the concentrated ownership structure of firms, the large influence of the largest shareholders (particularly family owners), and the frequent use of dual-class shares in firms in the Swedish market.

Table 2. Corporate Ownership in Sweden

	Whole sample	Family-owned
First largest (capital shares)	24%	26%
First largest (voting shares)	33%	38%
DVR	9%	12%
Dual	48%	61%
First largest	82%	85%
Second largest	41%	47%
Total #N	1164	735

Note:
The characteristics of the ownership structure of Swedish firms include: the percentage of shares, held by the *First largest* shareholder; *DVR*, the deviation between voting rights and cash-flow rights of the largest shareholder; *Dual*, the percentage of the Swedish firms in the sample that use dual-class shares; and the percentage of firms with *First and Second largest* shareholders (holding at least 10% of shares). The whole sample consists of 1164 firm-year observations (all listed firms in the SSE over the years 2005 to 2009, excluding banks and foreign companies. Family-owned firms are those that have family spheres as the largest owners.

In Table 3, the influential family spheres that have control over several large corporations in Sweden are shown. The term "spheres" captures the overall networks of ownership through both direct ownership and ultimate ownership. Family owners often hold shares in the firm, not only through direct ownership, but also through one or more intermediate entities such as foundations, limited corporations, investment entities, etc. of which the ultimate owner holds a large share (see Fristedt and Sundqvist, 2003). This is mostly recognized through the pyramidal ownership structure where family owners are at the top of pyramids, a holding company in the middle, and portfolio firms at the bottom (Holmén and Högfeldt, 2009, p.133). For instance, the Wallenberg family has a large control of several firms through holding 'Investor AB', which is an investment company founded by this family. Several large companies in Sweden (e.g., Atlas Copoco, Electrolux, and SAAB) are indirectly controlled by the Wallenberg family sphere through Investor AB.

The findings in Samani (2012) indicate that the direct controlling and monitoring ability of the largest owners mitigates the agency cost and, therefore, has a negative effect on the level of cash compensation as well as the use of incentive compensation for CEOs. However, there is evidence for higher compensation of CEOs in firms with controlling shareholders that hold excess voting rights than cash-flow rights. More precisely, as the divergence between voting rights and

Table 3. Family owners in Sweden

Companies	***Controlling family spheres***	**Voting rights %**	**Capital rights %**
INVESTOR	*Wallenberg*	48,8%	23%
ELECTROLUX		28,8 %	13%
ATLAS COPCO		22,7 %	16,7 %
SKF		28,9 %	10,2 %
SAAB		44,2 %	28,7 %
HUSQVARNA		28,8 %	15,6 %
INVESTMENT KINNEVIK	*Stenbeck*	31,2 %	12%
TELE2		58,9 %	30,8 %
MODERN TIMES GROUP(MTG)		72,3 %	22,3 %
ASSA ABLOY	*Douglas*	29,8 %	9,7 %
SECURITAS		30%	11,6 %
NOBIA		10,6 %	10,6 %
LUNDBERGFÖRETAGEN	*Lundbergs*	89,5 %	53%
HOLMEN		52,7 %	28,7 %
HUFVUDSTADEN		88,4 %	45%
RATOS	*Söderberg*	73.40%	36%
HENNES & MAURITZ (H&M)	*Persson*	72,5 %	43,5 %
HEXAGON AB	*Schörling*	49,7 %	29%
MELKER SCHÖRLING AB		86%	86%
TRELLEBORG AB	*Dunker*	55,7 %	13,5 %
WALLENSTAM	*Wallenstam*	69,7 %	43,1 %
GETINGE AB	*Bennet*	48,8 %	18%
NCC	*Ax:son Johnson*	51%	23%

Note:
The controlling family owner of the top listed companies in terms of total assets (higher than 10,000 MSEK) at the end of 2009. *source,* Samani, N. (2012). Executive Compensation – The Role of Largest Owners and Board of Directors in Sweden. (licentiate thesis), Gothenburg: University of Gothenburg.

cash-flow rights (DVR) becomes larger, CEOs receive higher compensation. This, in particular, is observed in family firms with DVR where it is more common to exercise control enhancing mechanisms.

While in the licentiate thesis, the evidence on higher compensation of CEOs in firms with DVR is of interest, it is not completely clear whether the raise in CEO pay is related to an increase in performance (accounting- or market-based). As noted above, two competing hypotheses can be identified in the area of executive compensation and corporate governance. First, there is the optimal contracting perspective, which concerns the role of compensation contracts in minimizing agency problems in firms, ensuring that manager interests are aligned with those

of shareholders. On the other hand, there is the managerial power approach, which argues that managers have influence over the board of directors which distorts optimal compensation contracts. In the first essay of this PhD thesis, the relation between pay and performance is examined to determine whether this increase is explained as part of optimal contracts or whether this indicates the influence of corporate insiders in designing inefficient compensation plans for executives. In addition, family firms with family-related CEOs and family firms with outside family CEOs are examined separately with respect to the pay-performance relation.

Furthermore, as discussed in Samani (2012, p.68), "concurrent debate and discussion in respect to the disclosure of executive compensation plans brings enough motivation for more closely researching different elements of disclosure. In fact, disclosure of compensation plans differs extensively among different countries based on the rules and regulations of those countries. The main issue of concern for disclosure, is related to the relevance and transparency of disclosure [...]". In respect to this issue, in the second essay of this thesis, the recent reforms in Sweden with respect to accounting and corporate governance are reviewed and the changes in pay-performance relation before and after the regulations are examined.

Finally, given that there has been increasing attention paid to the importance of independent boards of directors, the licentiate study examined the structure of the board of directors and how various board elements affect CEO compensation. However, the results of the effect of the boards and the board independence are inconclusive. In the third essay of the follow up PhD thesis, the effects of employee representatives on the monitoring role of the boards in designing compensation contracts and limiting the possible opportunistic behavior of managers for distorting financial reports are examined.

5 THE ESSAYS

5.1 Essay 1: CEO compensation, corporate governance and family owners in Sweden

The high levels of executive compensation and lack of a strong pay-performance relation have been debated in academia as well as in business communities. Referring to agency theory, information asymmetries among managers, boards, and owners create a demand for monitoring mechanisms in order to mitigate agency problems. Researchers in this respect argue that lower direct monitoring, in the form of either the ownership structure or the board structure, is associated with greater incentive compensation for executives. However, despite a large stream of research on executive compensation and corporate governance, there has not been much research on CEO compensation of firms with controlling shareholders that hold differentiated voting rights (DVR). Importantly, in firms with dual-class shares and pyramidal ownership structures, controlling shareholders bear only a small fraction of a company's cost. Therefore, they may decide for inefficient, high compensation contracts for CEOs. In these firms, due to the deviation of economic incentives of the largest owners (based on cash-flow rights) from their voting power (based on voting rights), an agency problem arises due to the conflicts of interests between corporate insiders and minority shareholders.

Evidence from prior research indicates that this type of agency problem can also have a negative influence on firm value (e.g., Claessens et al., 2002; Renders and Gaeremynck, 2012; Villalonga and Amit, 2006). The negative valuation effect is explained by the expropriation behavior of controlling owners and corporate insiders to extract private benefits at the expense of minority shareholders. However, there is not much evidence on how monitoring mechanisms, including performance-based compensation, can resolve this type of agency problem. In this paper, I examine the role of incentive compensation and the relation between executive pay and firm performance as an optimal contract in these firms. Executive compensation is investigated in this study since it can be used either as a solution to the agency problem or, alternatively, as a source of the agency problem if remuneration plans are designed inefficiently.

This paper builds on a Swedish sample of hand-collected data where I empirically examine the pay-performance relation of firms with controlling shareholders, holding a larger percentage of voting rights than cash-flow rights. In particular, the focus is on compensation practices of CEOs in family-controlled firms, given that multiple voting rights are often held by individuals and family owners. Specifically, in family firms the incentives of the controlling family owners for monitoring the management pay are expected to mitigate the agency problem between managers and shareholders, which is identified under the *alignment effect* of family owners. Alternatively, the excess control rights by controlling family owners may result in an expropriation of firm value for the benefit of family members. In particular, in family firms where CEOs are part of the family sphere, it is likely that compensation plans are used inefficiently to the benefit of family-member CEOs and at the expense of outside shareholders. This latter view is identified as the family owner *entrenchment effect*. Accordingly, these two effects are further distinguished within family firms depending on whether family owners hold a large DVR and also whether the CEO of the firm is part of the family owners.

The findings of this study provide evidence for differences in agency problems in family firms with different combinations of DVR and CEO positions. In firms with family controlling owners, results indicate that the classic agency cost due to the conflicts of interest between managers and shareholders is mitigated and thus CEOs are provided with less performance-based compensation. Furthermore, evidence shows that family-related CEOs receive lower levels of compensation, which goes against the entrenchment hypothesis. However, as DVR increases in family firms, CEOs receive higher performance-based compensation, suggesting that incentive compensation plans are used as an alternative mechanism for solving the potential agency problem resulting from conflicts of interests between controlling and minority shareholders. With respect to CEO position in family firms with (high) DVR, the compensation of professional outside CEOs is strongly linked to the performance of the firms, suggesting that outside family CEOs – relative to family-related CEOs – are under more scrutiny of family owners and the board of directors, and hence they receive their pay based on an increase in performance.

5.2 Essay 2: The effect of regulatory reforms on the pay-performance relation

How recent changes in accounting and corporate governance regulations affect the pay-performance relation is the main focus of this paper. Specifically, this paper examines the implication of increased disclosure and governance regulations for improving the executive compensation plans and contributes to the literature that investigates the effect of regulatory reforms on compensation decisions. Previous studies have investigated the effect of new requirements for increased disclosure on CEO compensation practice and pay-performance sensitivity (e.g., Clarkson et al., 2011; De Franco et al., 2013; Laksmana, 2008; Laksmana et al., 2012; Wang, 2010). The findings of previous research suggest that a higher quality disclosure and transparency improves the CEO compensation practices and pay-performance relation, owing to an improved performance evaluation of managers and less noise in performance measures. However, it is still not clear whether the recent regulations for mandatory disclosure of compensation lead to a better practice of compensation plans. This is mainly because more mandated disclosures may lead to additional risks to executives and, therefore, result in higher compensation for executives (Hermalin and Weisbach, 2012).

In this paper, the change in CEO compensation and the pay-performance relation following the adoption of IFRS in 2005 is first examined. Second, the effects of compensation disclosure requirements according to recent corporate governance regulations in Sweden are investigated. Notably, the requirements for increased disclosure on CEO compensation in Sweden have been changed from a *soft* adoption of "comply or explain" requirements to more binding rules with mandatory implications in recent years. Third, the effect of the binding "say on pay" requirement in Sweden (in effect since 2006) is investigated in this paper. Currently, there is a discussion as to whether mandatory engagement of shareholders on the CEO compensation decision should be welcomed in the European context. While proponents of say on pay argue that the larger involvement of shareholders on executive pay decisions enhance the monitoring role of the boards and efficiency of these contracts, the opponents believe that the introduction of these plans will be either immaterial or, in the worst case scenario, costly, resulting in sub-optimal contracts (Ferri and Maber, 2013). Therefore, the effect of a mandatory say on pay requirement on the pay-performance sensitivity can add to our understanding

of the potential costs or benefits of this recent reform in regulation.

Furthermore, the relationship between CEO compensation and requirements for say on pay is examined in Swedish listed firms that are mostly characterized by concentrated ownership structures. Prior research indicates that control and monitoring through corporate governance mechanisms are important factors determining the compensation contracts. How firms with controlling owners respond to the recent compensation requirements is the focus of this paper. Specifically, due to the conflicts of interest between large and small shareholders, in particular in firms with dual-class shares, it is also likely that these firms increase pay-performance sensitivity, as an alternative monitoring mechanism.

In general, considering the central aim of recent regulations for increasing the transparency of accounts and governance, this study examines the role of regulations in alleviating information asymmetry and improving the effectiveness of monitoring executives and their compensation plans. The findings indicate that the IFRS adoption and corporate governance requirements with respect to mandatory compensation disclosures have significant effects on CEO compensation practices and the pay-performance sensitivity. Furthermore, in firms with dual-class shares, pay-performance sensitivity is higher when the principles of executive remuneration are presented to shareholders (subject to a binding vote). This suggests that in firms with higher monitoring costs, incentive compensation is used as an alternative mechanism and the requirement of say on pay enhances the efficiency of these contracts as being strongly linked to the firm performance.

5.3 Essay 3: The sheep watching the shepherd: The monitoring performance of the boards with employee representatives

The monitoring role of the board of directors and, specifically, the composition of the boards for enabling this role have been the focus of a large body of research (see Adams et al., 2010; Hermalin and Weisbach, 2003). In this respect, a question is how diversified boards, particularly with the attendance of employees on the boards, engage in monitoring actions and corporate policies. In this study, we examine the role of employee representatives on the boards through studying a sample of Swedish firms where employee representatives have the right to be part of the board of directors.

With respect to codeterminantion, i.e. the influence exercised by employees on corporate decision-making, previous research has mostly focused on the effect of unions on the financial and strategic decision-making of firms. Evidence from previous research in this area indicates that managers of firms with strong unions may participate in some sort of accounting flexibility (i.e., managing earnings downward and providing less disclosure) in order to strengthen their negotiation power over the unions (see Bova et al., 2014). The underlying argument is that in these firms the negotiations between management and unions give an incentive to managers to manipulate the accounts and withhold important information, which can be costly for shareholders. However, in this study we investigate the effect of codetermination through involvement of employee representatives on the boards, who are expected to enhance the monitoring performance of the boards. This is because employee representatives invest their human capital in firms and they are also independent of the CEO.

This paper investigates the monitoring performance of the boards with employee participation by taking into account two aspects. First, we assess whether board decisions with respect to executive compensation vary, depending on the presence of employee representatives. Furthermore, we focus on the financial reporting quality by examining the earnings quality in firms with employee representatives on the boards. Based on Swedish law, in firms with a minimum of 25 employees, employees have the right to elect their representatives to the boards. Still, boards of directors of several listed firms lack any employee representatives. Therefore, we also control for the potential sample selection bias, considering firm and corporate governance factors in determining the likelihood of employee representatives sitting on the board of directors.

Based on the findings of this paper, in firms with employee representatives on the boards, the earnings quality is significantly higher, suggesting an efficient monitoring performance of the boards in limiting earnings management. These results are robust to using alternative measures of earnings quality and controlling for selection bias in the data. With respect to executive compensation, the findings indicate that the impact of employee representatives on the boards is limited to the structure of executive compensation. Specifically, equity-based compensation is less likely to be provided for the CEOs in these firms. This paper contributes to previous research, by examining an important feature of the boards, in many firms, which has hardly been considered in the accounting and the corporate governance

literature. The presence of employee representatives on the board of directors gives us the opportunity to examine the effect of different types of stakeholders on the board of directors. This is also interesting due to the interaction of different actors, i.e., CEOs, large owners, and employee representatives, on the boards of directors.

5.4 Discussion and future research

Throughout the introduction chapter, the focus was on the contracting role of accounting and how that is related to monitoring mechanisms in firms. The essays in this thesis focus on this interaction and provide evidence on the effects of accounting performance and disclosure in improving contracting arrangements as well as the potential role of governance mechanisms in improving the quality of financial reports. In the following section, the main implications of the essays and ideas for future research are provided.

5.4.1 Theoretical and practical implications

Essay 1 examines the contracting role of accounting in firms with concentrated ownership structures. The analyses indicate that a strong link between accounting performance and executive pay is used in these firms with a different type of agency problem. While it is expected that concentrated ownership structures and the incentives of family owners lessen agency costs, the dominant use of control rights by family owners (i.e., firms with dual-class shares) has been found to be associated with higher CEO performance-based compensation. Accordingly, the board of directors evaluate the executive compensation and provide performance-based compensation to motivate managers to act in the best interest of shareholders. In family firms, the link between pay and performance becomes stronger as the divergence between voting rights and cash-flow rights increases. This suggests that in family firms more incentive compensation is used to mitigate the potential expropriation. Hence, consistent with the optimal contracting theory, larger performance-based compensation is used in family dual-class firms in order to mitigate agency problems.

Essay 2 also considers the use of the pay-performance relation as an optimal contract but specifically examines the role of regulations, which aim to improve com-

pensation contracts. Recently, research has focused on the role of regulation and increased disclosure in improving governance and contract mechanisms. In particular, country-level legal systems can enhance monitoring mechanisms by providing greater enforcement. With respect to disclosure, the findings of this essay indicate that there is an improved pay-performance relation after the introduction of mandatory requirements for more transparency and increased compensation disclosure. Furthermore, the mandatory rule of say on pay is used as a governance mechanism in firms with monitoring problems. Specifically, in firms with dual-class shares, the need for alternative governance mechanisms, such as incentive compensation, is greater and the regulation for additional shareholder oversight (i.e., through say on pay) facilitates the implementation of these contracts for monitoring management.

Essay 3 focuses on the role of employee representatives in company-level governance and how this improves accounting as well as corporate decisions. The presence of employee representatives on the board of directors and their contribution to monitoring financial reporting and CEO compensation is the main focus of this essay. Given that compensation contracts are presumably designed to align the interests of managers and shareholders, the role of employee members, in this respect, is less pronounced. However, results indicate that in firms where employee representatives participate on the boards, CEOs are less likely to receive equity incentive plans. With respect to financial reporting, the literature has recently focused on how internal governance of firms enhances the quality of financial reporting. This paper addresses this question by providing evidence on the role of employee representatives in enhancing the monitoring performance of the boards. Information asymmetries between managers and board members are the main limitation that triggers the monitoring role of the boards. Accordingly, having more insights from inside firms through employee representatives enhances the board's ability for monitoring managers and limiting management opportunistic behavior in distorting accounts.

Table 4 presents the main questions of the essays and the implications of the results. The integration of these three studies provides conceptual and theoretical implications for the two primary research issues of this thesis: how accounting is used in contractual settings, and how various monitoring mechanisms interact with this role.

Table 4. Overview and Implications of the Essays

Essays	Research issues	Implications
Essay 1	Differences in the pay-performance relation across firms with different types of ownership structure.	Higher performance-based compensation in firms with greater agency problems due to the conflicts of interest between majority and minority shareholders.
Essay 2	A change in the pay-performance relation with introduction of new accounting and corporate governance requirements.	A significant increase in the pay-performance relation with an improved transparency, and with the introduction of say on pay in firms with agency problems.
Essay 3	The role of employee representatives on the boards for monitoring CEO compensation and financial reporting.	Less probability of providing CEOs with equity-based compensation and the limited earnings management behavior in firms with employee representations on the boards.

Regarding the first issue, the essays examine the use of accounting performance in CEO compensation contracts. The general conclusion is that accounting performance based compensation is used as an alternative monitoring mechanism in firms where there are greater agency problems. The evidence for the use of optimal contracts in firms with dual-class shares indicates that, due to the excess voting rights in firms, agency problems arise and CEOs receive higher performance-based compensation. Furthermore, with an improved transparency due to the changes in accounting standards, the link between accounting performance and CEO compensation becomes stronger. This indicates that the quality of accounting numbers have important implications in contractual arrangements.

With respect to the second research issue, the essays examine the role that governance mechanisms play in enhancing the quality of financial reports and the contracting role of accounting in designing an efficient compensation contract. The results indicate that governance regulations and the mandatory compensation disclosures enhance the efficiency of compensation contracts and the pay-performance relation. Furthermore, the monitoring performance of the board of

directors and specifically the role of employee representatives in this respect is found to be important in improving the earnings quality of firms. Overall, the essays show that governance mechanisms may complement or substitute for each other, depending on the extent of the monitoring problems in firms.

Even though the Swedish setting is examined in the essays, this thesis is also relevant to a wider context, particularly in Europe. Specifically, this thesis covers several issues that are currently at the center of attention in Europe. Regulatory approaches to corporate governance in Europe have been subject to considerable changes in recent years. Executive compensation and transparency of such contracts have been the focus of several regulatory reforms. In addition, minority shareholder protection has become an increasing concern in the EU policy debate. Therefore, the efficiency of governance practices and compensation contracts in the European setting, which is characterized by a concentrated ownership structure and the large influence of controlling owners, is important to be investigated.

The findings of the essays offer some policy implications. The results of Essay 1 provide evidence for the pay-performance relation and the use of incentive compensation in a concentrated setting, such as in Sweden. This highlights the role of compensation contracts for mitigating agency problems. By linking CEO compensation to accounting performance measures, incentive compensation is used in family firms with dual-class shares, in which it is likely to have conflicts of interests between corporate insiders and minority shareholders.

Furthermore, higher disclosure and more shareholder engagement on compensation decisions are other issues of concern, given that these practices may impose extra costs on firms. Essay 2 contributes to the current debate in Europe about introducing a mandatory say on pay. This is related to dual-class firms where it is expected that these requirements contribute more and provide some protection for minority shareholders against potential expropriation. The results of Essay 2 indicate that in dual-class firms the board of directors evaluates the CEO compensation and strengthens the pay-performance relation after recent regulatory emphasis on mandatory say on pay.

Finally, knowing that the board structure of firms in Europe also includes stakeholders other than owners, such as employee representatives, it is important to understand the influence of these actors in corporate policies and particularly in the monitoring of management. The overall conclusion of Essay 3 is that these

members do have an impact on the monitoring role of boards, in particular, to oversee the financial reporting process and curb earnings management behavior.

5.4.2 Limitations and future research

Empirical analysis, using the sample of listed firms in the SSE, is used in all essays. Availability of high quality data in Sweden and the possibility to hand-collect this data limit the potential measurement errors in the variables used in different models. In addition, the multivariate analysis of the essays includes a set of control variables in several models that are motivated by theories in extant research. However, throughout this thesis the endogeneity problem constitutes the main limitation of the essays to interpret the analyses. As mentioned above, the firm's accounting methods as well as the governance structure of the firms are both endogenous (are affected by some underlying decision factors), and that is mainly why they are also interrelated.

In dealing with this main problem, several alternative methods in sensitivity analysis were used, according to the current econometrics literature. A main source of endogeneity is correlated omitted variables problem. Having access to panel data has provided the opportunity to use the fixed effect regression models, which are useful in removing omitted variables that do not vary over time (e.g., unobservable firm factors). More precisely, those unobservable variables that do not change over time are dropped due to the underlying specifications of this model. However, this also introduces the main limitation of a fixed effect model, in which the variables of models that have no or very small variation over time are removed. This is usually the case for corporate governance variables (e.g., ownership structures and board structures) that do not have enough variation to be identified in fixed effect models.

Endogeneity can have several causes, bias in the sample selection process being another important cause. In particular, in specifying a dependent variable or in sub-sample analyses this problem may arise due to the effect of some unobservable factors in defining the outcome variable of interest. Two commonly-used methods, matched sample design and Heckman's selection model, are used in the additional analyses of the essays in order to limit the potential endogeneity problem in the model specifications.

While instrumental variables are recognized as the fundamental solution to the endogeneity problem, the choice of a relevant and exogenous instrument has been a major challenge for researchers. Larcker and Rusticus (2010) have an exclusive focus on the use of instrumental variable analysis in accounting research. As they state, two important problems that cause endogeneity, including omitted variable problems and simultaneity, are common in accounting research (e.g., earnings management, corporate governance, auditing, executive compensation, and disclosure). As discussed by these authors, the main issue and challenge for researchers in using the instrumental variable (IV) approach is to find a "good" instrument, which is highly correlated with the endogenous variable, but completely exogenous with respect to the outcome variable. However, not meeting any of these conditions introduces further problems and biases in the main specifications. In future research the use of relevant instruments will definitely benefit this research.

Based on the empirical results of the essays in this thesis, several suggestions for future research are provided. First, with respect to the interrelation between financial reporting quality and corporate governance, important issues still remain regarding the demand and/or supply of high quality accounting information. For example, in the third paper, findings indicate that earnings quality is higher in firms with employee representatives on the board. Despite this positive association, it is not explicitly clear whether this is due to the direct impact of the boards in monitoring the supply of financial reports or due to the demand from outside shareholders for higher quality financial reports in firms with employee board participation. Future research may address this issue and provide more clear directions on the causality of this relationship.

Second, this thesis focuses on the corporate governance features in Sweden. Future research might consider the differences in corporate governance to a larger extent (e.g., across countries in Europe) and examine the implication of these differences on financial reporting of firms. Future research may explore whether firms follow consistent financial and disclosure policies facing different country- and firm-level governance. Furthermore, it is important to distinguish between voluntary and mandatory governance requirements and examine how they affect the accounting choices in firms.

Third, this thesis focuses on CEO cash compensation and the use of accounting performance measures in designing compensation contracts. However, CEO

equity-based compensation needs to be investigated in future research. Equity-based compensation is a complex area which requires additional disclosures in the financial reports according to IFRS 2. However, firms in Sweden tend to have inadequate information about the measurement and valuation of CEO option and stock programs. Recently, there have been increased requirements from the EU commission about higher transparency and shareholder approval of executive equity incentive plans. Given the focus of EU regulation as well as an increasing trend for using equity incentive plans for managers, future research may investigate the determinants as well as the transparency of these plans.

Lastly, future research should also consider a broader definition of corporate governance and examine the effect of various contracting parties on firm accounting choices. In particular, considering the influence of large shareholders and the 'stakeholder' governance model in the majority of EU countries, future research could develop the role of corporate governance by investigating the agency relationships among a wider range of actors – including managers, large and small shareholders, employees, board members, regulators, auditors, and creditors.

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Part II

Essay 1

CEO Compensation, Corporate Governance and Family Owners in Sweden

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Abstract

This paper examines the agency problem in family controlled firms and firms that have a greater use of dual-class shares with a divergence between voting rights and cash-flow rights. In particular, in these firms, an agency problem arises due to the conflicts of interest between majority and minority shareholders. Using a sample of firms listed on the Stockholm Stock Exchange, I empirically examine how the agency problems of family firms with dual-class shares affect the extent and mix of CEO pay. The findings of this study provide evidence of the use of performance-based compensation as an alternative governance mechanism in mitigating agency costs in family firms that have a considerable divergence between voting rights and cash-flow rights.

JEL classification: G3, M12, J33

Keywords: performance-based compensation, ownership structures, family firms, differentiated voting rights

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1 INTRODUCTION

Considerable variance in top executive compensation plans among different countries is the subject of ongoing research. In order to explain the substantial cross-country variation in CEO compensation, which consists of both the amount and type of pay, the firm ownership structure should be accounted for (Fernandes et al., 2013). Whereas firms in Anglo-Saxon markets are characterized by having dispersed ownership structures, many firms in other settings are more family-controlled (Barontini and Bozzi, 2011; Croci et al., 2012; Fernandes et al., 2013; La Porta et al., 1999), present higher ownership concentrations (Faccio and Lang, 2002), and provide excess control rights (Barontini and Bozzi, 2011; Claessens et al., 2002; Maury, 2006). However, despite a large stream of research on executive compensation, there has not been much research on CEO compensation of firms with controlling shareholders, particularly those that hold multiple voting rights.

Through using control enhancing mechanisms (i.e., dual-class shares, pyramids and cross-holding ownership structure[1]), the large shareholders[2] retain a substantial control of the firms, holding a larger percentage of voting rights than cash-flow rights. Prior research indicates that firms that are dominantly controlled by large owners are subject to a different type of agency problem. In particular, a main source of agency problems arises in firms with excess voting rights as a consequence of conflicts of interest between controlling owners and minority shareholders (Claessens et al., 2002; Masulis et al., 2009; Morck et al., 2005; Renders and Gaeremynck, 2012).

Divergence of voting rights and cash-flow rights, held by large shareholders, may induce management to only serve the interests of controlling shareholders – which

[1] Pyramids are control structures whereby a family owner, known as the ultimate owner, holds shares in the firm through one or more intermediate entities such as foundations, limited corporations, holdings, etc. of which the ultimate owner owns less than 100% (Villalonga and Amit, 2006). Pyramids thus allow a family with a given level of wealth to control corporate assets worth considerably more than direct ownership would permit. In contrast to pyramids, companies with cross-ownership structure are characterized by horizontal cross-holding of shares and their voting rights used to control a group rather than a single company or shareholder (Bebchuk et al., 2000, p.6).

[2] In different parts of this study, the terms 'large shareholders', 'controlling shareholders', and 'majority shareholders' are used interchangeably, as are 'small shareholders', 'non-controlling shareholders', and 'minority shareholders'.

may differ from the interests of small shareholders. As discussed by Masulis et al. (2009, p.1697), "[t]his divergence aggravates the agency conflicts between managers and shareholders, since insiders controlling disproportionally more voting rights than cash-flow rights bear a smaller proportion of the financial consequences of their decisions [...]". In these firms, the board of directors and corporate insiders may seek to establish efficient monitoring mechanisms in order to alleviate the negative consequences of expropriation (Zerni et al., 2010). Accordingly, it is expected that in firms with differentiated voting rights, CEO compensation is more tightly linked to performance of the firms as an effective governance mechanism to assure outside shareholders that their interests are protected.

In this study, I examine the use of CEO compensation as an optimal contract for mitigating the agency problems of firms with controlling owners that hold multiple voting rights. In particular, this study focuses on family owners, as the most prevalent type of controlling shareholders in many countries (see Croci et al., 2012; La Porta et al., 1999; Prencipe et al., 2014). Founding family owners that usually have concentrated ownership structure, undiversified portfolios and long investment horizons are expected to have greater incentives to monitor and discipline managers (Audretsch et al., 2013; Chen et al., 2013). The greater monitoring incentives of family owners have been examined in the finance and accounting literature and were found to be associated with better performance (Anderson and Reeb, 2003; Maury, 2006), higher earnings quality (Ali et al., 2007; Wang, 2006; Yang, 2010), and more voluntary disclosure (Chen et al., 2008). The incentives of controlling family owners for mitigating the agency conflicts between managers and shareholders are identified under the alignment effect (Ali et al., 2007).

Alternatively, family owners with a significant control of firms, may extract private benefits[3] at the expense of small shareholders and have a negative influence on corporate decision-making (La Porta et al., 1999; Morck et al., 2005). In particular, in family firms with the divergence of control rights and cash-flow ownership, the potential expropriation is greater (Shleifer and Vishny, 1997). Given that family owners are actively involved in managerial positions and with the board of

[3]Private benefits of control, as primarily discussed by Jensen and Meckling (1976), concerns both direct and indirect financial benefits. Indirect financial benefits include on-the-job consumption or shirking, and direct financial benefits are in the form of redirecting corporate assets into a personal account. Controlling also provides intangible benefits, like status, political influence, and power over people.

directors, they can exercise substantial control and expropriate other shareholders' wealth to the benefit of corporate insiders and, in particular, family-related CEOs. The conflicts of interest between controlling owners and minority shareholders and the expropriation act by family owners are recognized under the entrenchment effect (Claessens et al., 2002; Masulis et al., 2009; Morck et al., 2005; Zerni et al., 2010). In order to examine these two competing perspectives, i.e., the alignment effect and the entrenchment effect of family owners, recent family research emphasizes the importance of treating family firms as a heterogeneous group which faces different agency problems, depending on the level and types of family involvement (e.g., Ali et al., 2007; Chen et al., 2013; Michiels et al., 2013; Villalonga and Amit, 2006). Accordingly, this study separately examines the pay-performance relation in two groups of family firms with differentiated voting rights: (a) family firms with family-related CEOs and (b) family firms with outside family CEOs.

Using data on all firms listed on the Stockholm Stock Exchange (SSE), during the period of 2005-2009, provides a suitable setting for empirical analyses. As argued by Carlsson (2007), Sweden has a long history of differentiated voting rights (DVR), held by large controlling owners, and, in particular, by family spheres. For example, in 50% of the firms in the sample, most of which are family-controlled, dual-class shares are used. Family owners are also the dominant type of owners on the Swedish market (around 62% of firms in my sample) and hold on average 26% of cash-flow rights and 37% of voting rights. Hence, they have a substantial voting power, while holding only a small percentage of cash-flow rights of the firms.

The findings of this study provide evidence for the variation of pay-performance relation across family firms with different combinations of DVR and CEO positions. Consistent with the prediction, I find that an increasing divergence between voting rights and cash-flow rights is associated with stronger pay-performance relation. This result suggests that CEO incentive compensation is used as an alternative governance mechanism to mitigate the agency problems in firms with multiple voting rights. Specifically, using interaction terms between DVR and the accounting performance measure shows significant associations for high-DVR firms, suggesting that firms with a considerable divergence between voting rights and cash-flow rights provide CEOs with more performance-based compensation.

Furthermore, the analysis for exploring the differences of CEO compensation

within family firms indicates that family-related CEOs and founder CEOs receive lower cash compensation, compared to outside family CEOs. This result goes against the entrenchment hypothesis, in which it is predicted that family members who have management positions in firms extract private benefits in terms of higher compensation. However, both family-related CEOs and outside family CEOs within family firms receive higher compensation as DVR increases, indicating that both groups of family firms are subject to greater agency problems. Higher compensation of CEOs within family firms is, in particular, related to those having a large divergence between voting rights and cash-flow rights. Furthermore, in family firms with outside family CEOs, the link between pay and performance is stronger, suggesting that outside CEOs are more under the scrutiny of controlling shareholders and the board of directors in receiving their pay based on an increase in firm performance. These results indicate that the significant relation between pay and performance is not uniform across all family firms with DVR. Specifically, the pay-performance relation becomes stronger for those family firms that have non-family CEOs with high levels of DVR.

This paper contributes to the existing research on family ownership (e.g., Ali et al., 2007; Chen et al., 2013; Croci et al., 2012; Gomez-Mejia et al., 2003; McConaughy, 2000; Michiels et al., 2013; Villalonga and Amit, 2006) by providing evidence on the use of optimal contracts in family firms. Whereas the focus of the literature in this area is mostly on the financial or valuation consequences of the separation of control rights from cash-flow rights, the role of effective governance mechanisms that mitigate agency problems in firms with excess control rights has been less examined. This paper specifically examines the CEO compensation and provides evidence on the relation between pay and performance as an alternative governance mechanism in these firms. Furthermore, prior research in accounting has mostly distinguished between family and non-family firms rather than focusing on the differences among family firms (Prencipe et al., 2014). In this paper, I consider the differences among family firms with different combinations of DVR and CEO relationships. In general, this paper adds to the literature by investigating the level and structure of incentive compensation and the pay-performance relation in different types of family firms.

The remainder of this paper is organized as follows. Section 2 describes the institutional setting in Sweden. Section 3 presents a theoretical framework and the hypotheses of this study. Section 4 outlines the data collection procedure and

study sample. The main model and variables are presented in Section 5. The main results are explored in Section 6 and Section 7 expands further analyses. Finally, Section 8 concludes the paper.

2 THE INSTITUTIONAL CONTEXT IN SWEDEN

Swedish listed firms, even very large ones, have a concentrated ownership structure and usually take the form of family-owned companies and founder families. Family controlling owners often hold multiple voting rights or differentiated voting rights (DVR) through control enhancing mechanisms, such as dual-class shares and pyramidal ownership structure (Carlsson, 2007; Högfeldt, 2005; Holmén and Högfeldt, 2009; Overland, 2012). Carlsson (2007) describes the Swedish market as having a long history of using dual-class shares, which carry voting rights up to 10 times greater than that for ordinary shares. Controlling family spheres are usually identified in pyramid ownership structures, in which they control firms through an intermediate highly controlled firm (Holmén and Högfeldt, 2009). In addition to having a large control of many firms, family owners often present an active role as the members of management groups and the board of directors and hold key positions, such as CEO and Chairperson.

In fact, family owners with usually large voting rights have the possibility to gain a considerable control of many firms by holding only a low percentage of cash-flow rights. Hence, with a considerable influence of family spheres in financial as well as management control of firms, the issue of minority investor protection is critical in Sweden (Hellman, 2011; La Porta et al., 1999). The frequency of dual-class shares and pyramidal structure in Swedish companies has provoked a large debate and has led to more requirements for minority shareholder protection (Carlsson, 2007; Holmén and Högfeldt, 2009). As mentioned by Holmén and Högfeldt (2009) "controlling owners are subject to substantially more scrutiny in Sweden as accounting and judicial standards, tax compliance and enforcement, corruption indices and press freedom are among the very best in the world" (p. 134). Therefore, with a higher scrutiny and enforcement, one could expect that efficient monitoring mechanisms are established in firms with DVR in order to ensure minority shareholders that their interests in the firms are protected.

Given the importance of corporate governance in protecting minority sharehold-

ers' interest, the effectiveness of the boards of directors is also central in Sweden. The structure of the board of directors in Sweden has some main features, which differ from Anglo-Saxon corporate governance practice. Based on the Swedish Company Act[4] – as the major reference for framing the corporate governance of the Swedish firms – there is a clear-cut division of responsibilities for three main decision-making bodies, including the Annual General Meeting (AGM), the board of directors and the management team (Hellman, 2011). Although Sweden has a one-tier board structure, the supervision role of the boards of directors is completely separated from the operational role of executives. Above all, the nomination committee, which is almost entirely involved with the largest owners and their representatives, reviews the performance of the boards and nominates new board member candidates at the AGM (Carlsson, 2007).

Companies listed on the SSE are also required to follow the Code of Corporate Governance which was enacted in 2005[5]. According to the Code, the chair of the boards cannot be the CEO of the firm and, therefore, CEO duality is not allowed in Swedish listed firms. The Code also states that a majority of the members of the board must be independent of the company and its management. More precisely, the Code indicates that no more than one executive (who is usually the CEO) can sit on the board of directors. On the other hand, the board structure of listed companies is not limited with respect to including controlling shareholders (or their representatives) on the board, to the same degree. According to the Code, at least two directors that are independent in relation to the company and its management should also be independent in relation to the company's major shareholders. This implies that the majority of the board members can be the representatives of the major shareholders of the firms. Therefore, an important feature of Swedish corporate governance is related to the incidence of major owners and their representatives on the board, which can have a large influence over different decision-making policies, in particular, executive compensation matters.

[4] Aktiebolagslagen (ABL 2005:551-556)

[5] The Code has been revised twice since 2005: first, in 2008 and second, in 2010. A comparison between the latest Corporate Governance Code, in 2010, and the earlier one, in 2008, reveals that there is more emphasis on the important role of the remuneration committee in respect to executive compensation plans. This is in line with the recommendation of the EU Commission in 2009. In this recommendation, there is more emphasis on more transparency and disclosure on the executive compensation practices of the firms and the importance of a separate compensation committee on the board of directors of listed firms. (*For more information see* `http://www.corporategovernanceboard.se/`).

3 THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1 CEO compensation in firms with DVR

In the compensation literature, the conflicts of interest between managers and investors have received the most consideration. Due to the separation of ownership and control (Berle and Means, 1932), agency problems arise, which create a demand for monitoring self-interested risk-averse managers and aligning the interests of managers (agents) with those of shareholders (principals) (Jensen and Meckling, 1976). In the principal-agent framework, optimal contracting theory concerns the role of compensation plans in motivating executives for increasing shareholders' value, by linking the managers' pay to the firm's performance (Jensen and Murphy, 1990). Accordingly, the extent of CEO incentive pay is related to the magnitude of agency problems and monitoring difficulties in firms (Murphy, 1999).

The differences in firms' characteristics – such as size, growth opportunities, risk, and ownership structure – reflect upon the extent of information asymmetry and thereby agency costs in firms (Armstrong et al., 2010). Empirical research has provided evidence that the limited possibility to directly control managers inside the firms brings a need to determine CEO incentive compensation as an alternative governance mechanism (Beatty and Zajac, 1994; Skinner, 1993; Tosi Jr and Gomez-Mejia, 1989). In particular, in firms with dispersed ownership structure, shareholders may require management incentive compensation to motivate CEOs for increasing the shareholders' value (Core et al., 1999; Frye, 2004; Ke et al., 1999; Mehran, 1995). Alternatively, in firms with controlling shareholders, who hold a large percentage of firms' capital, it is expected that CEOs obtain less private benefits in terms of excess compensation, owing to the substantial economic incentives of controlling shareholders for monitoring managers (Core et al., 1999; Dyl, 1988). Evidence from previous research indicates that, due to the direct control of blockholders, agency costs related to monitoring management is mitigated and fewer incentive plans are needed in order to motivate managers to enhance the performance of the firms (Conyon and He, 2011; Core et al., 1999; Fernandes et al., 2013).

However, firms with large owners – in particular those that use control enhancing mechanisms with multiple voting rights – are also associated with agency

problems (La Porta et al., 1999). Control instruments such as dual-class shares and pyramidal structures allow large shareholders and corporate insiders to exercise control over corporations with having voting rights in excess of cash-flow rights. Therefore, the primary source of the agency problem arises in these firms as a result of conflicts of interest between controlling shareholders and minority shareholders (Cronqvist and Nilsson, 2003; Shleifer and Vishny, 1997).

Given that large owners represent their own interests, having greater control rights than cash-flow rights may lead corporate insiders to expropriate minority shareholders' wealth, for example by suboptimal investment and strategic decision-making (Claessens et al., 2002; Shleifer and Vishny, 1997). As argued by La Porta et al. (1999), "cash-flow ownership by the controlling shareholders mitigates this incentive for expropriation, but does not eliminate it" (p.511). In particular, by holding only a small fraction of cash-flow rights but a higher percentage of voting rights, controlling owners have lower incentives to monitor managers, but they ensure that their interests are served by managers. In other words, though these firms are not widely-held, control enhancing instruments permit the divergence of control and ownership and lead to agency problems similar to those of widely-held firms (La Porta et al., 1999; Morck et al., 2005).

Prior research provides evidence that the separation of voting rights from cash-flow rights has negative consequences on firm value (c.f. Claessens et al., 2002; Gompers et al., 2010; Masulis et al., 2009; Zerni et al., 2010). In particular, in the absence of well-established monitoring mechanisms, managers may only serve the interests of controlling shareholders and enjoy more private benefits. Hence, governance mechanisms are needed to prevent collusion between controlling shareholders and management. Consistent with the optimal contracting theory, it is expected that CEO compensation becomes more closely linked to firm performance in order to align the interests of management with the firm as a whole.

In order to clearly explore the use of CEO incentive compensation in firms with DVR, I empirically examine the relation between CEO pay and firm performance. Based on the optimal contracting theory, I expect to observe a stronger link between pay and performance, as the divergence between voting rights and cash-flow rights held by controlling shareholders increases. Given that the larger divergence between voting rights and cash-flow rights is associated with a greater agency problem in firms with controlling shareholders, I examine the higher lev-

els of DVR and investigate whether CEO compensation is used as an alternative governance mechanism to mitigate the agency costs and the monitoring problems in these firms. Accordingly, I predict that the agency problem increases as DVR becomes larger and, therefore, more performance-based compensation is used to alleviate the negative consequences of DVR.

H1. With an increase in DVR, CEO compensation becomes more performance-contingent.

3.2 CEO compensation within family firms

Family owners play a central role in the corporate governance of firms in many countries and, thus, they have been the subject of much research (e.g., Anderson and Reeb, 2003; Chen et al., 2013; Croci et al., 2012; Faccio and Lang, 2002; La Porta et al., 1999; Wang, 2006). In addition to a highly concentrated ownership structure of family-controlled firms, the involvement of family owners as being often in key management positions and on the board of directors is also significant (Bertrand and Schoar, 2006; Chua et al., 2009). Hence, one can expect that family owners have an important voice on how executives are compensated in family firms. In this section, I focus on the importance of assessing CEO compensation within family firms, given that CEO compensation can be considered either as a governance mechanism for aligning interests of managers with those of shareholders or as a source of entrenchment by family-related CEOs in terms of extracting private benefits.

For exploring the role of family owners and explaining differences of CEO compensation within family firms, there are two competing theories. On the one hand, due to the large control and the strong economic incentives of family owners, it is expected that the classic agency problem between managers and shareholders is mitigated. This hypothesis, which is often referred to as the *alignment effect* in the literature, presents the ability of family owners to directly monitor managers and minimize their rent extraction behavior (McConaughy, 2000). On the other hand, another agency problem may arise in family firms owing to the conflicts of interests between family owners and minority shareholders. This latter agency problem, which is identified as the *entrenchment effect* in the literature, concerns the misallocation of corporate resources to the benefits of family owners and at the expense of outside shareholders (Morck et al., 2005).

Owing to the complex agency relations within family firms, the extant literature on family firms focuses on different types of family firms in order to separate the alignment and the entrenchment effects (e.g., Ali et al., 2007; Amoako-Adu et al., 2011; Chen et al., 2013; Croci et al., 2012; Villalonga and Amit, 2006). Prior research shows that the extent of agency problems in family firms varies, in particular, depending on the use of control enhancing instruments (e.g., dual-class shares) and the CEO position in family firms. Ali et al. (2007) examined the agency problems in family and non-family firms, by comparing earnings quality and corporate disclosure practice of these firms. They argued that family firms face less severe agency problems due to the separation of ownership and management – 'Type 1' agency problem – since family owners have the ability and incentives to directly control management. However, they also suggest that family firms with dual-class shares face another agency problem due to the potential entrenchment effect of family owners – 'Type 2' agency problem.

Villalonga and Amit (2006) studied the impact of these different agency problems on firm value where family owners retain a large control. They found that firm value differs across different types of family firms, depending on the effect of family ownership, control and management. In particular, Villalonga and Amit (2006) suggested an importance of separating the effect of family ownership of cash-flow rights and ownership of voting rights in studying the alignment versus the entrenchment effect of family owners. Furthermore, in order to distinguish different types of agency problems in family firms, they focused on the management of family firms and found that the agency problem differs across family firms with different CEO positions (e.g., family firms with family-related CEOs and family firms with professional CEOs). Therefore, in examining the pay-performance relation in family firms, it is also important to take into account the differences within family firms with respect to ownership and CEO family involvement.

According to the alignment effect of family owners, it is expected that in family firms, the classic agency problem is alleviated and the need for investment in alternative monitoring mechanisms is mitigated (Chrisman et al., 2004; Prencipe et al., 2014). In particular, family-related CEOs have superior incentives for maximizing the firm's value as well as higher job security and non-pecuniary benefits from their positions, which can be considered substitutes for having incentive-based compensation (Gomez-Mejia et al., 2003; McConaughy, 2000). Furthermore, in family firms with outside professional CEOs, the higher incentives of

family owners to exercise control over CEOs can mitigate the CEO entrenchment in receiving excess pay (Anderson and Reeb, 2003; Gomez-Mejia et al., 2003; McConaughy, 2000). Accordingly, it is expected that in family firms – with either family CEOs or non-family CEOs – the classic principal-agent problem is mitigated, and therefore, less CEO incentive compensation is needed.

In family firms with control enhancing mechanisms, on the other hand, the simultaneous presence of divergence of interest problems and entrenchment problems is likely (Morck et al., 2005, p.685). This is because family owners that invest in a small percentage of firms' capital but have a much higher percentage of control rights, have the possibility to enjoy greater control of the firms without having sufficient economic incentives. Therefore, firstly, the Type 1 agency problem arises since family owners only hold a small percentage of cash-flow rights; secondly, the Type 2 agency problem arises because of the self-control problems of family owners and family-related managers in practicing private benefits of control. Hence, in family dual-class firms, compared to single-class firms, it is expected to observe incentive compensation with stronger pay-performance relation as an alternative governance mechanism.

The pay-performance relation within family firms may also differ depending on the relationship of CEOs with the controlling family owners (Michiels et al., 2013). According to the entrenchment hypothesis, a large power and control of founding family CEOs over the firms' board of directors can lead to a possibility of expropriation. For example, it is argued that family owners that have substantial control in firms expropriate the minority shareholders' value and to extract more private benefits for family-related managers (Bertrand and Schoar, 2006; Morck et al., 2005; Morck and Yeung, 2003). This implies that a primary source of the entrenchment problem can occur in firms where founder managers hold more voting rights than cash-flow rights and they use their voting power to receive more private benefits in the form of excess compensation. Another source of entrenchment occurs when family owners decide to benefit family-related CEOs by providing them with an inefficient incentive compensation plan (Barontini and Bozzi, 2011; Chua et al., 2009; Schulze et al., 2002). Chua et al. (2009) predicted that family managers are paid higher incentive pay than what non-family managers would receive with the same abilities. However, they argued that higher incentive pay to family CEOs is not used as a form of governance mechanism. Instead, incentive compensation is likely to be used in CEO family firms as more of a signal

of having professional management mechanisms (to outside shareholders, regulatory bodies and banks for example) (Michiels et al., 2013; Schulze et al., 2002). However, due to the potential altruism of family owners towards family-related CEOs or other private or noneconomic goals in this type of family firm, incentive compensation may not necessarily lead to an improved family manager's motive to enhance the performance of the firm.

Based on the above discussion, family firms with dual-class shares and pyramidal ownership structures have greater agency problems, compared to non-family firms. Therefore, I expect that more incentive compensation is used for both family CEO firms and outside family CEO firms with DVR, in order to align the interests of corporate insiders with those of outside shareholders. However, I also expect to observe a stronger pay-performance relationship in family firms with outside CEOs, given that they are monitored by family owners and the board of directors to a larger extent. For family CEOs, on the other hand, the link between pay and performance is expected to be less well-determined, taking into account the alternative motives that family-related CEOs have with respect to long-term performance and/or the potential altruism of family owners towards family-related CEOs.

H2a. With an increase in DVR, CEO compensation in family firms becomes more performance-contingent than nonfamily firms.

H2b. With an increase in DVR, CEO compensation in family firms with outside family CEOs becomes more performance-contingent than family firms with family CEOs.

4 MODEL SPECIFICATION AND VARIABLES

In estimating the relation between pay and performance, consistent with previous research (e.g., Capezio et al., 2011; Conyon and He, 2011; De Franco et al., 2013; Fernandes et al., 2013; Leone et al., 2006), I consider CEO cash compensation. The two most common types of cash compensation are annual salaries (the fixed component) and bonuses (the variable component). The dependent variable, CEO compensation ($Comp_{it}$), is used in different regression models as the natural logarithm of total cash compensation. In further analyses, I also consider the structure

or mix of compensation by using the ratio of bonus to total cash compensation (*Rbonus*) and the probability of using equity-based compensation ($Pr[EBC = 1]$), in order to specifically examine the extent of CEO incentive compensation. The models for measuring the impact of different factors on CEO cash compensation take into account the heterogeneity in firms by using the fixed effects panel data method[6]. An important advantage of this method is that it controls for unobserved firm fixed effects heterogeneity that may affect the relation between pay and performance. In particular, managerial quality and unobservable firm factors (e.g., corporate culture) are important features that can affect the pay-performance relation; therefore, using the fixed-effect method is helpful in controlling for these omitted variables[7].

With respect to the first hypothesis, I consider model 1 in which the relation between CEO pay performance of the firms with DVR is examined. $Performance_{it}$ in this model comprises an accounting performance ratio, return on assets (ROA_{it}), and a market performance measure, annual raw stock return ($RETURN_{it}$). In order to detect the effect of excess voting rights in firms, in line with previous research (Barontini and Bozzi, 2011; Claessens et al., 2002; Gompers et al., 2010; Villalonga and Amit, 2006; Zerni et al., 2010), I use a continuous variable (DVR_{it}), which measures the deviation of percentage of voting rights from the percentage of cash-flow rights, held by the largest owner. The coefficient of interest in this model is related to the interaction term $DVR_{it} * Performance_{it}$, indicating the pay-performance relation as DVR increases.

$$Comp_{it} = \alpha_0 + \alpha_1 Performance_{it} + \alpha_2 DVR_{it} + \alpha_3 DVR_{it} * Performance_{it} + \gamma' Control_{it} + \upsilon_{it} \quad (1)$$

Next, I examine the second hypothesis, where I consider the impact of different groups of family firms by using several dummy variables for different types of

[6]Using the Hausman test to compare OLS and random effect (RE) with panel data fixed effect specifications reject the hypothesis that unobserved factors are uncorrelated with the determinants of CEO cash compensation. Thus, I use the fixed effects models, which are appropriate for the research design of this study.

[7]A potential endogeneity problem is one of the critical issues identified in the corporate governance literature. One important source of endogeneity bias is the problem of omitted variables. In this respect, the main technique for addressing this problem is to use the panel data fixed effect (FE) method which takes into account the effect of unobserved firm characteristics on the results (Conyon and He, 2011).

family firms ($Family_{it}$). Firstly, I use a dummy variable, $FamilyOwner_{it}$, which takes the value of 1 if the largest owner of the company is either a family sphere or an individual person and zero otherwise[8]. I define a firm as a family firm if it is largely owned by a family sphere or an individual, holding at least 10% of voting shares[9]. Secondly, in order to capture the differences within family firms depending on the CEO position, I define two dummy variables. $FamilyCEO_{it}$ takes the value of 1 if the CEO is either the founder of the company or related (as a family member) to the family, which is the largest owner, and zero otherwise[10]. $OutsideFamilyCEO_{it}$ is equal to 1 for family firms with outside CEOs and zero otherwise. In different regression models, I use several interactions with these dummy variables to examine how the specific characteristics of family firms (i.e., with CEO-related family or outside professional CEO) affect the structure of CEO compensation and pay-performance relation.

$$\begin{aligned} Comp_{it} = {} & \beta_0 + \beta_1 Performance_{it} + \beta_2 DVR_{it} + \beta_3 DVR_{it} * Performance_{it} + \\ & \beta_4 Family_{it} + \beta_5 Family_{it} * Performance_{it} + \\ & \beta_6 DVR_{it} * Family_{it} * Performance_{it} + \\ & \gamma' Control_{it} + \epsilon_{it} \end{aligned} \tag{2}$$

Control, in the above models, stands for several firm and governance factors in order to control for possible effects of them on executive compensation. Firm factors – including firm size, growth opportunities and industry characteristics – continue to explain differences in executive compensation practices (Fernandes et al., 2013). Firm size, measured in this study by the natural logarithm of total assets ($LnTotalAssets$), is found in prior research to be significantly and positively correlated with compensation of CEOs. It is also expected that risky and R&D-

[8]It is also important to notice that the definition of family owner includes both direct owner and ultimate owner. More precisely, if the largest owner of a company is a corporation which is prominently controlled by a family or an individual, it is also identified as a family-owned company.

[9]The threshold of 10% voting rights for defining family firms is motivated by the fact that family owners usually hold a much higher percentage of voting rights than cash-flow rights, which means that they retain a large amount of control by holding a larger percentage of voting rights. However, in additional analyses (section 7), I also consider other definitions of family firms based on previous family research.

[10]In order to consider a CEO as being related to the dominant family owner, the family names and percentage of shares, held by CEO is matched to the name and share percentage of the largest owner.

intensive industries with more growth opportunities provide CEOs with higher performance-based compensation (Skinner, 1993). Hence, I control for this factor by including the ratio of R&D expenditures to total sales ($R\&DtoSALE$). Solvency ratio reflects upon the ability of the firms to meet their long-term obligations. Firm debt may be considered as a substitute monitoring device (see Jensen, 1986); therefor, having a larger solvency ratio (less total debt) is expected to be positively correlated with performance-based compensation. Characteristics of CEOs are also expected to affect executive compensation (Conyon and He, 2012; Hill and Phan, 1991). Therefore, I control for two variables of CEO tenure (the number of years that the CEO has worked for the firm) and CEO age and add them in the models. Finally, I control for the percentage of shares that is held by CEOs. The economic incentives of CEOs that hold a larger number of firm shares may be higher, and therefore, can affect their performance-based compensation (Conyon and He, 2004).

With respect to firm ownership structures, firstly, the percentage of cash-flow rights held by the largest owner ($CapitalLargest$) is controlled to control for the effect of a concentrated ownership structure. Furthermore, other controlling shareholders may also have incentives to directly control and monitor managers (Renders and Gaeremynck, 2012). In particular, other controlling shareholders may limit the private benefits and entrenchment effect of corporate insiders and protect the minority shareholders' interest (Anderson and Reeb, 2003; Croci et al., 2012). Hence, a dummy variable ($SecondLargest$) is used in the models, which is equal to 1 if a firm has a second largest owner (who is not part of the family sphere in family firms), holding more than 10% of capital, and zero otherwise.

The models also control for several board characteristics. According to the managerial power view, CEOs' negotiation power in determining their pay packages and the lack of independent directors are considered the main reasons for large payouts to CEOs (Bebchuk and Fried, 2004; Goergen and Renneboog, 2011). In order to examine the CEO power on the board, I control for the CEO participation on the board of directors ($CEOonBoard$)[11]. Furthermore, $BoardSize$, measured by the number of board members, is included. Larger boards are less likely to provide an effective monitoring performance and executives are more likely to have

[11] Given that in Sweden, according to the Code of Corporate Governance, CEOs cannot chair the boards, I add a dummy variable and consider whether CEOs, as ordinary members on the boards, can affect the mix and extent of their compensation packages.

control and power over large boards (Jensen, 1993; Yermack, 1996). Therefore, cash compensation of CEOs are expected to be positively related to the size of the boards (Banghøj et al., 2010; Conyon and He, 2012; Core et al., 1999).

A great involvement of large owners on the boards is a common feature of Swedish corporate governance. Earlier studies have mostly considered an independent board of directors as a board with fewer appointments of company's executives (Brown and Lee, 2010; Capezio et al., 2011; Core et al., 1999). However, a non-executive director that represents the largest shareholders of firms may not necessarily be an independent director (Conyon and He, 2012). Given that the Swedish Code of Corporate Governance requires firms to have only one executive on the board (who is usually the CEO), this study focuses on the influence of dependent members (*DependentMember*) with respect to the largest shareholders (as a percentage of board size). In addition, I examine the effect of the dependent chairperson (*DependentChair*) on CEO compensation by using a dummy variable which is equal to 1 if the chairperson is the largest owner and zero otherwise. Finally, due to the increasing approach towards having a separate compensation committee in Swedish firms, a dummy variable is added to the models (*Comp.Com*), with a value of 1 if there is a separate compensation committee on the board and zero otherwise. A general description of variables and their correlation matrix are presented in Appendix I and Appendix II, respectively.

5 SAMPLE AND DATA

All listed companies on the SSE are identified for the 5-year period (2005[12]-2009), and their annual reports are primarily used for collecting data. In order to obtain compensation data in the Swedish setting, there is no available database[13]. However, based on the Swedish Annual Accounts Act, the information of different types of compensation offered to a CEO must be disclosed separately. Therefore, cash components of CEO compensation (salary and bonus) were hand-collected

[12]This year has been considered as the initial year since IFRS and the first version of the Code of Corporate Governance in Sweden were introduced in 2005.

[13]The commonly used databases in compensation empirical studies, including ExecuComp or Capital IQ, have none or only a small number of Swedish companies and are, therefore, not applicable to an empirical investigation

from the annual reports of the companies[14]. Furthermore, the listed firms on the SSE follow the governance requirements provided by the Swedish Corporate Governance Code. These guidelines should be followed by the listed companies and disclosed indicating whether there have been deviations. Therefore, data related to the size and composition of the board of directors is available and hand-collected from annual reports and corporate governance reports. Information related to financial accounting data is obtained from Worldscope, and stock returns data comes from Datastream database.

Ownership data, related to the percentage of voting shares and cash-flow shares, held by the largest owner, is collected from an available database based on the "Owners and Power"[15] booklets. An important benefit of using this database is that share ownership of closely related owners (i.e., family members) is grouped into a single owner sphere, which gives a more accurate measure of control and ownership of the largest owners (Overland, 2012). Furthermore, by using these booklets, it is possible to track the ownership through control mechanisms, such as pyramids, and to separately identify direct owners, ultimate owners and, importantly, family spheres in the Swedish listed companies.

The initial sample consists of 1247 firm-year observations (listed firms on the SSE for the 5-year period). From this sample, some companies are excluded for different reasons. Firstly, non-Swedish companies are excluded because of missing data on ownership structure, based on the available database (*SIS Ägarservice*). Secondly, banks are excluded (total of 4 banks), since they are subject to restrictive governance regulations and higher scrutiny from the public and government. The final sample provides an unbalanced panel data, which includes 1164 firm-year observations[16]. Panel A, in Table 1, reports the sample composition and the

[14]For equity-based compensation, it is hard to build a complete database for the value of options and restricted stocks that CEOs receive as part of their incentive plans. This limitation owes to the lack of available information of stock and option plans, separately, for CEOs in the annual reports of most of the companies. Therefore, I have included a dummy variable based on whether or not CEOs are provided with any kind of equity-based compensation plans. Furthermore, while the information related to compensation of other executives (particularly if they are part of the family spheres) can benefit the empirical investigation of this study, such data does not exist. Specifically, the compensation of other executives together with the benefits that directors receive is disclosed in an aggregated level, which makes it difficult to identify the corresponding executive.

[15]Fristedt, D., Sundqvist, S.I., 2005-2009.Ownership and power in Sweden's listed companies, Stockholm, SIS Ägarservice.

[16]The numbers of observations in regression analyses are 1069 firm-year observations. This is because around 100 firm-year observations are dropped due to the missing values of variables

Table 1. Sample composition

Panel A. Sample composition		
1	Initial firm-year observations for years 2005-2009	1247
2	Less non-Swedish firms	-63
3	Less Banks	-20

Panel B. Distribution of observations by fiscal years and industry						
Year		2005	2006	2007	2008	2009	Total
Number of firms		228	238	238	234	226	**1164**
SIC Code	Industry Descriptions					N	%
10	Metal Mining					12	1.03
13	General Building Contractors					10	0.86
20	Food and Kindred Products					24	2.06
23	Apparel and Other Textile Products					15	1.29
24	Lumber and Wood Products					15	1.29
25	Furniture and Fixtures					17	1.46
26	Paper and Allied Products					30	2.58
27	Printing and Publishing					21	1.8
28	Chemicals and Allied Products					22	1.89
33	Primary Metal Industries					24	2.06
34	Fabricated Metal Products					30	2.58
35	Industrial Machinery And Equipment					90	7.73
36	Electronic & Other Electric Equipment					65	5.58
37	Transportation Equipment					40	3.44
38	Instruments and Related Products					80	6.87
39	Miscellaneous Manufacturing Industries					14	1.2
44	Water Transportation					14	1.2
48	Communication					31	2.66
49	Electric, gas, and sanitary services					10	0.86
50	Wholesale Trade-Durable Goods					31	2.66
51	Wholesale Trade-Nondurable Goods					7	0.6
56	Apparel and accessory stores					21	1.8
57	Furniture and Home furnishings Stores					15	1.29
62	Security and commodity brokers, dealers, exchangers					33	2.84
65	Real estate					84	7.22
67	Holding and other investment offices					51	4.38
73	Business Services					183	15.72
79	Amusement & Recreation Services					18	1.55
80	Health Services					8	0.69
87	Engineering & Management Services					69	5.93
	Others *					80	6.88
	Total					**1,164**	**100**

* The industries represented in this group include the two-digit SIC including 7, 8, 15, 16, 17, 21, 22, 29, 42, 45, 47, 52, 54, 55, 58, 64, 70, 82

excluded items from the initial sample of this study. In panel B of Table 1, the distribution of observations by fiscal years and the industry classification of firms (by primary two-digit SIC code) is presented.

6 EMPIRICAL RESULTS

6.1 Descriptive statistics

The descriptive statistics are presented in Table 2, which consists of different variables related to CEO compensation, corporate governance, and other control variables. CEOs of firms in the sample receive, on average, a yearly total cash compensation of around 4220 thousands SEK. However, due to the much higher compensation of some large companies in the sample (e.g., Ericsson, Volvo, and MTG), the median value of this variable is considerably smaller than the mean value of total cash payments, the standard deviation is large, and the distribution is severely skewed to the right. Hence, the natural logarithm of the CEO cash compensation (*LnTotalCashPay*) is used in the analyses with the mean (median) of 14.94 (14.88). Ratio of bonus to total cash payment is 0.16 at mean value (0.11 at median), suggesting that on average 16% of cash compensation of CEOs is related to performance-based bonus. The dummy variable *EBC* is 0.53 at the mean, which means that on average around 53% of the firm-year observations have CEO equity incentive plans (i.e., stock option plans and restricted stocks). The percentage of return on assets (*ROA*) has the mean (median) of 0.035 (0.069) and is winsorized at the 1st and 99th percentiles in order to control for the effect of some extreme values (or outliers) in the sample. Similarly, stock return (*RETURN*) is winsorized at the 1st and 99th percentiles, which has a mean (median) of 0.18 (0.11)[17].

The percentage of cash-flow rights, held by the largest owner, varies from 1.4% to 86%. The mean (median) of this variable is 24% (20.6%), which reflects upon the highly concentrated ownership structure of many Swedish firms. The percentage of voting rights varies from 2.1% to 93% with the mean (median) of 33% (28%).

collected from Datastream and Worldscope.

[17] In particular, for some variables that are collected from Worldscope and Datastream databases, there are some extreme values. Therefore, these variables are wisnorized for these extreme values in order to control for potential measurement bias.

Table 2. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	25%	Median	75%	Max
Total Cash Pay (KSEK)	4219.7	3949.76	0	1834.5	2894.5	4951.5	24692
LnTotalCashPay	14.94	0.786	12.38	14.42	14.88	15.42	17.02
Rbonus	0.164	0.1821	0	0	0.1185	0.292	0.94
EBC	0.534	0.499	0	0	1	1	1
ROA	0.035	0.173	-0.764	0.013	0.069	0.114	0.365
RETURN	0.188	0.64	-0.82	-0.25	0.11	0.49	2.88
TotalAssets (MSEK)	12373	34717	24	441	1419	6769	361239
LnTotalAsset	14.42	1.957	10.07	12.99	14.16	15.72	19.7
Solvency%	49.7	21.18	-48.08	34.2	46.76	64.07	99.29
R&DtoSale	0.124	0.58	0	0	0	0.022	4.80
VotingLargest	32.90	21.34	2.1	15.95	28.2	44.8	93
CapitalLargest	24.00	16.66	1.4	11.75	20.6	30	86
DVR	8.89	11.79	-7.2	0	0	17.25	50
FamilyOwner	0.62	0.485	0	0	1	1	1
FamilyCEO	0.123	0.328	0	0	0	0	1
Outsidefamily CEO	0.5	0.5	0	0	1	1	1
SecondLargest	0.406	0.491	0	0	0	1	1
BoardSize	7.371	2.18	3	6	7	9	13
CEOonBoard	0.564	0.496	0	0	1	1	1
DependentMembers%	23.04	15.09	0	14.28	22.22	33.33	80
Dependent Chair	0.44	0.496	0	0	0	1	1
Comp.Committee	0.685	0.464	0	0	1	1	1
CEO Age	49.27	7.06	30	44	49	55	66
CEO Tenure	5.82	6.46	0	1	4	8	37
CEO share%	4.07	10.06	0	0.02	0.19	1.58	47.53

Note:
Table 2 presents descriptive statistics of all the variables of this study. LnTotalCashPay is the natural logarithm of CEO cash compensation. RBonus is the percentage of bonus to total cash compensation of CEOs. EBC is a dummy variable with a value of 1 if the company provides equity-based compensation for CEOs and 0 otherwise. ROA is return on assets, used as an accounting performance measure (1% winsorized). RETURN is the yearly stock return, used as a market performance measure (1% winsorized). CapitalLargest, is the cash-flow share percentage of the largest owner. VotingLargest is the voting share percentage of the largest owner. DVR is the difference between the percentage of voting rights and cash-flow rights of the largest owner. FamilyOwner is a dummy variable equal to 1 if the largest owner of the company is a family sphere or an individual person and zero otherwise. CEOfamily is a dummy variable equal to 1 if the CEO of the firm is associated with the family owner (i.e., founder of the firm or a descendant) and zero otherwise. LnTotalAssets is the natural logarithm of company total assets (in millions) and a measure of size of the company. Solvency ratio is the percentage of shareholders' funds to total assets. R&DtoSale is the ratio of R&D expenses to total sale and measures the growth opportunities (1% winsorized). BoardSize is the number of directors on the board. Dependent Chair is a dummy variable equal to 1 if the chairperson is dependent to the largest owner of the firm and 0 otherwise. Dependent members the ratio of the dependent members (in relation to largest owners) to board size. CEOonBoard is a dummy variable with a value of 1 if CEO sits on the board and 0 otherwise. Comp.Committee is a dummy variable equal to 1 if the board has a separate compensation committee and 0 otherwise. CEO age is CEO's age in years. CEO tenure is the number of years the CEO has been at her/his position. CEOshare is the percentage of firm share, held by CEO (1% winsorized).

The subtraction of cash-flow rights from voting rights, defined as *DVR*, varies from -7.2%[18] to 50%. The mean of this variable is around 9%, indicating that on average the gap between voting rights and cash-flow rights is 9% in Swedish listed firms. Considering the dummy variables that indicate the family firm types, around 62% of firms in the sample have families as the largest owners, in which 12% have CEO as part of the family owners, and 50% have family owners with outside family CEOs. In addition, around 40% of the firm-year observations have a second largest owner holding at least 10% of shares.

Regarding the composition of the board of directors in Swedish listed firms, board size varies from 3 to 13 members, with an average of 7 members. Almost 68% of the boards, in the sample firms, comprise a separate compensation committee, and around 56% have CEOs involved on the boards. The percentage of dependent members, with respect to the largest owners, varies from 0 to 80%, with a mean (median) of 23% (22%). Furthermore, in 44% of firm year observations, the chairperson represents the largest owners. These values reflect a dominant influence of the largest owners on the board of directors. Finally, regarding firm factors, the natural logarithm of total assets is used as the measure of firm size which has a mean (median) of 14.42 (14.16). The solvency ratio has a mean (median) of 50% (47%), indicating that on average half of the capital structure of firms is related to shareholders' funds. *R&DtoSale*, winsorized at the 1st and 99th percentiles, has a mean (median) of 0.12 (0). On average, CEOs in the sample are 49 years old, have a tenure of almost 6 years, and hold 4% of the firm's shares.

Table 3 provides the results of a preliminary analysis on different groups of family firms. Panel A presents the mean differences of variables in two sub-samples of family firms and non-family firms. In Panel B, family firms are divided into two groups of family firms with family-related CEOs (family CEO) and family firms with outside CEOs (outside family CEO). The comparison between the mean values of variables for different groups reveals some remarks. In panel A, the mean value of total cash compensation, the average of ratio of bonus to total compensation, and the use of equity-based compensation are higher for CEOs in non-family

[18]More explanation about negative DVR value is important to be noted. In the models, DVR is defined as the higher voting rights of the largest owners over the cash-flow rights. However, in the data there were a few unusual cases, (10 observations in total) in which the separation of control from cash-flow ownership was negative. This may occur, for example, due to issuance of new equity (with lower voting power) which has abolished the former ultimate owner's control (Zerni et al., 2010).

Table 3. Descriptive statistics: Mean differences

Table 3. Panel A: Mean Differences of variables in Family firms and Non-family firms			
Variables	Mean (Family firms)	Mean (Non-family firms)	Difference (t-stat.)
LnTotalCashPay	14.85	15.07	-4.60***
RBonus	0.144	0.198	-4.98 ***
EBC	0.54	0.62	-2.51**
ROA	0.052	0.008	4.17 ***
RETURN	0.213	0.144	1.76*
LnTotalAssets	14.41	14.42	-0.04
Solvency	48.4	51.85	-2.69**
R&DtoSale	0.104	0.156	-1.47
Secondlargest	0.49	0.27	7.56***
VotingLargest	38.35	23.87	11.87***
CapitalLasrgest	26.7	19.54	7.25 ***
DVR	11.65	4.32	10.77***
BoardSize	7.34	7.44	0.8
CEOonBoard	0.622	0.468	5.21 ***
Dependent members	26.52	17.27	10.6 ***
Dependent Chair	0.55	0.25	10.38 ***
Comp.Com	0.66	0.72	-1.92*
CEOage	49.65	48.64	2.36**
CEOtenure	7.02	3.85	8.33 ***
CEOshare	5.52	1.60	6.40***
Nr (percentage)	726 (63.14)	438 (36.86)	
Panel B: Mean Differences of variables in Family CEO firms and Outside family CEO firms			
Variables	Mean (Family CEO)	Mean (Outside family CEO)	Difference (t-stat.)
LnTotalCashPay	14.29	14.99	-10.15***
RBonus	0.09	0.157	-4.25***
EBC	0.39	0.59	-4.24***
ROA	0.069	0.047	1.46
RETURN	0.25	0.187	1.15
LnTotalAssets	13.75	14.58	-4.97***
Solvency	54.97	46.8	4.33***
R&DtoSale	0.24	0.07	3.33***
Secondlargest	0.405	0.509	-2.23**
VotingLargest	47.147	36.2	5.66***
CapitalLasrgest	32.71	25.22	4.70***
DVR	14.44	10.97	2.99**
BoardSize	6.17	7.62	-7.43***
CEOonBoard	0.83	0.57	5.90***
Dependent members	22.15	27.6	-4.29***
Dependent Chair	0.22	0.63	-9.22***
Comp.Com	0.54	0.69	-3.41***
CEOage	50.87	49.35	2.29**
CEOtenure	13.47	5.43	13.65***
CEOshare	22.39	1.41	26.57***
Nr (percentage)	143 (19.67)	583(80.30)	

Note:
Panel A presents the mean differences of the variables of this study in two sub-samples of family firms and non-family firms. In Panel B family firms are divided to two sub-samples of family firms with family-related CEOs (family CEO) and family firms with outside CEOs (outside family CEO). Definition of different variables are provided in Table 2 as well as in Appendix 1. T-statistics is used to test the differences of mean values of variables in two sub-samples. Asterisks denote statistical significance at the 1 % (***), 5% (**) and 10% (*) level, respectively

companies, compared to family companies. Furthermore, the mean value of performance variables, in particular *ROA*, is higher in the family firm group.

Comparing the ownership structure variables including the cash-flow shares and voting shares, held by the largest owner, reveals that there are significant differences between the mean values of these factors in two sub-samples. Specifically, the mean values of cash-flow rights and voting rights of family owners are higher, compared to the largest owners in non-family firms (26.7 compared to 19.54, and 38.35 compared to 23.87, respectively). Similarly, *DVR* is much higher in family-owned firms, compared to non-family firms (11.65 compared to 4.32). These numbers indicate the prominent control of family owners by holding large percentages of cash-flow shares and even larger percentages of voting shares of the firms. Furthermore, the mean value of variable $Secondlargest$ is 49% in the family firms group but 27% in the non-family firms group, which shows that family firms are more likely to have other controlling shareholders.

The variables related to the board structure of firms also significantly differ between family firms and non-family firms. The presence of a dependent chair (with respect to the largest owners) is on average 55% in family firms which is almost two times greater than the mean value in the non-family firm group (25%). Furthermore, a larger fraction of boards in the family firm group is dependent on the controlling owners (26%), compared to the same variable in the non-family firm group (17%). CEOs sit on the boards of 62% of the family-firm group, whereas this percentage for non-family group is lower and equal to 47%. Finally, the averages of CEO tenure and CEO shareholding are much higher in the family firm group, which is mainly related to those having family-related CEOs (7 years compared to 4 years, and 5.5% compared to 1.6%, respectively).

In panel B, the mean comparison of the compensation practice of CEOs within family firms indicates that CEO compensation and particularly CEO incentive compensation (Rbonus and EBC) is greater for outside family CEOs in family firms. The average of voting rights and cash-flow rights in family CEO firms is higher, compared to the mean values in the outside family CEO group. The deviation of voting rights and cash-flow rights is also higher and around 15% in family CEO firms. The second largest owners are more likely to be in family firms with outside family CEOs. The attendance of CEOs on the boards of family CEO firms is substantial (83% compared to 57% in outside family firms). Family CEOs have longer tenures in family firms, compared to outside family CEOs and clearly

a much larger percentage of the firm's shares. The average tenure for family-related CEOs is 13 years, which is much higher than the outside family CEOs' tenure (5 years).

To recapitulate, unconditional bivariate analyses indicate that family and non-family firms differ significantly in compensation practices, board structure, and ownership structure. Furthermore, even within family firms, family CEOs and outside family CEOs have different attributes and, in particular, family-related CEOs have greater "power" in family firms. The compensation of outside CEOs is higher on average, compared to family CEOs, and is more differentiated for incentive compensation. These results reflect upon the major differences among different types of family firms and call for having more investigation on the compensation plans of CEOs within family firms. In the next section, the effect of the above mentioned factors on the compensation of CEOs is assessed in regression models, using several interactions.

6.2 CEO cash compensation

The empirical investigation on the pay-performance relation and the effects of variables on the CEO cash compensation is presented in Table 4. In this table, I report the results from fixed effect (FE) models. In all empirical models, I use clustered standard errors (by firms) and include year dummies in order to account for the error term's lack of independence across firms and years (Petersen, 2009; Thompson, 2011)[19].

Model 1 presents the initial specification, including all variables, without any interaction terms. For measuring the impact of firm performance on CEO cash pay, both market and accounting measures (stock return and ROA) are considered. Results in Table 4 show that both accounting and market performance measures are important factors determining CEO cash pay. The significant relation between stock return and CEO cash pay is consistent with the argument that CEO cash pay, and particularly salary, is determined by a competitive market for CEOs and, thus,

[19] In order to detect the possible within-time period correlation of residuals, I have compared different standard errors of different regressions, controlling for a firm and a time effect. As mentioned by (Thompson, 2011), one way to simultaneously handle firm and time effects is to use clustered standard errors and time dummies. In particular, in analysis of this study, regressors substantially vary by firms but not so much by time. Hence, I clustered the standard errors by firms and add time dummies in different regression models.

Table 4. CEO pay-performance relation (Hypothesis 1)

	Model 1		Model 2	
VARIABLES	Coeff.	(t-stat.)	Coeff.	(t-stat.)
ROA	0.278**	(2.332)	0.218	(1.511)
RETURN	0.048**	(2.012)	0.049*	(1.758)
DVR	-0.003	(-0.499)	-0.003	(-0.574)
DVR_ROA			0.009	(1.265)
DVR_RET			-0.0001	(-0.108)
LnTotalAssets	0.034	(0.612)	0.034	(0.608)
Solvency	0.001	(0.515)	0.001	(0.578)
RDtoSALE	0.015	(0.573)	0.011	(0.428)
CapitalLargest	-0.003	(-0.885)	-0.003	(-0.912)
Family owner	-0.179*	(-1.707)	-0.185*	(-1.776)
SecondLargest	-0.050	(-0.829)	-0.049	(-0.796)
Board size	0.032	(1.319)	0.032	(1.314)
CEO on board	-0.006	(-0.104)	-0.006	(-0.108)
Dependent members	0.004	(1.526)	0.004	(1.453)
Dependent Chair	-0.027	(-0.429)	-0.023	(-0.359)
Comp.Committee	-0.144	(-0.714)	-0.147	(-0.722)
CEO Age	0.002	(0.322)	0.002	(0.322)
CEO tenure	0.003	(0.507)	0.003	(0.501)
CEOshare	-0.009***	(-2.819)	-0.009***	(-2.774)
Observations (Nr. of id)	1,069 (248)		1,069 (248)	
R-sqd. (within)	0.126		0.127	

Note:
Table presents the results for the first model, using fixed effect analyses. Two performance measures are used in the above model: First, ROA as an accounting performance measure and, second, RETURN as a market performance measure. Model 1 presents the initial model (i.e. without interactions). In the second model, interaction terms are used to measure the relation of pay to performance in firms with differences between voting rights and cash-flow rights (DVR_ROA and DVR_RET). Variable definitions are the same, as in Table 2. All regressions contain a set of time dummies (for each year). In all models standard errors are clustered (by firm) and year dummies are included in regressions. Statistical significance levels are1% (***), 5% (**) and 10% (*).

highly linked to the firm performance as measured by stock return (Leone et al., 2006). Furthermore, ROA is positive and significant (at the 5% level), indicating that the profitability of the firms is an important factor in establishing CEO cash pay. In particular, given that bonus is the variable component of cash compensation, the direct link between cash pay and ROA indicates that accounting earnings are used in defining the pay-performance relation[20].

[20]As mentioned before, for outliers treatment, I winsorized these two variables in 1st and 99th percentiles. However, in order to assure that this treatment does not have a considerable effect in the main results, I have also redone the regressions with the base variable (without winsorising). The untabulated results are qualitatively similar to those provided in the tables, indicating no considerable change in the main interpretations.

In order to see whether DVR has any moderating impact on the performance-based compensation, in model 2, I use interactions between performance variables and DVR. The coefficient of the interaction term *DVR_ROA* indicates that the differences between different values of DVR on pay-performance relation are not statistically significant. However, for investigating the impact of DVR, certain values of DVR should be specified. I specify two levels of high DVR, defined as one standard deviation above the mean, and average value DVR. The marginal effects (and subsequent standard errors) of interaction terms between these levels of DVR and performance variables are calculated, respectively[21].

Firstly, I consider the average level of DVR, which is almost 9%. The marginal effect of this interaction is positive (ME = 0.305) and significant (at the 5% level). Secondly, high DVR is defined as one standard deviation above the mean value, which is around 21%. Prior research argues that the larger holdings of corporate insiders' voting rights lead to a greater possibility to extract private benefits (e.g., Stulz, 1988). Hence, an increased level of DVR with higher gap between voting rights and cash-flow rights is expected to be associated with higher agency problems. Results indicate that firms with high levels of DVR also have a strong pay-performance relation. In particular, in these firms, the marginal effect of the interaction between DVR and accounting performance, *DVR_ROA*, on CEO cash pay is high and significant (ME = 0.412, t= 3.31).

The overall results of Table 4 support the use of performance-based compensation in firms with DVR, as an alternative mechanism for monitoring management. The insignificant coefficients of the interactions between performance variables and DVR (β_{DVR_ROA} and β_{DVR_RET}) suggests that the use of performance-based compensation in these firms is not considerably higher than those without DVR (β_{ROA}). However, given that firms with DVR are often controlled by large owners, i.e., associated with concentrated control, the use of incentive compensation in

[21] In a model with interaction terms, the effect of an independent variable X on the outcome variable Y depends on the value of the moderating variable (see Brambor et al., 2006). Consider a simple following interactive model:

$$Y = \beta_0 + \beta 1X + \beta_2 Z + \beta_3 XZ + \epsilon$$

The marginal effect of X on Y when the condition Z is present is: $\frac{\delta Y}{\delta X} = \beta_1 + \beta_3 Z$

The correpondant standard error is: $\sqrt{Var(\hat{\beta_1}) + Z^2 Var(\hat{\beta_3}) + 2ZCov(\hat{\beta_1}, \hat{\beta_3})}$

these firms is still interesting. Even though firms with control enhancing mechanisms and, particularly, high DVR are largely under the influence of controlling shareholders, they are still subject to agency problems, due to the potential negative consequences of control enhancing mechanisms. Accordingly, through a strong link between CEO pay and accounting performance, the board of directors evaluates the CEO pay and establishes the performance-based compensation as a substitute governance mechanism to encourage CEOs to act on behalf of outside shareholders.

Control variables, particularly related to the corporate governance of firms, do not provide any significant coefficients. This can be due to the small or no variation of these variables over 5 years (when their effects are removed in fixed effect analyses) or indicating that unobserved heterogeneity captured in the firm level fixed-effects is also very important in variables, particularly related to corporate governance of firms (Conyon and He, 2012)[22].

Table 5 reports the results related to the second hypothesis, which concerns the CEO compensation and pay-performance relation within family firms. Similar to previous models, FE analyses are applied in regressions, in which standard errors are clustered (by firms) and year dummies are included. Specifically, in assessing the second hypothesis, I firstly consider the effect of *DVR* in the subsample of family firms, given that negative consequences of corporate control may be more pronounced in these firms. Furthermore, I use interactions between $Performance$[23], *DVR*, and different groups of family firms (depending on CEO position) and calculate the corresponding marginal effects (and correct standard errors) in order to examine the moderating impact of each group of family firms, separately. Panel A of Table 5 shows the regression models, and in panel B the marginal effects of interactions in the models are presented.

[22]The FE model is involved with a degree of limitation, owing to the fact that coefficients are only identified from within-firm changes, and time-invariant variables are removed in the FE model (Zhou, 2001). Given that some variables, particularly related to ownership structure or boards' structure, do not vary significantly from year to year, it is not expected to observe significant coefficients in the FE model. However, the variables of interests in this study are used mainly in interactions with other continuous variables which can control for this limitation.

[23]I only take into account the variable *ROA* since, based on previous research, the main variable components of CEO cash compensation, i.e., bonus contracts, are not explicitly dependent on how stock returns change across the firms (Murphy, 1999). Given that the dependent variable of analyses is total cash compensation, it is expected to perceive a strong relation between accounting performance, measured by ROA, and CEO cash pay (Leone et al., 2006).

Table 5. CEO pay-performance relation within family (Hypothesis 2)

Panel A: Regression Analyses						
	Model 1		Model 2		Model 3	
VARIABLES	Coeff.	(t-stat.)	Coeff.	(t-stat.)	Coeff	(t-stat.)
ROA	0.117	(0.868)	0.015	(0.086)	-0.065	(-0.403)
RETURN	0.073***	(2.770)	0.076***	(2.898)	0.080***	(3.008)
DVR	-0.003	(-0.601)	-0.004	(-0.679)	-0.004	(-0.743)
Family CEO	-0.498**	(-2.343)	-0.468**	(-2.164)	-0.655**	(-2.013)
FamilyCEO_ROA	0.239	(0.742)			0.626	(1.108)
DVR_ROA			0.014**	(2.107)	0.015**	(2.411)
FamilyCEO_DVR					0.008	(1.042)
FamilyCEO_DVR_ROA					-0.026	(-0.992)
LnTotalAssets	0.081	(1.005)	0.082	(0.996)	0.092	(1.108)
Solvency	0.0005	(0.247)	0.0005	(0.260)	0.001	(0.462)
RDtoSALE	0.079***	(2.699)	0.061**	(2.296)	0.055*	(1.894)
CapitalLargest	-0.002	(-0.488)	-0.002	(-0.587)	-0.001	(-0.369)
SecondLargest	-0.012	(-0.203)	-0.005	(-0.078)	-0.010	(-0.160)
Board size	0.054	(1.635)	0.054	(1.636)	0.055	(1.651)
CEO on board	0.014	(0.183)	0.010	(0.128)	0.009	(0.115)
Dependent members	0.006**	(2.021)	0.006*	(1.969)	0.006*	(1.953)
Dependent Chair	0.009	(0.121)	0.020	(0.277)	0.027	(0.354)
Comp.Committee	-0.234	(-1.161)	-0.245	(-1.213)	-0.244	(-1.203)
CEO Age	0.001	(0.114)	0.001	(0.109)	0.001	(0.103)
CEO tenure	0.014*	(1.731)	0.014*	(1.672)	0.013	(1.524)
CEOshare	-0.004	(-1.545)	-0.004	(-1.504)	-0.003	(-1.101)
Observations (Nr.id)	675 (165)		675 (165)		675 (165)	
R-sqd. (within)	0.165		0.167		0.173	
Panel B: Moderating effects of interaction variables on pay-performance relation						
	ME	(t-stat.)	ME	(t-stat.)	ME	(t-stat)
Family CEO	0.356	(1.13)				
Nonfamily CEO	0.117	(0.87)				
HighDVR in family firm			0.354**	(2.64)		
MeanDVR in family firm			0.180	(1.36)		
HighDVR and family CEO					0.301	(1.10)
HighDVR and Nonfamily CEO					0.302**	(2.18)
MeanDVR and family CEO					0.434	(1.47)
MeanDVR and Nonfamily CEO					0.115	(0.88)

Note:

Table 5 presents the pay-performance relation within family firms with different specifications. The first model considers the pay-performance relation of family firms with family-related CEOs (FamilyCEO_ROA). In the second model, the relation between pay-performance in family firms with DVR is examined (DVR_ROA). In model 3 the simultaneous effect of DVR and family CEOs on pay-performance relation is examined (FamilyCEO_DVR_ROA). The regression contains a set of time dummies in order to control for the years' effect. In all models standard errors are clustered (by firm). Statistical significance levels are 1% (***), 5% (**) and 10% (*). The variables are described in Table 2.

Model 1 presents a model in which the pay-performance relation within family firms with family CEOs and non-family CEOs is examined. The variable *FamilyCEO* exhibits a negative and significant coefficient (at the 5% level), indicating that family-related CEOs receive lower levels of compensation, compared to outside family CEOs. Consistent with the incentive alignment hypothesis, the superior incentives of founding family CEOs for maximizing firm value, as well as a higher job security of family CEOs, substitute for higher incentive compensation (Croci et al., 2012; Gomez-Mejia et al., 2003; McConaughy, 2000). Considering the moderating impact of family CEOs and outside family CEOs on pay-performance relation (in panel B), the results are not statistically significant. This implies that there is no significant differences between pay and performance within family firms (without DVR) with either a family CEO or outside family CEO position. This result indicates that family firms are less likely to provide performance-based compensation plans for their managers, particularly, due to having higher incentives (holing large numbers of shares) in directly monitoring managers (Ali et al., 2007).

Model 2 shows the regression results for pay-performance relation in family firms with DVR. In particular, although family firms with a great involvement of owners in management and ownership are expected to have the least agency costs, they are still subject to agency problems (Morck et al., 2005). The significant coefficient of the interaction between DVR and accounting performance, *DVR_ROA* indicates that family firms with DVR, compared to family firms without DVR, are more likely to compensate CEOs based on performance-based measures. Furthermore, considering the moderating impact of DVR on the pay-performance relation in family firms (in panel B), the results indicate that this effect is mainly related to those having a large gap between voting rights and cash-flow rights (around 24%).

In family firms with an average level of DVR (around 12%), however, the moderating effect of DVR on pay-performance relation is not significant. These findings suggest that in family firms, agency problems arise where there is a considerable divergence between voting rights and cash-flow rights. Higher levels of DVR suggest two scenarios. First, a large gap between voting rights and cash-flow rights can be due to a much lower cash-flow percentage, held by family owners. In this case, the Type 1 agency problem, similar to that of widely-held firms, arises due to the conflicts of interests between managers and shareholders. Second, high DVR can also be an indication of large control of family owners and potential conflicts

of interests between these owners and outside shareholders, which leads to the Type 2 agency problem. In either case, CEO compensation is strongly linked to firm performance in order to resolve the conflicts and align the interests of corporate insiders with those of outside shareholders.

Finally, in model 3, I examine whether the relation between pay and performance varies over family firms with different CEO positions and different combinations of DVR. In this model, a three way interaction between family CEO, DVR and firm performance ($FamilyCEO\_DVR\_ROA$) is used in order to separate the moderating impact of DVR on pay-performance relation of family CEO firms from family firms with outside CEOs (i.e., DVR_ROA). Specifically, in panel B (model 3), four different conditions in family firms are considered based on the level of DVR (i.e., average or high) and the position of the CEO (i.e., family CEO or outside family CEO). For family CEO firms, there is no significant impact of DVR on the pay-performance relation. On the other hand, in family firms with outside CEOs, a high level of DVR is associated with a significant link between pay and performance.

The results indicate that the increase in CEO cash pay, as DVR increases, is significantly linked to the performance of family firms when the CEO is an outside director. Furthermore, there is a significant moderating impact of DVR on the pay-performance relation in these firms when the DVR level is high. This suggests that in family firms with outside family CEOs, compensation is significantly dependent on accounting performance with an increase in DVR. In CEO family firms with DVR, on the other hand, the pay and performance link is not significant. This reflects upon different incentives that family CEOs may have with respect to the firms' goals. Whereas non-family CEOs have a more short-term focus and they are more under the scrutiny of owners and the board of directors, family-related CEOs have longer perspectives for firms' goals, and they are possibly secured by the altruism of family owners (Michiels et al., 2013; Schulze et al., 2002). In order to provide more investigation on the differences of executive incentive compensation and how it differs in different firms, in the next section, I specifically consider the use of performance-based compensation (i.e., bonus and equity-based compensation).

6.3 CEO incentive compensation

Table 6 presents the effect of variables on the ratio of bonus to total cash pay in the first model (based on the fixed effects model[24]) and the probability of equity-based compensation in the second model (based on a binary probit model). The interaction of DVR with family-related CEOs and outside family CEOs is used to distinguish the effect of each group on CEO incentive-based compensation. However, in this analysis I consider the whole sample in order to also compare the compensation practices of CEOs in family firms with CEOs in non-family firms. Specifically, in Table 6, *DVR* indicates the effect of DVR on CEO incentive compensation in non-family firms; the interaction term $FamilyCEO\_DVR$ shows the effect of DVR on CEO incentive compensation in family firms with family related-CEOs; and $NonfamilyCEO\_DVR$ specifies the DVR impact in family firms with outside family CEOs.

Results from this table provide some evidence that both family-related CEOs and outside family CEOs receive higher incentive compensation within family firms as the DVR increase. Consistent with previous results and predictions, incentive compensation is used in family firms where controlling family owners hold higher voting rights than cash-flow rights. In other words, due to the monitoring problems and larger agency costs in family firms with DVR, it is more likely to use bonus incentives and equity-based incentives as optimal contracts and governance mechanisms for reducing the conflicts of interest between corporate insiders and outside shareholders (Amoako-Adu et al., 2011).

Among control variables, firms with concentrated ownership structure are less likely to provide CEOs with variable compensation plans. According to agency theory in larger firms and firms with dispersed ownership structures, there is more information asymmetry and a further need for alternative monitoring mechanisms, including equity-based compensation for CEOs (Core and Guay, 1999; Hartzell

[24] In untabulated results, following (Jackson et al., 2008), I also estimate the equation of the bonus ratio using the tobit model. Bonus ratio, as is clear from the descriptive distribution, is left-censured at zero, meaning that the variable Rbonus includes many observations with zero value. However, I report the results from the fixed effect (FE) model, which controls for the effect of unobserved firm heterogeneity. The results are qualitatively similar to the results based on the FE model. In addition, based on tobit model results, family CEO and outside family CEO dummies have negative and significant coefficients, suggesting that in family firms without DVR, there is less proportion of bonus plans given the effective monitoring of CEOs in family firms and higher incentives of family owners.

and Starks, 2003; Mehran, 1995).

Table 6. Regression analyses of CEO incentive compensation

	Model 1 (Rbonus)		Model 2 (D_EBC)	
VARIABLES	FE	(t-stat.)	Probit (ME)	(z-value.)
ROA	0.186***	(2.999)	-0.181	(-1.547)
RETURN	0.025**	(2.238)	0.006	(0.250)
DVR	-0.016**	(-2.183)	-0.006	(-1.327)
Family CEO	-0.132	(-1.562)	-0.124	(-0.994)
Non-family CEO	-0.023	(-0.803)	-0.031	(-0.486)
FamilyCEO_DVR	0.015*	(1.942)	0.015**	(2.087)
NonfamilyCEO_DVR	0.015*	(1.910)	0.007	(1.563)
LnTotalAssets	0.014	(0.827)	0.041**	(2.204)
Solvency	-0.001	(-1.322)	-0.0009	(-0.755)
RDtoSALE	-0.025**	(-2.066)	0.122**	(2.358)
CapitalLargest	-0.002**	(-2.207)	-0.005***	(-3.134)
SecondLargest	0.026	(1.162)	-0.052	(-1.000)
Board size	-0.006	(-0.739)	-0.0001	(-0.007)
CEO on board	-0.005	(-0.154)	-0.065	(-1.203)
Dependent members	0.000	(0.422)	0.001	(0.790)
Dependent Chair	-0.025	(-1.136)	-0.053	(-1.015)
Comp.Committee	-0.025	(-0.213)	0.018	(0.293)
CEO age	-0.001	(-0.293)	-0.007**	(-2.048)
CEO tenure	0.001	(0.584)	-0.001**	(-2.105)
CEOshare	0.000	(0.036)	-0.001	(-0.530)
Observations (Nr. of id)	1,069 (248)		1,070	
R-sqd.(within)/ Pseudo R-sqd.	0.13		0.22	

Note:
Model 1 presents the effect of variables on ratio of bonus to total cash compensation, as the main dependent variable, based on fixed effect analyses. The second model is related to binary regression analysis (probit) on the probability of providing CEOs with any kind of equity incentive plans. The Marginal effects (Average Partial Effect) are presented for model 2 (Probit model). Two interaction terms are used in the models including: FamilyCEO_DVR which indicate the effect of DVR in family CEO firms on CEO incentive compensation; and NonfamilyCEO_DVR which specifies the effect of DVR on CEO incentive compensation of family firms with outside CEOs. Clustered standard errors (by firms) are used in regressions. A set of times dummies and industry dummies (for the probit model) are also included. Statistical significance levels are 1% (***), 5% (**) and 10% (*).

It is also interesting to observe the negative and significant impact of the variables CEO tenure and CEO age on CEO equity incentive probability, which indicate that risk-averse executives usually prefer to have an increase in their base salaries, instead of variable compensation packages (Hall and Liebman, 1998; Murphy, 1999).

7 Sensitivity tests and additional analyses

In this section, I conduct a series of additional sensitivity analyses in order to enhance the credibility of the results by taking into account the nature of the data, the applied variables, and different econometrics techniques. Accordingly, I first explore alternative proxies for the key variables of this study and apply them in regression analyses in order to investigate the credibility of the results. Next, I provide additional analyses using a matched sample design.

7.1 Alternative definition of family ownership and control

In general, it is difficult to observe a precise definition of family firms in the literature (Prencipe et al., 2014; Shanker and Astrachan, 1996; Stewart and Hitt, 2012). The definition of family owners in literature can be seen both as broad and narrow (Chua et al., 2009). For example, Shanker and Astrachan (1996) considered a broad definition of family controlled businesses in which family control is considered based on the strategic direction and decisions of the firms. The most commonly used approach in defining family firms is based on the percentage of shares held by family owners, although there are different approaches on the level of thresholds (i.e., 5%, 10% , or higher) (Prencipe et al., 2014). Furthermore, the involvement of family owners as management and the board of directors' positions is considered in defining a family firm, which is a narrower definition (Anderson and Reeb, 2003; Chua et al., 2009; Wang, 2006).

Accordingly, in additional tests, I take into account different definitions of family owners and compare the results. First, I redefine the family dummy variable by extending the level of threshold to holding 20% of voting rights. Second, following family ownership literature (e.g., Amoako-Adu et al., 2011; Anderson and Reeb, 2003; Wang, 2006), I define another measure of family firms based on the involvement of family owners in the main decision-making bodies, i.e., CEO and Chairperson. Based on these definitions, 47% and 37% of the sample is identified as family firms, respectively. The results for replicating the analyses of Table 5 provide similar interpretation. Specifically, taking into account these alternative measures, running regression models, and calculating the respective marginal effects of interaction terms indicate that in family firms with high levels of DVR and outside family CEOs, the relation between pay and performance is stronger.

Furthermore, for capturing the divergence between voting rights and cash-flow rights of the largest owner, following previous research (e.g., Amoako-Adu et al., 2011; Masulis et al., 2009), I use another variable in the analyses. This variable measures a ratio of voting rights to cash-flow rights, held by the largest owners. Using an alternative measure for DVR gives qualitatively similar results (untabulated for brevity) with those in previous analyses. Furthermore, in untabulated results I also examine the effect of DVR on CEO compensation by using different dummy variables which indicate different levels of DVR, i.e., low DVR and high DVR. *LowDVR* is a dummy variable, which is equal to one for firms that have DVR greater than 0 and less than 20%. *HighDVR* is a dummy variable equal to one for firms that have DVR higher than 20%. The results indicate that firms with higher levels of DVR increase CEO compensation, which is also significantly dependent to the accounting performance of the firms. However, there is no indication of higher compensation of firms with low levels of DVR (i.e., lower than 20%), suggesting that monitoring managers is not a problem for the owners of these firms.

7.2 Alternative performance measures

CEO cash compensation and, in particular, bonus contracts are often tied to reported accounting performance measures, particularly, accounting earnings (Fields et al., 2001; Murphy, 1999). For measuring the accounting performance, I use the ratio of return on assets (*ROA*) in the main analyses, following the main body of research in the compensation area (e.g., Conyon and He, 2011; Core et al., 1999; De Franco et al., 2013; Ferri and Maber, 2013; Ke et al., 1999; Leone et al., 2006). I also use another measure of accounting performance, i.e., return on equity (ROE). Replicating the analyses provides qualitatively similar results to those reported in previous tables, indicating that accounting performance is tied to cash compensation of CEOs particularly in defining short-term bonus contracts.

Furthermore, previous compensation research suggests considering the use of lagged CEO pay and lagged performance in the pay-performance model in order to control for the expected pay and expected performance, respectively (Core, 2002; Lambert and Larcker, 1987; Sloan, 1993)[25]. Following this research, I use the first-difference estimation in pay-performance relation. Replicating the anal-

[25]This model is formulated as follows. The coefficient of β indicates the pay-performance relation

yses of Table 4 provides consistent results. Specifically, the effect of change in return on assets (ROA) on the change in log value of CEO compensation is positive and significant in firms with *High* DVR ($\beta = 0.004, t = 4.30$).

7.3 Matched sample design

The analyses of this study may be subject to endogeneity problem, given that the firm ownership structure is an outcome variable. Following extant research in accounting literature (e.g., Bova et al., 2014; Chen et al., 2013; De Franco et al., 2013), I use a matching research design and obtain matched sub-samples.

First, based on descriptive statistics in Table 3, family firms have a higher accounting performance (see mean value of ROA), in comparison to non family firms. Hence, an alternative explanation for a higher pay-performance relation may be due to this difference. In order to control for the effect of this difference on pay-performance relation, for each family firm in a year, I find a non-family firm in the same industry and with the closest accounting performance (ROA). Furthermore, I compare family firms with family-related CEOs and family firms with nonfamily CEOs using the same design. A mean comparison across various groups of family firms shows no considerable difference in firm performance among these groups of firms after matching observations based on firm performance (ROA). Although not tabulated, regression analyses in a matched sample provides consistent findings with respect to performance-based compensation of CEOs in family firms with DVR.

Second, I use propensity score matching (PSM) procedure and match dual-class firms with single-class firms, based on the nearest PSM[26].

(see De Franco et al., 2013).

$$Pay_t = E_{t-1}[Pay_t] + \beta UnexpectedPerformance_t + \epsilon_t \Rightarrow Pay_t - Pay_{t-1} = \gamma_0 + \beta(ROA_t - ROA_{t-1})_t + \epsilon_t$$

[26]The assumptions that are used in the PSM procedure are: a) choosing a matching estimator with *no replacement* (i.e., 1-to-1 matching without replacement) and b) using a caliper value for estimating the matched sample at the 0.001 value, which defines the maximum distance of treated observations (dual-class firms) from control observations (single-class firms). These matching criteria further limit the size of the sample, which includes 184 matched dual-class firms and 526 single-class firms.

Table 7. Fixed effect regression of CEO compensation for a matched sample of dual-class and single class firms with common supports

VARIABLES	Total cash pay		Rbonus		EBC	
	FE	t.stat	FE	t.stat	Probit (ME)	z-value
ROA	0.294**	(2.059)	0.143*	(1.908)	-0.073	(-0.641)
RETURN	0.018	(0.499)	0.036**	(2.305)	-0.011	(-0.321)
DVR	-0.007	(-0.221)	-0.028***	(-3.876)	-0.016***	(-2.906)
Family CEO	-0.683**	(-2.375)	-0.134	(-1.302)	-0.32	(-2.401)
Non-family CEO	-0.213**	(-1.985)	-0.033	(-1.098)	-0.062	(-0.966)
FamilyCEO_DVR	0.019	(0.569)	0.032***	(3.777)	0.038***	(3.721)
NonfamilyCEO_DVR	0.017	(0.499)	0.031***	(3.764)	0.021***	(3.25)
LnTotalAssets	0.008	(0.119)	0.018	(0.720)	0.032	(1.39)
Solvency	0.002	(0.739)	-0.001	(-0.976)	-0.0006	(-0.463)
RDtoSALE	0.010	(0.250)	-0.034**	(-2.251)	0.181**	-2.355
CapitalLargest	-0.001	(-0.218)	-0.002*	(-1.762)	-0.003	(-2.045)
SecondLargest	-0.080	(-0.954)	0.033	(1.253)	-0.015	(-0.247)
Board size	0.032	(0.981)	-0.018*	(-1.674)	0.019	(0.953)
CEO on board	0.001	(0.014)	-0.025	(-0.729)	-0.086	(-1.455)
Dependent members	0.003	(0.823)	0.001	(0.576)	0.003	(1.434)
Dependent Chair	-0.071	(-0.776)	-0.022	(-0.592)	-0.14	(-2.212)
Comp.Committees	0.008	(0.026)	0.012	(0.055)	-0.09	(-1.393)
CEO age	0.001	(0.080)	-0.001	(-0.296)	-0.008	(-1.875)
CEO tenure	0.006	(0.681)	0.001	(0.377)	-0.007	(-1.479)
CEO share	-0.005	(-1.416)	0.001	(0.371)	-0.001	(-0.282)
Observations	676 (211)		676 (211)		649	
R-sqd.(within)/ Pseudo R-sqd.	0.134		0.121		0.27	

Note:
This table presents executive compensation in a matched sample of dual-class and single-class firms. Model 1 presents the total cash compensation of CEOa. Model 2 specifies the ratio of bonus to total cash compensation as the main dependent variable. The third model is related to binary regression analysis (probit) on the probability of providing CEOs with any kind of equity incentive plans. The Marginal effects (Average Partial Effect) are presented for the third model. Two interaction terms are used in the models including: FamilyCEO_DVR which indicate the effect of DVR in family CEO firms on CEO incentive compensation; and NonfamilyCEO_DVR which specifies the effect of DVR on CEO incentive compensation of family firms with outside CEOs. I use clustered standard errors (by firms). A set of times dummies (also industry dummies for the probit model) are included in all models. Statistical significance levels are 1% (***), 5% (**) and 10% (*).

The variables that are used to estimate the PSM include: firm size (*Ln TotalAssets*), investment leverage (ratio of equity to total assets, $Solvency$), performance (stock return, $RETURN$; and return on assets, ROA), industry (SIC classification), growth opportunities ($R\&DtoSales$), capital percentage held by the largest shareholder (*CapitalLargest*), family firm indicator ($Familyfirm$), size of the board ($Boardsize$), percentage of dependent members (with respect to large shareholders) on the board (*Dependent members*), and an indicator variable for firms that have a dependent chairperson (*Dependent Chair*).

Accordingly, first, based on a probit model, I predict the probability of firms hav-

ing dual-class shares (i.e., an indicator variable equal to one if *DVR*>0 and zero otherwise) and compute the propensity score. Then, I include firms in each group with the neighboring propensity score.

In the analysis of Table 7, the indicator variables related to the different types of family owners are interacted with DVR. Similar to the analysis of Table 6, the coefficients of interactions show positive and significant coefficients, highlighting the greater use of incentive compensation in family firms with DVR, compared to non-family firms with DVR (see the coefficient of *DVR*). In family firms with dual-class shares, both family-related CEOs and outside family CEOs receive higher incentive compensation. Consistent with the optimal contracting theory, larger incentive compensation is needed to motivate managers and align their interests with those of outside investors in family firms with excess voting rights.

8 CONCLUSION

While there has been much research on how compensation plans should be designed in order to mitigate agency conflicts between managers and shareholders in widely-held firms, the agency cost in firms with large shareholders has been less considered in the compensation literature. In firms with dual-class shares and pyramidal ownership structures, controlling shareholders bear only a small fraction of a company's cost. Hence, in these firms, due to the divergence of economic incentives of the largest owners (based on their cash-flow rights) from the voting power of the largest owners (based on their voting rights), agency problems arise. This is, in particular, the case in family firms, where it is more common to have differences between voting rights and cash-flow rights. In these firms, it is also more likely to extract private benefits to the benefits of family members and at the expense of outside shareholders.

This paper examines the use of performance-based compensation in family firms with different dimensions (i.e., with or without dual-class shares and with or without family-related CEOs). Overall, the results indicate a significant and positive relation between pay and performance as the divergence between voting rights and cash-flow rights increases. Accordingly, higher performance-based compensation is used in order to mitigate the agency costs associated with monitoring corporate insiders and to align the manager's interests with those of the firm as a whole.

Findings suggest that, whereas the direct control and monitoring ability of the family owners (holding large cash-flow rights) mitigates the agency cost and lessens the need for incentive compensation, facing a large separation between voting rights and cash-flow rights leads to higher CEO incentive compensation and a stronger pay-performance relation. These results provide evidence on the substitute role of CEO compensation as being used for alignment of interests between corporate insiders and outside shareholders.

Furthermore, findings are consistent with differences in agency problems within family firms. In family firms with single-class shares, the evidence reveals that the classic agency cost, due to the conflicts of interest between managers and shareholders, is mitigated and CEOs are provided with less performance-based compensation. Furthermore, family-member CEOs receive less total payments due to their superior economic incentives in the firms. However, as DVR increases in these firms, CEOs receive incentive compensation. The compensation of outside CEOs is strongly linked to the performance of the firms, suggesting that outside family CEOs, in comparison to family-related CEOs, are more under the scrutiny of family owners and the boards of directors to enhance performance of the firms.

Apppendix I: Description of variables

CEO Compensation	Value label	Measurement
Total Cash Compensation	*lnTotalCashPay*	Natural logarithm of Total cash compensation (Salary + bonus)
Bonus Ratio	*Rbonus*	Bonus/(Bonus + Salary)
Equity-Based Compensation	*EBC*	A dummy variable: 1=if CEO receive equity-based compensation and 0=otherwise
Firm Performance		
ROA	*ROA*	The ratio of return on assets (operating income scaled by total assets)
Stock Return	*RETURN*	Annualized Stock Return (calculated using Return Index from DataStream $(RI_t/RI_{t-1}) - 1)$
Ownership Structure		
Largest owner cash-flow share%	*CapitalLargest*	The percentage of cash-flow rights (held by the largest owner)
Differentiated Voting Rights %	*DVR*	Voting rights% – cash-flow rights% (held by the largest owner)
Family owner	*FamilyOwner*	A dummy: 1=if the largest owner is a family group, 0=otherwise
Family-related CEO	*FamilyCEO*	A dummy: 1=if CEO is associated to the family owner , 0=otherwise
Outside family CEO	*NonfamilyCEO*	A dummy: 1= if CEO is not associated to the family owner, 0=otherwise
Second largest	*Second largest*	A dummy: 1= if the company has a second largest owner (outside the family spheres) , 0=otherwise
Board Structure		
Board Size	*Boardsize*	The number of directors in the board
Compensation Committee	*Comp.Com*	A dummy: 1=if there is a compensation committee, 0=otherwise
Dependent Member %	*Dependent member%*	The percentage of dependent members, in relation to the largest owners to board size
Dependent Chair	*Dependent Chair*	A dummy: 1= if the chairperson is the largest owner or related to the largest owner, 0=otherwise
CEO on Board	*CEOonBoard*	A dummy : 1=if CEO sits on the board, 0=otherwise
Control Variables		
Size of the company	*lnTotalAssets*	Natural logarithm of Total assets
R&D to Sale	*RDtoSale*	Research & Development expenditures to Total Sales
Solvency ratio%	*Solvency*	(Shareholders' funds/Total assets)*100
CEO tenure	*Tenure*	The years that the CEO has been working
CEO age	*CEOAge*	Age of CEO
CEO share	*CEOshare*	The percentage of cash-flow rights (held by CEO)
Industry Dummy	*SIC*	two digit US SIC codes (Datastream)
Year Dummy	*T*	Indicator variable (years 2005-2009)
Firm Dummy	*ID*	Individuals' (firms') identification

AppendixII: Pearson Correlation, (Correlations significant at the level 5% and 1% are highlighted in bold.)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1.lnTotalCashPay	1																				
2.Rbonus	**0.543**	1																			
3.EBC	**0.22**	**0.153**	1																		
4.ROA	**0.167**	**0.241**	**-0.104**	1																	
5.RETURN	**0.069**	**0.132**	0.019	**0.163**	1																
6.LnTotalAssets	**0.648**	**0.266**	**0.065**	**0.302**	0.028	1															
7.Solvency	**-0.157**	-0.032	0.045	-0.037	0.027	**-0.273**	1														
8.RDtoSALE	-0.055	**-0.088**	**0.156**	**-0.367**	0.038	**-0.211**	**0.219**	1													
9.CapitalLargest	**-0.221**	**-0.143**	**-0.191**	**0.101**	-0.002	**0.071**	0.036	**-0.058**	1												
10.DVR	**0.129**	0.003	-0.034	**0.143**	0.05	**0.178**	0.012	**-0.069**	**0.098**	1											
11.FamilyOwner	**-0.15**	**-0.137**	-0.052	**0.139**	0.049	-0.019	**-0.063**	**-0.079**	**0.17**	**0.313**	1										
12.CEOfamily	**-0.304**	**-0.141**	**-0.196**	**0.085**	0.05	**-0.117**	**0.099**	0.036	**0.184**	**0.171**	**0.278**	1									
13.SecondLargest	-0.036	**-0.087**	**-0.137**	**0.088**	-0.02	-0.008	**-0.132**	-0.053	**-0.113**	-0.024	**0.164**	-0.007	1								
14.BoardSize	**0.583**	**0.199**	**0.108**	**0.141**	0.028	**0.621**	**-0.212**	**-0.082**	-0.052	**0.108**	**-0.064**	**-0.197**	0.014	1							
15.CEOonBoard	**0.148**	0.033	**-0.083**	**0.108**	**0.067**	**0.286**	**-0.134**	-0.026	0.044	**0.161**	**0.133**	**0.196**	**0.071**	**0.273**	1						
16.Dep.members	-0.044	**-0.07**	**-0.103**	**0.084**	0.007	**0.075**	-0.045	**-0.081**	**0.361**	**0.173**	**0.232**	-0.019	**0.288**	**-0.086**	**0.067**	1					
17.Dep.Chair	0.034	**-0.112**	**-0.087**	0.056	0.035	**0.156**	**-0.065**	**-0.092**	**0.171**	**0.143**	**0.261**	**-0.154**	**0.209**	**0.101**	**0.104**	**0.46**	1				
18.Comp.Com.	**0.348**	**0.187**	**0.167**	0.041	0.014	**0.258**	-0.043	-0.04	**-0.171**	-0.043	**-0.099**	**-0.094**	0.022	**0.381**	0.028	-0.044	**-0.108**	1			
19.CEOAge	**0.09**	-0.056	**-0.093**	0.006	0.017	**0.161**	**-0.062**	**0.091**	0.04	0.015	**0.058**	**0.087**	0.055	**0.174**	**0.205**	**0.113**	-0.049	0.012	1		
20.CEOtenure	**-0.097**	**-0.064**	**-0.172**	**0.161**	**0.064**	0.018	**0.063**	-0.037	**0.137**	**0.24**	**0.235**	**0.457**	-0.012	-0.022	**0.192**	0.032	**-0.099**	-0.045	**0.355**	1	
21.CEOshare	**-0.368**	**-0.208**	**-0.207**	0.04	0.028	**-0.118**	0.04	-0.014	**0.287**	**0.15**	**0.195**	**0.704**	**-0.061**	**-0.269**	**0.171**	0.037	**-0.151**	**-0.216**	**0.151**	**0.364**	1

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Part III

Essay 2

The Effect of Regulatory Reforms on the Pay-Performance Relation

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Abstract

This paper investigates the effect of changes in accounting and corporate governance regulations on the pay-performance relation. The sample for this study consists of all firms listed on the Stockholm Stock Exchange over the period of 2001 to 2009. Within the Swedish context, a number of regulations were enforced over the above-mentioned period. They concern the mandatory adoption of International Financial Reporting Standards (IFRS) as well as corporate governance requirements for increased compensation disclosures and "say on pay". This study examines the effects of these regulations on CEO compensation practices. The results indicate a stronger association between CEO pay and accounting performance after the IFRS adoption, and a positive and significant impact of increased disclosures on the pay-performance sensitivity. Furthermore, the results provide evidence that in firms with dual-class shares, "say on pay" is used as a mechanism to increase monitoring over the pay-performance relation. Overall, these results suggest an improved CEO compensation and increased pay-performance relation as a results of the recent regulatory emphasis on transparency and governance of executive compensation contracts.

JEL classification: G38, M12, J33
Keywords: CEO compensation, remuneration disclosure, say on pay, dual-class shares

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1 INTRODUCTION

This paper investigates the effects of accounting and governance regulations on CEO compensation contracts. Executive compensation has long been the subject of ongoing debate and recently there has been more concern for greater control over compensation plans. Listed firms in different settings have been required to adopt new accounting and corporate governance requirements. Recent reforms emphasize increased transparency with respect to executive compensation to enhance effective monitoring by the boards of directors and shareholders. Furthermore, there has been a movement towards increasingly engaging shareholders in compensation decisions. In particular, for empowering shareholders to monitor management and influence compensation policies, recent legislations require shareholders to vote on executive compensation, i.e. "say on pay".

The primary objective of this paper, to understand the effect of changes in accounting and governance regulations on evaluation and monitoring of CEO compensation, is motivated by several reasons. First, firms in European and other countries (e.g., Australia, Hong Kong) have recently adopted the International Financial Reporting Standards (IFRS) with the aim of increasing the comparability and transparency of financial statements. However, more insights into the effects of the change to new accounting standards on contractual settings, particularly on CEO compensation, are required (see Brüggemann et al., 2013). Concerning the widespread use of accounting performance measures in compensation contracts (Bushman and Smith, 2001), it is important to examine the consequences of IFRS adoption for compensation contracts and the relation between accounting performance and executive compensation.

Second, compensation contracts have recently been subject to several corporate governance reforms with an emphasis on increased compensation disclosures. However, despite the recent movements towards more disclosure, the effectiveness of mandatory compensation disclosures remains unclear. On the one hand, mandatory disclosure requirements and improved transparency in executive compensation can lead the boards to devote much effort and consideration in designing compensation contracts. In this vein, mandated disclosure can pressure the boards to provide more effective monitoring of executive compensation (De Franco et al., 2013). Greater monitoring incentives of the board of directors can curb possible management entrenchments in receiving excess compensation. On the other

hand, from a contrary perspective, more mandated disclosures may impose extra costs on firms and, in particular, lead to an increase in CEO cash compensation (Frantz et al., 2013; Hermalin and Weisbach, 2012). This mainly happens because, with having more transparency with executive compensation, successful CEOs can bargain for greater compensation. Furthermore, increased mandated disclosures, which arguably improve the board's monitoring performance, may impose excessive levels of risk on managers. Facing higher levels of risk, managers may demand greater pay and higher compensation as a result of less job security and much public scrutiny (Adams et al., 2010; Lo, 2003). It therefore remains an important question whether and how increased mandatory disclosures affect the executive compensation practices in firms.

Third, little is known about the effect of recent requirements for shareholder votes on executive pay, particularly in Europe. Recently, the European Commission has proposed to introduce a European say on pay which would oblige companies to disclose information on compensation policies and cast a *binding* shareholder vote for compensation plans. Stronger transparency requirements, as well as providing a framework in which shareholders can more easily engage and exercise their rights, are among the main aims of this proposal[1]. However, enforcing the practice of say on pay is not only limited to the European setting. An increasing tendency towards greater involvement of shareholders to vote on executive compensation is a contemporary incidence of many countries (see Armstrong et al., 2013; Cai and Walkling, 2011; Ferri and Maber, 2013). However, the potential costs or benefits of this practice is the subject of much debate. While the proponents of say on pay refer to the increased accountability of managers and the boards for the compensation policies in firms, opponents argue that mandatory say on pay would lead to further problems, including poor decisions on optimal pay practices, increased power of proxy advisors, and increased disclosure and voting costs, in particular, for smaller companies (see Bainbridge, 2008, 2009; Ferri and Maber, 2013).

The above discussion indicates that requirements for increased disclosure and shareholders engagement on executive compensation, while current features of

[1] See European Commission press release, Brussels [9 April 2014], http://europa.eu/rapid/press-release_IP-14-396_en.htm, and Barker , A. 2014. Barnier proposes greater executive pay transparency. Financial Times 9 April 2014, http://www.ft.com/intl/cms/s/0/4045426e-bfca-11e3-b6e8-00144feabdc0.html#axzz3KvECZDWE

many settings, are subject to contradicting perspectives. Considering the central aim of recent changes in the regulatory environment, this study examines the role of regulation in alleviating information asymmetry and improving the effectiveness of monitoring executives and their compensation plans. In addition, this study investigates how firms with different ownership structures respond to new requirements for transparency and shareholder votes on CEO compensation contracts. It is important to consider the relevance of compensation contracts, and particularly the impact of increased disclosure, in settings with concentrated ownership structures given that the interest of minority shareholders is an important concern in block-holding contexts including many European countries (Moloney, 2012). In particular, due to the influence of controlling shareholders in the governance of many firms, the effect of recent requirements for the shareholder's right to vote on executive compensation practice and presentation needs more investigation.

This study is based on a sample of firms listed on the Stockholm Stock Exchange over the period of 2000-2009, a period which includes several regulatory changes. In January 2005, with the mandatory adoption of IFRS by the European Union (EU), Swedish listed firms changed their local accounting standards to IFRS. In July 2005, the first Code of Corporate Governance was introduced, and all companies listed on the Stockholm Stock Exchange were required to follow this Code, which includes several guidelines for executive compensation. Furthermore, Swedish listed firms are required to follow the Swedish Company Act, which also provides several requirements with respect to corporate governance of firms. An important part of this Act, which became effective on the first of January 2006, requires the board of directors to annually provide a detailed proposal for executive compensation guidelines in which shareholders cast a *binding vote*.

The introduction of the above-mentioned rules[2] and the availability of data for executive compensation, before and after these important mandatory regulations, provide an appropriate setting for examining a potential change in the compensation practice and presentation due to the exogenous regulatory requirements. Furthermore, Sweden offers firm ownership features that are similar to many other

[2]In particular, the incidence of *binding votes* on compensation policies of senior executives in Sweden contributes to the current debate in Europe about introducing a European binding vote. Currently in Europe, binding votes are only required in the Netherlands and Scandinavia, whereas the other settings have mostly introduced a mandatory non-binding shareholders vote (Gregory-Smith et al., 2014).

settings, but different from the current US-based research evidence. In fact, many Swedish listed firms are closely-held and the ownership structures are usually characterized by the use of dual-class shares and pyramidal ownership structures (Carlsson, 2007; Högfeldt, 2005; Holmén and Högfeldt, 2009). Hence, given the current concerns with respect to minority shareholder protection, this study provides evidence for the relevance and implication of enhanced remuneration disclosure and the shareholders' binding votes in such settings.

The findings of this study show that the introduction of new mandatory requirements for more transparency is significantly associated with a stronger link between accounting earnings and executive pay. In particular, with the IFRS adoption, the link between accounting performance and CEO pay becomes stronger, suggesting the importance of general commitment to increased transparency of accounting information in compensation contracts. Furthermore, the results indicate that the pay-performance sensitivity (i.e., the effect of change in performance on the change in executive cash compensation) increases as firms expand the extent of mandatory compensation disclosures. With respect to the shareholder vote on the compensation proposal (say on pay), the link between pay and performance becomes stronger, albeit only for firms with dual-class shares. These findings provide support for the importance of the recent regulations on improved transparency, in particular, in firms with greater monitoring problems.

Overall, this study shows that new requirements for increased transparency and compensation disclosures have important implications for CEO compensation practices. In particular, the results show that the change in the extent of disclosure items – which has significantly increased after the introduction of new mandatory regulations – positively affects the pay-performance sensitivity. Findings suggest that with the advent of mandatory compensation disclosure, the pay-performance sensitivity increases. Furthermore, a stronger pay-performance association after the introduction of say on pay, in firms with dual-class shares, indicates that boards of directors are under more scrutiny and, thus, they are more concerned about the link between CEO pay and firm performance. By providing evidence on the implication of say on pay for promoting minority shareholders' interests, this paper contributes to the current debate in Europe about introducing a mandatory say on pay. In particular, firms respond positively to new regulations on say and pay and strengthen the pay-performance relation, where agency conflicts arise between corporate insiders and outside shareholders.

The remainder of this paper is organized as follows. Section 2 presents background related to the Swedish institutional setting and regulatory design. In section 3, a theoretical framework for developing the hypotheses is discussed. Section 4 explores the details of the research design. The sample and descriptive statistics are presented in section 5. The results are explored in section 6 and in section 7 additional analyses are provided. Finally, section 8 concludes the paper.

2 THE REGULATORY CONTEXT IN SWEDEN

Mandatory disclosure of executive compensation in Sweden was primarily introduced by the Swedish Annual Accounts Act (in 1995), and it has been followed by Swedish firms since 1996. This law requires public companies to disclose the total amount of remuneration and other benefits of directors and CEOs on an annual basis. Specifically, it requires firms to disclose bonuses and comparable [variable] remuneration to board members and CEOs separately[3]. However, recently Sweden has developed a number of new requirements for higher transparency in accounting and corporate governance practices. The following section summarizes the important regulatory events in Sweden, particularly since 2005.

Accounting Standards

The initial accounting standard for recognition and measurement of employee benefits – in accordance with requirements from the Swedish Financial Accounting Standards Council (*Redovisningsrådet: RR29*) – was adopted by Swedish firms, and effective from the beginning of the year 2003. This standard specifies the requirements for recognition and measurement of all types of employee benefits, except share-based payments in which only a general description of the nature and terms of equity compensation plans is required. In January 2005, in connection with the mandatory adoption of International Financial Reporting Standards (IFRS) by the European Union (EU)[4], Swedish listed firms changed their local Generally Accepted Accounting Principles (Swedish GAAP) to IFRS, which led to considerable changes in the financial reporting of firms.

[3] Årsredovisningslagen (ÅRL 1995:1554), 5 kap. 19§-22§
[4] European Union regulation (No. 1606/2002)

In Sweden, almost all prevailing IFRS requirements had gradually been adopted into Swedish GAAP from 1991–2004 (e.g., the requirements of RR 29 are almost an equivalent of IFRS requirements for employee benefits, based on IAS 19). However, as stated by Hellman (2011, p.64), "the Swedish adoption of IFRS during 1991-2004 can be characterized as a soft adoption". He explained that it was a national version of IFRS in which there were deviations from original IFRS when necessary, due to the Swedish law compliance. Furthermore, adoption of IFRS in 2005 led to more comprehensive disclosure requirements for accounts following the main objective of IFRS in increasing the transparency and comparability of financial reporting.

In addition, enforcement institutions in Sweden were relatively weak in the pre-adoption period of IFRS compared with the EU-regulated adoption of IFRS, with a strong legal enforcement. However, substantive changes in the enforcement of accounting standards in Sweden occurred after IFRS adoption and in particular in 2007, with the formation of the Swedish Financial Supervisory Authority - SFSA (*Finansinspektionen*). This suggests that the effect of IFRS adoption and enforcement changes can be observed separately, in Sweden, which is important to be considered when examining the general impact of IFRS (Christensen et al., 2013).

Code of Corporate Governance

In addition to a significant change in preparation and presentation of financial reporting, following the adoption of IFRS in 2005, listed firms have been increasingly facing regulations and recommendations from the EU, with respect to corporate governance improvements. In particular, the EU recommendations (2004/913/EC, 2005/162/EC, 2009/385/EC)[5] about the disclosure and transparency

[5]European Commission 2004/913/EC. Recommendations on fostering an appropriate regime for the remuneration of directors, [2004] OJ L385/55

European Commission 2005/162/EC. Recommendations on the role of independent non-executives or supervisory directors, [2005] OJ L52/51

European Commission 2007. Report on the application by member states of the EU of the Commission Recommendations on directors' remuneration

European Commission 2009/385/EC. Complementing Recommendations 2004/913/EC and 2005/162/EC as regards the regime for the remuneration of directors of listed companies, 2009 O.J., L 120/28.

of compensation policy have resulted in a significant movement in developing codes of good governance among European countries.

In response to the demand from the EU to improve the governance systems of firms, the first Code of Corporate Governance was introduced in Sweden in 2005. Since then, Swedish listed firms are required to follow the Code, according to the principle of "comply or explain". This means that the Code requires firms to follow a set of rules; but it also allows firms to choose not to comply due to particular circumstances, given that they provide an explanation for non-compliance[6].

The Corporate Governance Code has been revised twice since 2005 (first, in 2008 and then in 2010). In the first version of the Code in 2005, it is suggested that the boards provide a proposal for the company's policy on remuneration of senior management. Specifically, it is required that the remuneration policy should state the relative importance of fixed and variable components of the remuneration and the linkage between performance and remuneration[7].

These guidelines are, however, excluded in the revised Code in 2008 and in 2010; particularly, there are no specifications with respect to the remuneration policy. The Swedish corporate governance board issued a document in May 2008, providing a comparison between the revised Code in 2008 and the original Code in 2005. With respect to the exclusion of the remuneration policy, it is mentioned that this requirement has been removed since the corresponding rule is developed as part of the *Company Act*[8]. This implies that these policy requirements are still in force, but the enforcement is greater. More precisely, in contrast to the voluntary nature of the Code of corporate governance under the term "comply or explain", the Swedish Companies Act is supported by law imposition with greater enforcement.

[6]The Swedish Corporate Governance Code, 2010; p.5

[7]Corporate Governance Code (2005:4.2.2).

[8]In this comparison document it is stated that: "information regarding remuneration policy etc. is no longer required [since] the equivalent requirements already exist in the Companies Act. The requirement to report how remuneration issues are handled by the board is regarded as unnecessary and has been removed, even though the equivalent requirement is not found in the Companies Act" (p.39).

Company Act

The Swedish Company Act provides a framework for corporate governance of listed firms in Sweden, and part of this Act deals with executive remuneration. Based on this law, which has been in effect since 2006, the board of directors in listed firms are required to annually prepare proposals and guidelines for the salary and other remuneration to the CEO and other senior executives[9]. In this proposal, the main structure of compensation to senior executives and the conditions under which it is applicable should be indicated. The guidelines for executive compensation shall cover the period from the next annual general meeting (AGM).

Furthermore, whether or not the guidelines of the last AGM have been followed as well as the reasons for any deviation should be disclosed in annual reports. An important feature of these guidelines is that they are entitled to a binding vote. In other words, the Swedish Company Act requires *mandatory* say on pay rights for shareholders. As stated in the Company Act, at the AGM, shareholders are entitled to vote for or against the board of directors' proposed remuneration guidelines. The Company Act states that such proposals must be submitted to shareholder voting at the AGM[10]. Another important feature of the remuneration proposal is that it is monitored by auditors. According to the Company Act, firms' auditors shall – no later than three weeks before the AGM – provide a written signed statement and report whether the guidelines of the last AGM have been followed[11]. Any deviations from the guidelines in the previous year and the main reasons for the deviations must be attached to the proposal.

Overall, the above description of the regulatory setting in Sweden indicates that there has been an increasing focus on enforcing several accounting and governance requirements since 2005. In particular, increased compensation disclosure and empowering shareholders' voice about the remuneration of directors and executives are at the center of recent regulatory debates. In the next section, I provide the theoretical framework for investigating the impact of these mandatory requirements on CEO compensation and its pay-performance relation.

[9] Swedish Company Act (ABL § 8:51-53)
[10] Swedish Company Act (ABL § 7:61)
[11] Swedish Company Act (ABL § 8:54)

3 HYPOTHESIS DEVELOPMENT

3.1 Accounting information and the pay-performance relation

Referring to agency theory, monitoring devices are required to communicate firm performance to outside shareholders, alleviate information asymmetry, and solve agency problems (Jensen and Meckling, 1976). Under the optimal contracting perspective, shareholders with lower direct monitoring ability are more likely to provide executives with performance-based compensation, as an alternative governance tool for mitigating the agency cost (Core et al., 1999; Fernandes et al., 2013; Jensen and Murphy, 1990; Mehran, 1995). However, the recent debate regarding compensation contracts – expressed by the public, shareholders, academics and regulatory bodies – raised concerns about the large amount of fixed payouts to executives, inefficiency of incentive plans, and managers' influences on compensation decisions. In this respect, the role of the board of directors in monitoring executive compensation schemes is considered to be an important concern and the key aspect of the corporate governance debate (Bebchuk and Fried, 2004; Goergen and Renneboog, 2011).

In order to effectively monitor corporate managers and their compensation plans, the role of outside or independent directors in firms is mostly considered (Armstrong et al., 2010). Following the recent movement towards having more independent directors on the boards, it is expected that the compensation contracts are efficiently monitored. However, the information asymmetry between managers and outside directors may hinder the board's monitoring performance and the evaluation of CEO incentive pay (Bushman et al., 2004). Furthermore, delegating the responsibility of monitoring managers to the board leads to another kind of agency problem between the board of directors and shareholders. This is because, while beneficial to shareholders, monitoring requires that boards delegate effort for monitoring executives, and be independent with respect to managers (Kumar and Sivaramakrishnan, 2008).

Increased disclosure and higher quality information in different aspects of financial reporting is considered to improve firm transparency, which is critical for mitigating the information asymmetry problem (Baiman and Verrecchia, 1996; Diamond and Verrecchia, 1991; Healy and Palepu, 2001). Prior research has examined the role of IFRS adoption in this respect and provided evidence for the

effects of increased disclosure and higher quality information on enhancing the efficiency of the capital market (Daske and Gebhardt, 2006; Li, 2010). However, the implications of mandatory IFRS adoption in the contractual context, importantly, compensation contracts and accounting-based compensation schemes are also important to be examined (Brüggemann et al., 2013). Accordingly, the effects of IFRS adoption in contracting and governance mechanisms of firms is the focus of extant accounting research (Ozkan et al., 2012; Wu and Zhang, 2009, 2011). This research argues that the boards of directors are able to provide a better internal performance evaluation in firms by assessing higher quality accounting information.

Increased transparency and higher quality of information can lead to efficiency of the board's function in monitoring compensation contracts by providing credible information. In particular, firms' commitment to higher quality accounting information is beneficial, as it reduces information asymmetries between board members and managers and enables outside directors to provide more efficient monitoring and evaluation of executive incentive compensation. Even though boards may have access to management internal reports, they still need public information when evaluating executives and their compensation schemes. This is mainly because they are more likely to rely on information that is not filtered through managers; but instead, it is subject to enforcement and the oversight of auditors (Adams et al., 2010; Armstrong et al. 2010; Bushman et al., 2004). Moreover, the quality of accounting performance measures in compensation contracts is important because it can filter out factors that are beyond the managers' control and reduce the noise in performance evaluation of managers (see Holmstrom, 1982).

Overall, the above discussion stresses the role of higher quality information and greater transparency for the evaluation of the pay-performance relation. A general commitment to an increased level of transparency in accounting information can have an important role in performance-based compensation contracts. In particular, the role that accounting earnings play in governance and contracting mechanisms of firms is the focus of the first hypothesis. It is expected that following the adoption of IFRS, accounting earnings are used to a larger extent in compensation contracts.

Hypothesis 1: The pay-performance relation increases with IFRS adoption.

3.2 Compensation disclosure and the pay-performance relation

In addition to an overall commitment to a greater transparency through the adoption of IFRS, executive compensation plans have been subject to governance regulations for mandatory compensation disclosures. Increased compensation disclosure can pressure the boards to act in the interests of shareholders due to being under the scrutiny of other parties – including institutional investors, blockholders, auditors, and the labor market. In particular, requirements for preparing a discussion on performance measures used in incentive plans can lead the boards to devote much effort and consideration to designing an efficient compensation contract. This becomes even more important when there are potential conflicts of interest between the boards and shareholders, specifically, as a result of having different economic incentives as well as interlocking connections with management (Bushman and Smith, 2001; De Franco et al., 2013; Lo, 2003). Therefore, more requirements for the disclosure of executive compensation provide incentives for board members to increase the extent of their monitoring and evaluation of compensation plans.

Mandatory disclosure is considered in the literature to be a credible commitment mechanism in reducing information asymmetry (Cheng et al., 2013; Gigler and Hemmer, 2004; Stulz, 2009). For example, in a study by Cheng et al. (2013) the commitment effect provided by mandatory disclosure is compared to the voluntary disclosure, while holding the disclosed information constant. Based on their findings, they argued that mandatory disclosure serves as an important mechanism to ensure commitment to providing credible information. They argued that the information effect of voluntary disclosure cannot fully substitute mandatory disclosure. Furthermore, prior research suggests that voluntary disclosures are likely to be influenced by self-serving managerial decisions, which reduce the potential benefits of disclosure (Bushee and Leuz, 2005; Hope and Thomas, 2008).

In particular, with respect to executive compensation plans, the voluntary nature of disclosures may constitute further problems. The extent of voluntary disclosures varies among firms and is likely to be dependent on manager incentives and their power over the board of directors (Laksmana, 2008). Furthermore, Holmstrom (2004, p.713) argued that uneven compensation disclosures in firms may result in less transparency since managers do not want to reveal the precise performance targets in incentive plans. Lo (2003) explained the reasons why firms are unlikely

to provide voluntary compensation disclosures. First, disclosing more information may cause additional costs on firms followed by attention and criticism of shareholders. Second, managers that extract rent in terms of excess compensation will have no incentive to disclose information and possibly limit their rent-extraction behavior.

It is expected that, with the recent requirements on more transparency and disclosure of CEO remuneration, the boards of directors focus more on the link between pay and performance. Increased transparency of executive compensation policies can serve as an additional governance mechanism preventing the excess compensation of executives, particularly in companies with poor corporate governance.

In Sweden, specific compensation disclosure requirements have been evolved over the period of this study. An important change is related to requirements for CEO compensation policies and guidelines that have changed from being voluntary (under the "comply or explain" term in the Code) to more mandatory requirements (according to the Company Act). Therefore, I investigate the change in compensation and the pay-performance sensitivity in a period characterized by disclosure requirements for executive compensation guidelines in Swedish listed firms. It is expected that the pay-performance sensitivity becomes stronger with increased requirements for compensation disclosures.

Hypothesis 2: The pay-performance relation increases with mandatory compensation disclosure.

3.3 Say on pay and the pay-performance relation

The recent movements in different countries with respect to introducing say on pay are expected to empower shareholders by giving them voices and control over executives and their compensation plans. In particular, the mandated requirements for enabling shareholders to vote on executive compensation policies aim to provide a mechanism for shareholders to pressure their representatives – the board of directors – to raise governance and monitor executive compensation plans. Ferri and Maber (2013) argued that in firms with weak penalties for poor performance, say on pay is used as an optimal mechanism for enhancing the monitoring of executive pay. Arguments in favor of say on pay are related to increasing the accountability of corporate management to shareholders, encouraging the boards to align

executive pay to firm performance, and eliminating pay structures that encourage excessive risk taking (see Bebchuk and Fried, 2004; Thomas et al., 2011).

Considering the recent requirements for enhancing the governance over executive compensation, an important aspect is the cross-sectional ownership structure variation in firms facing the new regulations (Armstrong et al., 2010). The extent of agency costs is mostly related to the type and structure of ownership, which differ over firms in different settings (La Porta et al., 1999). Prior empirical research suggests that in a concentrated ownership setting, strong incentives and the monitoring role of the large owners over executives and their pay packages imply that other (costly) monitoring mechanisms, including performance-based compensation, are less needed (Craighead et al., 2004; Ferri and Maber, 2013). On the other hand, there is a competing view suggesting that large owners can also influence management and secure their own private benefits (Shleifer and Vishny, 1997). Recently, research has focused more on implications for different governance mechanisms in concentrated ownership settings, given that the conflicts of interests between large and small shareholders are also important concerns (e.g., Morck et al., 2005; Renders and Gaeremynck, 2012; Zerni et al., 2010).

Accordingly, firms with direct control of blockholders and large owners may react differently to exposure to the recent requirements. On the one hand, it is expected that firms with greater direct control of large owners or the board of directors are less likely to change the governance policies of firms, following the new requirements related to executive compensation. This argument supports the substitute hypothesis, suggesting that the possibility of directly monitoring management – through ownership or board structure – substitutes alternative governance mechanisms, e.g., incentive compensation. On the other hand, due to the conflicts of interest between large and small shareholders, particularly in firms with dual-class shares, it is likely that these firms increase pay-performance sensitivity, after the new mandatory requirements for binding shareholder vote on compensation plans. With increased shareholder oversight and control, corporate insiders introduce incentive compensation as an alternative monitoring mechanism to ensure that managers' interests are also aligned with those of outside shareholders.

An increase in legislation for say on pay in settings with a large influence of controlling shareholders can be explained by the lower investor protection and the greater agency conflicts between large and small shareholders. Cai and Walkling (2011) argued that among the countries that have introduced say on pay, those that

are identified with lower investor protection, as measured by La Porta et al. (1999) (i.e., the Netherlands, Norway and Sweden), require mandatory shareholder votes. In particular, in firms where it is likely that the interests of large shareholders deviate from those of outside shareholders (e.g., in firms with dual-class shares), a mandatory say on pay can facilitate the influence of outside shareholders in the compensation decision of firms since it gives the right to each shareholder to vote on the CEO compensation plan.

The second hypothesis examines the pay-performance relation of firms that introduce say on pay, particularly in firms with dual-class shares. Based on the Swedish Company Act, shareholder binding votes are required to accept the boards' proposals for CEO compensation at the AGM. Moreover, a common concentrated ownership structure, as well as the frequent use of dual-class shares in Sweden, offer a suitable setting for testing the second hypothesis.

Hypothesis 3a: The pay-performance relation increases with the introduction of say on pay.

Hypothesis 3b: The increase in the pay-performance relation, following the introduction of say on pay, is stronger for firms with dual-class shares.

4 RESEARCH DESIGN

The effect of IFRS adoption on CEO pay

The empirical analysis of this study begins by examining the pay-performance relation over a period which includes the introduction of new accounting standards, i.e., IFRS. In the models, following previous research (e.g., Bushman and Smith, 2001; De Franco et al., 2013; Leone et al., 2006; Ozkan et al., 2012), I focus on the cash compensation of CEOs[12]. The two most common types of cash compensation are annual salaries (the fixed component) and bonuses (the variable component).

[12]CEO cash compensation is the major component of compensation plans of CEOs in Sweden, as well as in many other countries (see Fernandes et al., 2013), and therefore, it is of particular interest. Furthermore, as argued by Ozkan et al. (2012), the choice of CEO cash compensation is important in order to understand the usefulness of accounting performance for CEO compensation, which is expected to be mostly linked to CEO cash compensation.

$$COMP_{it} = \alpha_0 + \alpha_1 Performance_{it} + \alpha_2 Post_{it} + \alpha_3 Performance_{it} * Post_{it} + \gamma' Control_{it} + \epsilon_{it} \quad (1)$$

In the above model (Eqs.1), $Performance_{it}$ comprises an accounting performance ratio, return on assets (ROA_{it}), and a market performance measure, annual raw stock return ($RETURN_{it}$). $Post_{it}$ indicates the effect of a dummy variable for the year 2005 (characterized by the introduction of IFRS) on CEO cash compensation. The interaction term between $Performance_{it}$ and the dummy variable $Post$ indicates the extent of performance-based compensation and how it varies before and after the adoption of IFRS.

Disclosure and pay-performance sensitivity

Over the period of this study (2001-2009), there were some reforms with respect to mandated changes in executive remuneration disclosure. The effect of increased disclosure requirements on pay-performance sensitivity is considered in the second model. Specifically, following previous research (e.g., Clarkson et al., 2011; De Franco et al., 2013; Ozkan et al., 2012), I consider the association between the changes in cash compensation from year $t-1$ to year t ($\Delta COMP_{it}$), and the changes in performance measures from year $t-1$ to year t ($\Delta Performance_{it}$). In order to examine the effect of increased disclosure on pay-performance sensitivity, I use interaction terms between $\Delta Performance_{it}$ and a proxy for disclosed items. In measuring the effect of disclosure, following prior research (e.g., Clarkson et al., 2006, 2011), I use a constructed disclosure index and examine how the changes in the disclosure index, $\Delta Disclosure_{it}$, affect the pay-performance relation.

$$\Delta COMP_{it} = \alpha_0 + \alpha_1 \Delta Performance_{it} + \alpha_2 \Delta Disclosure_{it} + \alpha_3 \Delta Performance_{it} * \Delta Disclosure_{it} + \gamma' Control_{it} + \epsilon_{it} \quad (2)$$

Disclosure is an ordinal variable that takes values between 0 and 8, according to the required items from different legislations. In order to measure the disclosure index, I have identified the main requirements – based on the Swedish Annual

Accounts Act, the Swedish Company Act, and the Corporate Governance Code. The scores of disclosure items in annual reports are evaluated for each firm over the 9-year period. The disclosure scores are based on the following criteria, which should be disclosed in annual reports:

- Disclosure of decision-making process and guidelines of executive and board of directors compensation[13];
- Disclosure of specifics of CEO cash compensation (i.e., salary, bonus, other benefits, etc.)[14];
- Disclosure of specific fees and remuneration of each directors' pay;
- Disclosure of performance-related pay for the CEO[15].

An aggregated measure of this index for each observation is used in the analyses. Each item receives three different scores: 0 if there are no guidelines; 1 if there is broad information; and 2 if there is detailed information. Therefore, each observation may receive a minimum value of 0 and a maximum value of 8.

Say on Pay

The third hypothesis is related to the recent mandatory legislation for empowering shareholders to have the right of say on pay. Firms in Sweden are required to provide and disclose the principles of executive remuneration policies. According to the Company Act, the guidelines for remunerations to executives should be proposed to shareholders at the AGM, which casts annual binding say on pay votes on the proposed remuneration policy. For investigating the third hypothesis, I again consider the pay-performance sensitivity in which the effect of say on pay, particularly in dual-class firms, is examined.

[13]The Swedish Company Act: Swedish listed firms shall annually prepare proposals for guidelines on the salary and other remuneration to the CEO and other senior executives (Lag 2007:566, *translation*).

[14]The Swedish Annual Accounts Act: larger companies and smaller companies that are public must disclose the total amount of financial remuneration and other benefits for each of the following groups: Directors, CEO, and equivalent positions (1999:1112, *translation*).

[15]The Swedish corporate governance Code: The relative importance of fixed and variable components of the remuneration and the linkage between performance and remuneration should explicitly be mentioned in the remuneration policy (The Swedish Corporate Governance Code,2005:4.2.2).

$$\begin{aligned}\Delta COMP_{it} = {} & \alpha_0 + \alpha_1 \Delta Performance_{it} + \alpha_2 Proposal_{it} + \alpha_3 Dual_{it} \\ & + \alpha_4 \Delta Performance_{it} * Proposal_{it} + \alpha_5 \Delta Performance_{it} * Dual_{it} \\ & + \alpha_6 Proposal_{it} * Dual_{it} * \Delta Performance + \gamma' Control_{it} + \epsilon_{it}\end{aligned} \tag{3}$$

In the above model, I use a dummy variable to examine the effect of requirements for the remuneration proposal, which is subject to the shareholders' votes at the AGM. This dummy variable ($Proposal_{it}$) is equal to one for firms that provide remuneration guidelines, and zero otherwise. Specifically, for testing the effect of this regulation on the pay-performance sensitivity, I use an interaction term between $Proposal_{it}$ and $\Delta Performance_{it}$ (Specifically, ROA_{it} as an accounting performance measure). Next, in order to examine whether there are differences with respect to the effect of say on pay on pay-performance relation in firms with excess control rights, i.e., firms with dual-class shares, I use a three way interaction, $Proposal_{it} * Dual_{it} * \Delta Performance_{it}$. *Dual* is a dummy variable equal to one for firms with dual-class shares, where large owners hold greater voting rights than cash-flow rights (i.e., $VotingRights - CashflowRights \neq 0$), and zero otherwise.

Control variables

In order to control for the factors that are expected to affect CEO compensation, several variables are added to the models. Previous research indicates that firm size is one important factor, affecting both the compensation practice and compensation disclosure of CEOs. In particular, larger firms are expected to provide more performance-based compensation for CEOs and also to disclose more information on CEO compensation (Lang and Lundholm, 1993; Murphy, 1999). Firm size is measured by the natural logarithm of firms' total assets ($LnTA$).

Other firm factors – including ownership structure, debt structure, growth opportunities and industry differences – are also important in explaining the differences in executive compensation practices (Anderson et al., 2000; Frye, 2004; Mehran, 1995). In order to control for firms' growth opportunities, I add two variables: firstly, the ratio of R&D expenditure to total sales ($RDtoSale$); secondly, the natural logarithm of firms' market to book values ($LnMTBV$). Furthermore, I control for the effect of firms' liabilities by including the ratio of total debt to total assets

as a proxy for leverage (LEV). Considering the controlling power of the largest owners in limiting the CEO compensation, I control for the percentage of the largest owners' capital shares in firms ($CapitalLargest$). Finally, CEO attributes are expected to affect executive compensation. Therefore, I add CEO shareholding ($CEOshare$) and CEO age ($CEOage$), in different models, to control for the potential impact of these factors on CEO compensation. Appendix I provides detailed descriptions of all variables used in the analyses.

5 SAMPLE AND DESCRIPTIVE STATISTICS

The sample consists of all companies listed on the Stockholm Stock Exchange for the 9-year period (2001-2009), a period which includes several changes in the regulatory environment. In particular, since 2005, Swedish listed firms have been facing several major regulations (i.e., adoption of IFRS, introduction of the Code of corporate governance, and amendment of the Swedish Company Act).

The data for years of the pre-mandatory as well as post-mandatory adoptions of legislations is collected from different sources. Specifically, compensation data for CEOs and disclosure items for each firm are hand-collected from the annual reports of listed companies in each year[16]. The financial accounting data is taken from the Worldscope, and Datastream databases. Ownership data, related to the percentage of cash-flow shares held by the largest owner, is collected from an available database based on the "Owners and Power" booklets by Fristedt and Sundqvist (2003). This database gives us a more accurate measure of control and ownership of the large owners, and particularly, the ownership through control enhancing mechanisms (i.e., dual-class shares and pyramids) is separately identified.

[16] As mentioned in section 2, according to the Annual Accounts Act in Sweden, public firms are required to disclose bonuses and comparable [variable] remuneration to board members and CEOs separately. However, the compensation of other senior executives is not separately disclosed in annual reports. For the board members, firms usually disclose the fees that board members receive in an aggregated level (i.e., the total amount that all board members receive).

Table 1. Sample composition

Panel A. Distribution of observations by fiscal years										
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Nr. Firms	222	232	233	227	244	240	239	230	223	**2090**

Panel B. Distribution of observations by industry (SIC code)			
SIC Code	Industry Descriptions	Nr.	%
10	Metal Mining	23	1.10
13	Oil and Gas Extraction	12	0.57
17	Constructions-special trade contractors	14	0.67
20	Food and Kindred Products	38	1.82
23	Apparel and Other Textile Products	27	1.29
24	Lumber and Wood Products	30	1.44
25	Furniture and Fixtures	24	1.15
26	Paper and Allied Products	54	2.58
27	Printing and Publishing	46	2.20
28	Chemicals and Allied Products	30	1.44
33	Primary Metal Industries	40	1.91
34	Fabricated Metal Products	58	2.78
35	Industrial Machinery And Equipment	155	7.42
36	Electronic & Other Electric Equipment	102	4.88
37	Transportation Equipment	72	3.44
38	Instruments and Related Products	142	6.79
39	Miscellaneous Manufacturing Industries	26	1.24
44	Water Transportation	31	1.48
48	Communication	60	2.87
49	Electric, gas, and sanitary services	20	0.96
50	Wholesale Trade-Durable Goods	55	2.63
51	Wholesale Trade-Nondurable Goods	13	0.62
56	Apparel and accessory stores	44	2.11
57	Furniture and Home furnishings Stores	15	0.72
62	Security and commodity brokers	61	2.92
65	Real estate	136	6.51
67	Holding and other investment offices	91	4.35
73	Business Services	353	16.89
79	Amusement & Recreation Services	33	1.58
80	Health Services	21	1.00
87	Engineering & Management Services	118	5.65
	Others *	146	6.98
	Total	**2090**	**100**

* The industries represented in this group include the two-digit SIC including 7, 8, 15, 16, 17, 21, 22, 29, 42, 45, 47, 52, 54, 55, 58, 64, 70, 82

The distribution of the sample is presented in Table 1. The sample consists of all firms listed on the Stockholm Stock Exchange. From this sample, banks and foreign companies are excluded, due to their different regulatory environments. The final sample includes 2090 firm-year observations. In panel A, the numbers of firms in each year are presented, which slightly differ over the 9-year period (i.e., an unbalanced panel data). In panel B, the industry classification of firms is presented by primary 2-digit SIC codes.

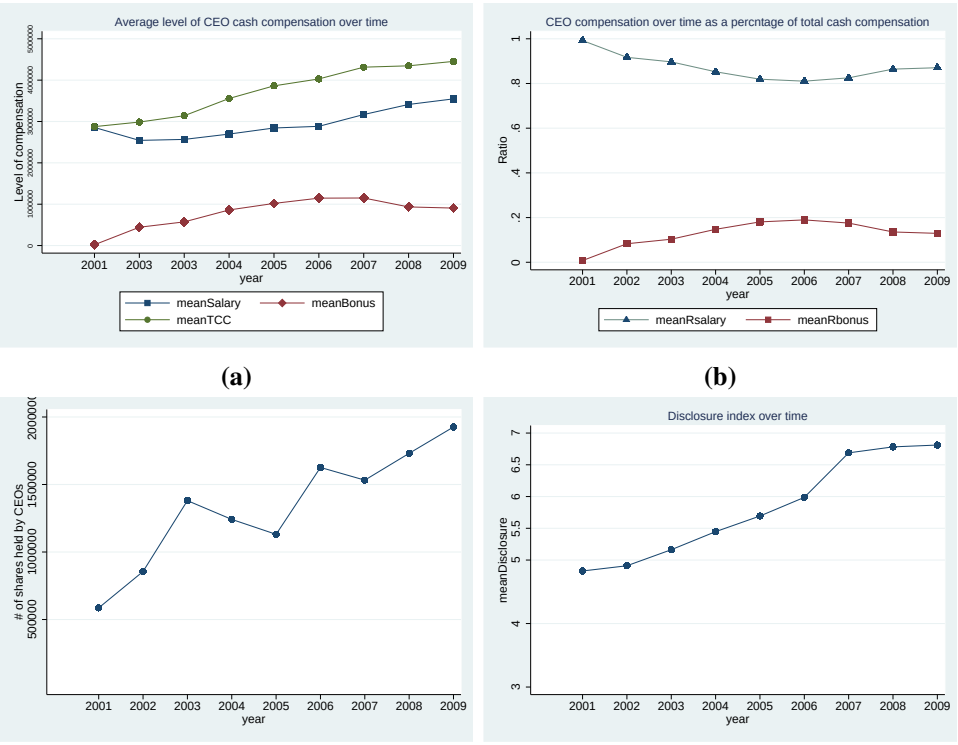
Table 2 presents the descriptive statistics for the variables of this study. The CEOs of firms in the sample receive, on average, yearly total cash compensation of 3735 thousand SEK. The natural logarithm of direct compensation ($LnCOMP$) is used in analyses with a mean (median) of 14.8 (14.73). The mean (median) of the change in logarithm of CEO compensation ($\Delta COMP$) is 0.066 (0.057), which indicates that the change in CEO compensation, relative to the previous year, is not substantial, in Sweden. Return on assets (ROA) and the change in ROA (ΔROA) have the mean (median) of 0.007 (0.054) and 0.008 (0.001), respectively. I winsorized the variable ROA at the first and 99th percentiles, due to the incidence of some extreme values in the data. Stock return (RET), also winsorized at the first and 99th percentiles, has a mean (median) of 0.082 (0.033). Total assets as the measure of firm size has a distribution skewed to the right. Therefore, I use a natural logarithm of this variable, which has a mean (median) of 14.21 (13.93).

The percentage of cash-flow rights held by the largest owners is, on average, 24.33%, reflecting upon the concentrated ownership structure of Swedish firms. Furthermore, almost 50% of listed firms in the sample have shares with larger voting rights than cash-flow rights through the use of dual-class shares (*Dual*). The average age of CEOs is 49 and the mean value of shares that they hold in firms is around 3%. Regarding the disclosure index, the aggregate scores for the four main disclosure items vary from 3 to 8, and the mean (median) of this score is around 5.85 (6). The change in disclosure items from time $t-1$ to time t is used in the analyses, which has a mean (median) of 0.249 (0). Around 44% of firm-year observations have remuneration proposals, subject to binding shareholder votes. However, this percentage is much higher (more than 90%) after the mandatory requirements, according to the Company Act in 2006.

Table 2. Descriptive statistics of variables

stats	**Mean**	**Std.**	**Min**	**25%**	**Median**	**75%**	**Max**
COMP (KSEK)	3735.40	3642.02	0	1614	2500	4366	24692
LnCOMP	14.803	0.795	11.482	14.295	14.732	15.289	17.022
ΔCOMP	0.066	0.409	-2.973	-0.057	0.057	0.218	2.611
ROA	0.007	0.192	-0.896	-0.007	0.054	0.101	0.339
ΔROA	0.008	0.154	-0.916	-0.042	0.0015	0.042	1.047
RET	0.082	0.528	-0.855	-0.274	0.033	0.332	2.188
CapitalLargest%	24.335	16.661	1.40	11.900	20.600	31.200	90
TA (MSEK)	10642	31089	6.6	361.4	1124.6	5517	361239
LnTA	14.210	1.973	8.790	12.798	13.933	15.523	19.705
RDtoSale	0.095	0.445	0	0	0	0.019	3.726
LnMTBV	0.671	0.802	-3.912	0.157	0.631	1.111	5.394
LEV	0.493	0.225	-1.402	0.345	0.522	0.655	2.914
CEOage	49.141	6.956	29	44	49	54	67
CEOShare%	2.803	7.643	0	0.014	0.139	1.181	47.543
Dual	0.495	0.500	0	0	0	1	1
Disclosure	5.851	1.234	3	5	6	7	8
ΔDisclosure	0.249	0.586	-3	0	0	0	4
Proposal	0.466	0.499	0	0	0	1	1

Note:
The Table presents descriptive statistics of variables used in different empirical analyses. The variables are defined as: COMP is the annual total cash compensation for CEOs (in thousand SEK). LnCOMP is the natural logarithm of cash compensation and ΔCOMP is the change in the natural logarithm of cash compensation for CEOs from year t-1 to year t. ROA is return on assets, used as an accounting performance measure. RET is the yearly stock return, used as a market performance measure. CapitalLargest, is the cash-flow share percent of largest owner. TA is the total assets presented in million SEK. LnTA is the natural logarithm of company total assets. LnMTBV is the logarithm of market value of equity divided by the book value of equity. RDtoSale is the ratio of R&D expenditures divided by net sales. LEV is the ratio of book value of total debts divided by total assets. CEOage presents the age of CEOs and CEOShare% is the percentage of firm shares, held by the CEO. Dual is a dummy variable equal to one for firms that have dual-class shares and zero otherwise. Disclosure is an index defined based on compensation disclosure requirements in Sweden. Proposal is a dummy variable equal to one for firms that provide shareholders with a guidelines of executive compensation for voting and zero otherwise.



CEO compensation mix (Figure a,b,c) and disclosure (Figure d) over time

Figure 1 presents the CEO compensation mix, level, and the disclosure index over the period of this study. It is clear from Figure 1.a that with some small variations, the CEO cash compensation increased over the 9-year period. This is particularly related to a steady rise in the salary amounts that CEOs receive in Swedish listed firms. Bonuses also increased up to the year 2008, but they decreased in 2008, which can be related to the impact of the financial crisis in 2007. The percentage of CEO salaries and bonuses to total cash pay (in Figure 1.b) shows that the major component of CEO compensation is salary, and a decrease in the salary corresponds approximately with an increase in the percentage of bonuses. In Figure 1.c, the variation of the number of shares held by CEOs is shown. This graph indicates that the numbers of CEO shares have been increasing over the years, with the exception of the years 2004 and 2005. The reduction of the numbers of shares that CEOs received in these two years can be explained by the introduction

of IFRS 2 in 2005. While firms did not have to recognize an accounting cost for equity-based compensation of CEOs according to the Swedish GAAP, the adoption of a new accounting treatment of equity-based compensation could have a negative impact on granting shares to CEOs. Still, since 2005, there has been a significant over-time increase in the numbers of shares that CEOs hold[17].

The average of disclosure scores (in Figure 1.d) varies from 4.8 in 2001 to approximately 7 in 2009. It is clear that the disclosure scores have increased over the period of the study. However, the trend in disclosure scores is not stationary over time. In particular, the change of disclosure scores after the year 2005 is considerably different from the trend before 2005. In particular, with the introduction of the Company Act in 2006, for mandatory requirements of disclosure of the decision-making process and guidelines of executive compensation, the level of compensation disclosure increased. This suggests that there has been much attention on CEO compensation disclosure in many Swedish firms, after the amendment of new mandatory regulations. In particular, specifying the guidelines for remuneration of executives in the annual report was scarce before 2005. However, after the introduction of the Code of corporate governance (in 2005) and, importantly, the Company Act (in 2006), the tendency for preparing compensation guidelines and disclosure is greater among Swedish firms.

The Pearson correlation matrix is presented in Appendix II. The correlation between performance variables (*ROA* and *RET*) and CEO cash compensation (*LnComp*) is positive and significant (at the 1% level). In addition, there is a significant Pearson correlation between ΔROA and changes in compensation ($\Delta LnComp$). Another variable of interest, related to the type of ownership, is *Dual*. This variable is positively (significant at 1% level) correlated with CEO total cash pay. The percentage of capital held by the largest owners ($Cap\_Largest$) is significantly and negatively correlated with CEO cash compensation. The change in the disclosure index ($\Delta Disclosure$) is not significantly correlated with the change in cash compensation ($\Delta LnComp$), but the dummy variable *Proposal* is significantly correlated with $\Delta LnComp$.

[17]Numbers of CEO shares that are shown in this figure are as presented in annual reports. These numbers, however, include both granted shares as well as acquired shares by CEOs. Owing to the limitation of separating these two, it is not possible to exactly identify CEO equity-based compensation. In addition, granting options to CEOs, as part of equity incentive plans, among Swedish listed firms is less frequent. It is also hard to find information for all listed companies in Sweden, with respect to the number of granted options to CEOs in each year.

6 EMPIRICAL RESULTS

6.1 Regulation, Disclosure and CEO compensation

The empirical investigation for the first hypothesis of this study, i.e., the effect of IFRS adoption on CEO pay, is presented in Table 3. Specifically, in Table 3, the main variable is *Post*, which separates the effect of years 2005 to 2009 (the years in the post-adoption period) from 2001-2004 (the years in the pre-adoption period). This table presents different models that examine the level of CEO cash compensation and how that is correlated to performance measures, before and after the regulation.

The first model includes a set of time dummies in order to control for the potential effects of year differences on executive compensation plans. However, due to the multicollinearity of the variable *Post* and time dummies after the year 2005, in the second and the third model, instead of time dummies, I include an annual trend variable ($Trend$) for the years 2001 to 2009. Furthermore, in the third model, I modify the *Post* dummy as being equal to one for years 2006-2009 and zero for years 2001-2004. Specifically, I exclude the year 2005 in order to control for the potential effect of the first year adoption, given that firms that apply new regulations for the first year need some time to adjust with changes. In regression analyses on the level of CEO cash compensation ($LnCOMP$), the fixed effect panel data model is considered. This model controls for heterogeneity in firms and removes the effect of unobserved time-invariant variables on the dependent variable. Furthermore, in all the models, standard errors are clustered by firms in order to control for the error's lack of independence across firms (Petersen, 2009).

The results of Table 3 show a significant increase in the link between accounting performance, *ROA*, and CEO pay in the post-adoption period. Specifically, interaction term $Post * ROA$ is positive and significant at the 5% level, suggesting a significant increase in using accounting performance measures for defining CEO cash compensation after 2005. In the first model, the positive and significant coefficient of *Post* indicates that there is a substantial increase in the level CEO cash compensation from the pre-adoption period to the post-adoption period.

Table 3. The impact of regulation on pay-performance relation

	Model 1 (LnComp.)		Model 2 (LnComp.)		Model 3 (LnComp.)	
VARIABLES	Coeff.	(t.stat.)	Coeff	(t.stat.)	(Coeff.)	(t.stat.)
ROA	0.084	(0.846)	0.081	(0.824)	0.069	(0.664)
RET	0.087**	(2.247)	0.076**	(2.171)	0.085**	(2.108)
Trend			0.055***	(7.855)	0.060***	(12.130)
Post	0.273***	(6.721)	0.050	(1.517)		
Post*ROA	0.288**	(2.455)	0.288**	(2.466)	0.268**	(2.183)
Post*RET	-0.013	(-0.278)	-0.026	(-0.595)	0.012	(0.214)
LnTA	0.027**	(2.003)	0.028**	(2.049)	0.026*	(1.859)
LnMTBV	-0.001	(-0.047)	-0.002	(-0.127)	0.000	(0.025)
RDtoSale	0.057	(1.181)	0.057	(1.167)	0.055	(1.022)
LEV	-0.039	(-0.411)	-0.041	(-0.426)	-0.010	(-0.098)
Cap_largest	0.001	(0.509)	0.001	(0.488)	0.000	(0.207)
CEOShare	-0.003*	(-1.731)	-0.003*	(-1.678)	-0.003	(-1.588)
LnCEOage	0.223	(1.527)	0.237	(1.614)	0.130	(0.847)
Observations (#ID)	1,792 (274)		1,792 (274)		1,588 (273)	
R-squared	0.258		0.254		0.268	

Note:

Table presents the regression results of the effect of year 2005 on pay-performance relation. The dependent variable is the logarithm of CEO cash pay. In Model 1 and Model 2, Post is an indicator variable equal to one for years 2005-2009 and zero for years 2001 to 2004. In Model 3, this dummy variable is equal to one for years 2006-2009 and zero for years 2001 and 2004 (i.e., excluding the first year adoption effect). In Model 2 and 3, instead of time dummies in regression, a continues variable is included: Trend is an annual trend variable for the years 2001 to 2009. Return on assets (ROA) (an accounting performance measure) and the yearly stock return RET (a market performance measure) are used in the models. Control variables are including Cap_Largest (cash-flow share percent of largest owner), LnTA (the natural logarithm of company total assets), MTBV (the logarithm of market value of equity to the book value of equity), R&D (the ratio of R&D expenditures to net sales, and LEV (the ratio of total debts to total assets). The age of CEO and the percentage of shares that CEO holds is also controlled in the models (lnCEOage and CEOshare%). Standard errors are clustered by firms and Model 1 includes year dummies. Robust t-statistics are presented in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

By including the annual trend variable ($Trend$) in the second model, the coefficient of $Post$ becomes insignificant. This suggests that there is an overall increase in CEO cash compensation of Swedish listed firms, instead of one-time shift in the level of CEO pay. The results of model 3 are also similar to those provided in the other models, indicating that the positive relation between accounting performance and CEO cash compensation is stronger in the post-regulation period.

Accordingly, the coefficient of the interaction term $Post{*}ROA$, in all three models, remains significant, indicating that the IFRS adoption has a significant effect on the link between accounting performance and CEO cash pay. Furthermore, the

sum of the coefficients on *ROA* and $Post * ROA$ is significant and positive in all three models. However, the interaction term $Post * RET$ is insignificant, while the sum of the two coefficients (*RET* and $Post * RET$) is positive and significant. This indicates that adoption of IFRS has no discernible effect on the relation between stock return and CEO cash compensation. Overall, these results indicate that with the introduction of IFRS in 2005, the pay-performance link increases. This is, in particular, related to the link between accounting performance and CEO pay, suggesting an importance of higher quality accounting earnings in compensation contracts.

In Table 4, I examine the second hypothesis regarding the effect of changes in the compensation disclosures ($\Delta Disclosure$) on pay-performance sensitivity. Specifically, the change in cash compensation ($\Delta Comp$) is regressed on the change in the performance variables, interacted with the change in compensation disclosure scores. Estimating the pay-performance sensitivity (i.e., using the first difference) controls for the effect of expected pay, as well as for the expected accounting performance (Core, 2002)[18]. However, given the modest change in cash compensation over time (as shown in Figure 1.a), the results are weaker and R-squared is relatively lower.

The first column of this table shows the effect of $\Delta Disclosure$ on pay-performance sensitivity, in the whole period (2002-2009)[19]. For the overall sample, the coefficient of change in return on assets (ΔROA) is positive and significant (at the 1% level), highlighting the positive pay-performance sensitivity. The coefficient on the interaction term $\Delta Disclosure * \Delta ROA$ is also positive ($\beta = 0.104$), but not significant. In order to specify the disclosure impact, the marginal effect of disclosure changes (on the average value) and the correspondent standard errors are calculated. The marginal effect of disclosure index, using an average value of this variable ($\Delta Disclosure = 0.25$), is equal to 0.395 and is significant at the 1% level. This implies that one standard-deviation increase in ΔROA (0.14) is associated with an approximately 6% increase in CEO cash compensation, when $\Delta Disclosure$ is at mean. Using the values of disclosure change that are greater

[18] In the analyses of pay-performance sensitivity, I use the first-difference estimation of the main variables in the regression. This method can control for unobserved factors. In untabulated results, I also exclude the control variables and only consider the main variables, i.e. compensation change, performance change, and disclosure change. The results are similar to those reported in the table.

[19] Firm observations in 2001 are dropped in the analyses of Table 4 due to the unavailability of data in the year 2000.

than the mean provides significant and higher values of marginal effects. However, since the coefficient of $\Delta Disclosure * \Delta ROA$ is not significant, I can not conclude that there are significant differences in pay-performance sensitivity, considering different levels of disclosure, in the total sample.

Looking at the descriptive statistics, the change in disclosure index has been more considerable since 2005. In order to provide more evidence on the impact of compensation disclosure changes, yearly analyses of the pay-performance sensitivity are presented in Table 4. Evidence from this table indicates that increased compensation disclosures have a positive effect on pay-performance sensitivity, in the post-regulation period.

Specifically, the interaction of the disclosure score change and the accounting performance change ($\Delta Disclosure * \Delta ROA$) provides a significant coefficient (at the 5% level) in the years 2007 and 2009. In particular, the year 2007 is characterized by greater enforcements for implementation of disclosure requirements in the Swedish listed firms. Accordingly, firms increase the level of compensation disclosure to a greater extent after the introduction of the Company Act.

The results provide evidence of a significant increase in the pay-performance sensitivity with the implementation of mandatory compensation disclosure. Specifically, the mandatory requirements of the Company Act for the disclosure of the decision-making process and guidelines of executive compensation enhanced the pay-performance sensitivity. These findings are consistent with the prediction that increased disclosure of executive compensation, through the introduction of mandatory requirements, leads to a higher transparency in compensation policies and a greater link between pay and performance.

Table 4. The impact of disclosure on pay-performance sensitivity

	2002-2009 (ΔComp.)		2005 (ΔComp)		2006 (ΔComp)		2007 (ΔComp)		2008 (ΔComp)		2009 (ΔComp)	
VARIABLES	Coeff.	t.stat.	Coeff.	t.stat.	Coeff.	t.stat.	Coeff.	t.stat.	Coeff.	t.stat.	Coeff.	t.stat.
ΔROA	0.369***	(3.909)	0.584**	(2.049)	0.699	(1.552)	-0.258	(-0.598)	0.246	(1.424)	0.107	(1.129)
RET	0.134***	(4.301)	-0.043	(-0.623)	0.105	(1.474)	0.058	(0.572)	0.249**	(2.266)	0.061	(0.894)
ΔDisclosure	0.009	(0.433)	0.004	(0.068)	0.072	(1.237)	-0.042	(-0.706)	0.084	(0.834)	0.056**	(2.499)
ΔDiscloaure*ΔROA	0.104	(0.995)	-0.490	(-1.424)	-0.259	(-0.736)	**0.613****	(2.160)	0.851	(0.544)	**0.488*****	(3.544)
ΔDiscloaure*RET	-0.052	(-1.356)	-0.008	(-0.102)	-0.155	(-1.046)	0.016	(0.198)	0.496	(1.438)	-0.075	(-1.605)
LnTA	-0.001	(-0.230)	-0.031**	(-2.059)	0.014	(0.941)	0.004	(0.237)	-0.022*	(-1.674)	-0.001	(-0.098)
LnMTBV	-0.020	(-1.319)	-0.056	(-0.774)	-0.026	(-0.657)	0.015	(0.445)	-0.010	(-0.290)	-0.040	(-1.509)
RDtoSale	-0.020	(-1.295)	-0.079**	(-2.384)	0.021	(0.466)	-0.073	(-1.189)	-0.025	(-0.472)	0.002	(0.053)
LEV	0.002	(0.052)	-0.205*	(-1.697)	-0.003	(-0.012)	-0.200	(-0.986)	0.333*	(1.948)	-0.018	(-0.144)
Cap_largest	-0.000	(-0.940)	-0.000	(-0.180)	0.001	(0.566)	-0.001	(-0.582)	0.003	(1.190)	0.000	(0.207)
CEOShare	-0.001	(-0.500)	-0.004	(-1.045)	0.000	(0.071)	0.001	(0.160)	-0.001	(-0.409)	0.002	(1.092)
LnCEOage	0.061	(0.936)	0.141	(0.658)	0.341	(0.913)	-0.187	(-0.713)	-0.065	(-0.407)	-0.113	(-0.839)
Observations	1,489		184		191		199		197		200	
R-squared	0.066		0.097		0.085		0.058		0.100		0.040	

Note:

Table presents the OLS regressions examining the effect of change in the compensation disclosure on pay-performance sensitivity. Interactions between change in the disclosure index and performance measures (ROA and RET) are used for the whole period (2002-2009) and for the "Post" years (i.e., 2005, 2006, 2007, 2008, 2009). Control variables are defined in the previous tables. Standard errors are clustered by firms. Robust t-statistics, based on clustered standard errors (by firms), are presented in parentheses. *Disclosure* is defined based on an index of compensation disclosure requirements in Sweden. Robust t-statistics are presented in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

6.2 Say on pay and CEO compensation

The recent movement towards say on pay in different countries is motivated by the potential role of shareholder engagement, as an additional monitoring mechanisms, in enhancing the efficiency of compensation contracts (Ferri and Maber, 2013). The third hypothesis of this paper focuses on the effect of say on pay on the pay-performance relation, given that a higher level of oversight and monitoring over remuneration of CEOs is at the center of attention. In Sweden, the Company Act (in effect since 2006), not only requires the boards to provide and publish a proposal for guidelines of the executive remuneration, but it also requires shareholders to cast a binding vote on the proposal (say on pay).

In Table 5, I examine the pay-performance sensitivity in Swedish listed firms that provide annual binding votes on the future remuneration policy. In particular, I focus on pay-performance sensitivity separately in dual-class firms and single-class firms. The gap between voting rights and cash-flow rights of large shareholders is shown to be associated with agency problems in firms with controlling owners (Masulis et al., 2009; Morck et al., 2005; Zerni et al., 2010). In dual-class firms, the agency problem arises due to the conflicts of interest between corporate insiders and outside shareholders. Therefore, it is expected that higher CEO incentive compensation is used as an alternative monitoring mechanism in these settings in order to mitigate agency costs associated with monitoring corporate insiders. In this respect, the binding votes on CEO compensation guidelines can be considered as a monitoring device in settings with dual-class shares where minority shareholders also have the right to vote on compensation plans.

In the first model of Table 5, the overall effect of a dummy variable, $Proposal$, which indicates the effect of binding votes on executive remuneration policies, is analyzed. Results show that there is no significant increase in pay-performance sensitivity due to the implication of binding votes in the whole sample. The coefficient of $Proposal * \Delta ROA$ is negative and insignificant, indicating that the say on pay practice in the overall sample does not have any significant impact on the pay-performance sensitivity. The sum of coefficients of ΔROA and $Proposal * \Delta ROA$, which indicates the pay-performance sensitivity of firms having say on pay, is equal to 0.325 and significant (at the 5 % level). However, the insignificant coefficient of this interaction in Table 5 indicates that the pay-performance sensitivity does not significantly differ depending on say on pay.

Table 5. The impact of say on pay on pay-performance relation

VARIABLES	Model 1 (ΔComp.) Coeff.	t.stat.	Model 2 (ΔComp.) Coeff.	t.stat.
ΔROA	0.568***	(3.695)	0.738***	(3.146)
RET	0.106***	(3.735)	0.105***	(3.690)
Proposal	0.016	(0.500)	0.027	(0.777)
Dual	-0.014	(-1.053)	0.002	(0.076)
Proposal*ΔROA	-0.242	(-1.367)	-0.482*	(-1.873)
Proposal*Dual			-0.020	(-0.567)
Dual*ΔROA			-0.415	(-1.410)
Proposal*Dual*ΔROA			0.625**	(1.967)
LnTA	0.001	(0.173)	0.000	(0.049)
LnMTBV	-0.020	(-1.311)	-0.020	(-1.304)
RDtoSale	-0.023	(-1.355)	-0.023	(-1.365)
LEV	-0.020	(-0.418)	-0.019	(-0.401)
Cap_largest	-0.001	(-1.204)	-0.001	(-1.197)
CEOShare	-0.000	(-0.271)	-0.000	(-0.254)
LnCEOage	0.050	(0.780)	0.054	(0.831)
Observations	1,553		1,553	
R-squared	0.066		0.069	

Note:
Table presents the OLS regression results of the effect of say on pay on pay-performance sensitivity. In model 1, the overall effect of say on pay is presented and in model 2 interactions are included to specifically examine the dual-class share firms. Proposal is an indicator variable equal to one for firms issuing a yearly proposal for executive remuneration for shareholders vote and zero otherwise. Return on assets ROA (an accounting performance measure) and the yearly stock return RET (a market performance measure) is used in both models. Dual is a dummy variable equal to 1 for firms with dual-class shares and zero otherwise. Control variables are including Cap_Largest (cash-flow share percent of largest owner), LnTA (the natural logarithm of company total assets), MTBV (the logarithm of market value of equity to the book value of equity), R&D (the ratio of R&D expenditures to net sales), and LEV (the ratio of total debts to total assets). The age of CEO and the percentage of shares that CEO holds is also controlled in the models (lnCEOage and CEOshare%). The models include a set of time-dummies. Robust t-statistics are presented in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

In the second model, I use an interaction between firm performance (*ROA*), proposal, and the dummy variable *Dual*. This three-way interaction indicates the pay-performance sensitivity of firms with dual-class shares, after the amendment of say on pay. The coefficient on this interaction indicates that in firms with dual-class shares, say on pay has a positive and significant impact on pay-performance sensitivity. This suggests that with the implication of say on pay, the compensation contracts in dual-class firms changed towards higher pay-performance sensitivity.

Overall, the findings are consistent with *H3b* that the impact of say on pay is

more pronounced in firms with dual-class shares. Hence, due to the monitoring problems in firms with dual-class share, say on pay is used as a supplementary monitoring mechanism in these firms to facilitate the use of incentive compensation for aligning the interests of managers with those of outside shareholders. This suggests that the boards in dual-class firms that provide a proposal for remuneration guidelines are more concerned with increasing the link between pay and performance. These proposed guidelines, which are reviewed by auditors, induce the board of directors to monitor CEO compensation contracts and specify a stronger pay-performance relation. The greater link between pay and performance in these firms can be used as an alternative governance mechanism in motivating managers to increase the shareholder value.

7 ADDITIONAL ANALYSES

Matched sample design

Comparing dual-class firms and single-class firms may be subject to endogeneity, given that these two types of firms are different in many respects (Masulis et al., 2009). Therefore, I control for differences in two sub-samples by matching dual-class firms to single-class firms using a propensity score matching (PSM) procedure. Specifically, I examine the effect of say on pay in single class firms and in a matched sample of dual-class firms that have the nearest PSM[20]. The variables that are used to estimate the PSM include size ($LnTA$), growth opportunities ($MTBV$ and $RDtoSale$), performance (ROA and RET), leverage (LEV). It also includes ownership structure variables such as *cap_largest* (the percentage of shares held by the largest owner), *family firm* (a dummy variable equal to one if the largest owner of a firm is a family owner and zero otherwise), *founder firms* (a dummy variable equal to one if the CEO and the chair in a firm are members of the family owner spheres and zero otherwise), and *second largest* (a dummy variable equal to one for firms that have more than one largest shareholders, holding

[20]The assumptions that are used in the PSM procedure are: a) choosing a matching estimator with *no replacement*, meaning that I preform 1-to-1 matching without replacement and b) using a caliper value for estimating the matched sample at the 0.001 value, which defines the maximum distance of treated observations (dual-class firms) from control observations (single-class firms). These matching criteria further limit the size of the sample. Specifically, the matched sample includes 286 matched dual-class firms and 732 single-class firms.

Table 6. The impact of say on pay on pay-performance relation (matched sample)

	LnComp.(Dual=1)		LnComp.(Dual=0)		ΔComp(Dual=1)		ΔComp (Dual=0)	
VARIABLES	Coeff.	t.stat	Coeff.	t.stat	Coeff.	t.stat	Coeff.	t.stat
ROA	-0.041	(-0.184)	0.320	(1.599)				
Δ ROA					0.262	(1.165)	0.691***	(2.803)
RET	0.014	(0.247)	0.109*	(1.943)	0.089	(1.239)	0.157**	(2.364)
Proposal	-0.095	(-0.864)	0.028	(0.404)	-0.109	(-1.167)	0.005	(0.096)
Proposal*ΔROA					0.770**	(2.386)	-0.435	(-1.609)
Proposal*ROA	0.724*	(1.768)	-0.112	(-0.462)				
Proposal*RET	-0.034	(-0.327)	0.053	(0.651)	-0.111	(-0.700)	-0.071	(-0.688)
LnTA	0.092**	(2.428)	0.107***	-3.82	0.011	-0.917	-0.002	(-0.226)
LnMTBV	0.107***	(2.706)	-0.016	(-0.455)	0.018	(0.558)	-0.029	(-1.298)
RDtoSale	0.023	(0.663)	-0.002	(-0.027)	-0.028	(-0.951)	-0.024	(-0.608)
LEV	-0.514	(-1.419)	0.158	(1.064)	-0.230*	(-1.661)	0.059	(0.748)
cap_largest	0.002	(0.495)	-0.003	(-1.077)	-0.001	(-0.646)	-0.001	(-0.895)
CEOShare	-0.007	(-1.053)	-0.007	(-1.497)	0.000	(0.133)	-0.000	(-0.034)
LnCEOage	0.390	(1.074)	0.190	(0.748)	-0.113	(-0.629)	0.069	(0.617)
Observations	286		732		252		649	
R-squared	0.292		0.261		0.189		0.090	
Number of ID	111		159					

Note:
Table presents the regression results of the effect of say on pay on pay-performance sensitivity on two sub-sample of dual-class firms and single-class firms. The sub-sample of dual-class firms (the treatment group) is matched to the sub-sample of single-class firms (the control group). In the first two columns the dependent variable is the *level* of cash compensation and the second two columns examine the *change* in cash compensation. Proposal is an indicator variable equal to one for firms issuing a yearly proposal for executive remuneration for shareholders vote and zero otherwise. Return on assets ROA (an accounting performance measure) and the yearly stock return RET (a market performance measure) is used in both models. Dual is a dummy variable equal to 1 for firms with dual-class shares and zero otherwise. Control variables are including Cap_Largest (cash-flow share percent of largest owner), LnTA (the natural logarithm of company total assets), MTBV (the logarithm of market value of equity to the book value of equity), R&D (the ratio of R&D expenditures to net sales, and LEV (the ratio of total debts to total assets). The age of CEO and the percentage of shares that CEO holds is also controlled in the models (lnCEOage and CEOshare%). Robust t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

at least 10% of capital shares). Finally, the probit regression for estimating the propensity score includes all the year and industry indicators.

Table 6 presents the regression results of the effect of say on pay on the pay-performance relation for the sub-sample of single-class firms and the matched sample of dual-class firms. In the first two columns, the dependent variable is the level of cash compensation. The results are based on fixed effect analyses. Standard errors are clustered by firms and time dummies are included in regression models. The variable of interest is the dummy variable, *Proposal*, which indicates the effect of binding votes on the pay-performance relation. Fixed effect analyses indicate that the moderating impact of say on pay on the relation between account-

ing performance and CEO cash pay, i.e., the interaction term $Proposal * ROA$, is positive (but only significant at the 10% level) in firms with dual-class shares. This provides some evidence on higher performance-based compensation for CEOs in dual-class firms that provide remuneration guidelines and say on pay.

In the second two columns of Table 5, the dependent variable is the change in cash compensation to estimate the pay-performance sensitivity. A pooled OLS regression is used for this model, which includes time dummies as well as industry dummies. The interaction term $Proposal * \Delta$ROA specifies whether the binding say on pay has any impact on pay-performance sensitivity. This interaction is positive and significant (at the 5% level), suggesting that in the matched sample of dual-class firms (controlling for observable heterogeneity of these firms), the pay-performance sensitivity increases with the incidence of binding say on pay. On the other hand, there is no strong impact of say on pay on pay-performance sensitivity in the sub-sample of single-class firms. Specifically, the coefficient of the interaction term $Proposal * \Delta$ROA is negative and insignificant for single-class share companies. In untabulated analyses, I have used the same specification in Table 5, including interaction terms in the overall matched sample (instead of sub-sample analyses). The coefficient on *Proposal* interacted with the performance measure, *ROA*, and *Dual* dummy remains positive and statistically significant, corroborating those of Table 5 on the full-sample tests.

8 CONCLUSION

This study concerns the effect of several recent regulatory reforms with respect to accounting and corporate governance systems on CEO compensation contracts. The results show that there is a significant increase in using accounting earnings in compensation contracts after the adoption of new accounting standards (IFRS) in Swedish firms. This suggests that the transition to mandatory IFRS adoption has important implications in firm contacting mechanisms. Furthermore, increased compensation disclosure requirements, as well as more shareholder engagement in compensation policies, are examined in this study. An empirical investigation on these aspects of disclosure and corporate governance is appealing, given that these are the aspects of current debate in many settings. In Europe, disclosure and oversight of executive compensation have recently been emphasized. However,

there are still debates regarding the potential costs or benefits of higher scrutiny in executive compensation. In particular, the relevance of these practices, in such a context, is not clear given the concentrated ownership structures in the majority of firms in Europe.

Studying a sample of Swedish listed firms provides a suitable setting for evaluating the role of regulation and the impact of new corporate governance on CEO compensation practice. This is because Sweden is characterized by having closely-held firms with controlling shareholders, in which presumably less incentive compensation and costly disclosure practices are needed. Yet recently, there have been several mandatory reformations with respect to the executive compensation practice and presentation, which are investigated in this paper.

In studying the impact of governance regulations on CEO compensation practices, this paper focuses on the extent of mandatory disclosure requirements as well as the mandatory amendment of say on pay. In line with the main aim of this study, I examine how these requirements affect the pay-performance relation. I initially document that there has been an increase in CEO compensation disclosure since 2005 and, particularly, after the year 2007. This is mainly due to the introduction of the Company Act, which has mandatory requirements for executive remuneration guidelines and say on pay. The yearly analyses indicate that there has been a stronger pay-performance sensitivity associated with enhanced compensation disclosure since 2007.

Furthermore, the results regarding the impact of the recent rule of say on pay provide evidence of an increase in pay-performance sensitivity in firms with dual-class shares. This finding is interesting given that the ownership structure of many firms, not only in Sweden, but also in many firms in Europe, involves control enhancing mechanisms (i.e., dual-class shares). In these firms, another type of agency problem (mainly as a source of conflicts of interest between large and small shareholders) arises. Accordingly, empowering shareholders to be active with respect to executive compensation has a stronger effect in firms with agency costs associated with monitoring corporate insiders.

Appendix I, Description of variables

CEO Compensation	**Value label**	**Measurement**
Total Cash Compensation	*LnComp.*	The natural logarithm of total cash compensation (Salary + bonus)
Change in Cash Compensation	ΔComp.	Change in the natural logarithm of total cash compensation
Disclosure	*Disclosure*	A constructed disclosure index based on the items required to be disclosed in annual reports
Proposal	*Proposal*	A dummy variable: 1=if firms provide the remuneration proposal , subject to a binding vote and 0=otherwise
Firm Performance		
ROA%	*ROA*	The ratio of return on assets (operating income scaled by total assets)
Stock Return	*RET*	Annualized Stock Return (obtained from DataStream (RIt/RIt-1)-1)
Ownership Structure		
Largest owner cash-flow share%	*Cap_Largest*	The percentage of cash-flow rights (held by the largest owner)
Dual	*Dual*	A dummy variable: 1=if the largest shareholders use dual class shares and 0=otherwise
Control Variables		
Size of the company	*lnTA*	The natural logarithm of Total assets
R&D to Sale	*RDtoSale*	Research & Development expenditures divided by Total Sales
MTBV	*LnMTBV*	The natural logarithm of market to book value
Leverage	*LEV*	(Total debt/Total assets)*100
CEO age	*LnCEOAge*	Natural logarithm of CEO age
CEO share	*CEOshare*	The percentage of cash-flow rights (held by CEO)
Industry Dummy	*SIC*	two digit US SIC codes (Datastream)
Year Dummy	*t*	Indicator variable (years 2005-2009)
Trend	*Trend*	a trend variable for the years 2001 to 2009

AppendixII, Pearson Correlation, (Correlations significant at the level 5% and 1% are highlighted in bold.)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
COMP (1)	1.000																
LnCOMP (2)	**0.869**	1.000															
ΔLnCOMP (3)	**0.144**	**0.252**	1.000														
ROA (4)	**0.201**	**0.232**	**0.096**	1.000													
ΔROA (5)	-0.0114	-0.0124	**0.139**	0.3446	1												
RET (6)	**0.103**	**0.114**	**0.113**	**0.360**	0.1164	1.000											
LnTA (7)	**0.598**	**0.603**	0.005	**0.3023**	-0.066	**0.070**	1.000										
LnMTBV (8)	**0.0718**	**0.0541**	**-0.0497**	-0.0243	-0.0328	**0.0851**	**-0.1823**	1									
RDtoSale(9)	**-0.061**	**-0.0503**	-0.0217	**-0.3619**	-0.0084	-0.0381	**-0.1883**	**0.1699**	1								
LEV (10)	**0.1543**	**0.161**	-0.0317	**0.0754**	0.0021	-0.0016	**0.2948**	0.0081	**-0.2228**	1							
Cap_largest (11)	**-0.1173**	**-0.1757**	-0.0121	**0.1361**	-0.0204	0.0271	**0.0489**	**-0.0576**	**-0.1026**	-0.0317	1						
Proposal (12)	**0.2164**	**0.2478**	-0.0048	**0.1149**	**-0.0913**	-0.0001	**0.1474**	**0.0772**	-0.0075	0.0094	-0.0147	1					
Dual (13)	**0.1027**	0.0448	-0.0294	**0.0883**	-0.045	0.0362	**0.1181**	**-0.0529**	-0.0143	-0.0383	**0.0652**	0.0046	1				
CEOShare% (14)	**-0.1814**	**-0.2593**	-0.0107	0.0036	0.0332	-0.0184	**-0.1837**	**0.0552**	-0.0213	-0.0379	**0.2106**	-0.0074	**0.0647**	1			
LnCEOage (15)	**0.1317**	**0.1217**	0.0123	**0.0869**	-0.0317	0.044	**0.1835**	-0.0103	**0.049**	**0.0716**	0.0236	0.0378	0.0359	**0.0779**	1		
Disclosure (16)	**0.383**	**0.4494**	-0.0056	**0.1398**	**-0.0718**	0.0373	**0.2929**	**0.0886**	**-0.059**	**0.0637**	**-0.0921**	**0.7134**	**-0.0535**	**-0.0954**	0.0409	1	
ΔDisclosure (17)	-0.0224	-0.0147	0.0289	**0.0509**	0.0294	**0.1444**	-0.026	**0.0723**	-0.0041	0.0157	0.0136	**0.1836**	0.0115	0.0031	-0.0064	**0.2141**	1

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Part IV

Essay 3

The sheep watching the shepherd:

The monitoring performance of boards with employee representatives

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Abstract

The board of directors plays a key role in monitoring management. However, information asymmetry between the boards and management is an obstacle to effective monitoring. With a sample of firms listed on the Stockholm Stock Exchange, we study the impact of employee representation on the monitoring performance of the boards. Specifically, this paper investigates the role of employee representatives and to what degree they contribute to the ability of boards to monitor CEO compensation and oversee financial reporting. We find evidence for lower abnormal accruals in firms with employee participation on the boards, suggesting that these firms are less engaged in earnings management. Furthermore, with respect to CEO compensation, we find some evidence that CEO equity incentive plans are less likely to be used in firms in which employee representatives participate on the boards.

Keywords: board of directors, employee representatives, CEO compensation, earnings management

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1 INTRODUCTION

We examine how employee representatives contribute to the monitoring performance of corporate boards. There is increasing evidence that the performance of boards of directors is driven by different board characteristics (Adams et al., 2010; Armstrong et al., 2010). Corporate governance research suggests that independent directors, mainly due to concerns about their reputation, are more incentivized to provide an effective monitoring of management (Byrd and Hickman, 1992; Fama and Jensen, 1983). However, prior research also shows that the monitoring performance of independent directors is dampened by limited firm-specific knowledge, which makes the evaluation of firm performance and strategy more difficult (Bushman et al., 2004; Jensen, 1993). Inside directors, on the other hand, facilitate effective decision-making by providing valuable firm-specific information, while they do not have the same monitoring incentives as outside directors because they are not independent of the CEO (Armstrong et al., 2010). For the same reason, inside directors are also reluctant to share their firm-specific information with independent directors (Adams and Ferreira, 2007; Harris and Raviv, 2008). Employee representatives are interesting in this respect because they are equipped with firm-specific information and at the same time derive their mandate from employees, rather than from managerial nomination and shareholder election (Fauver and Fuerst, 2006).

In the economic literature, codetermination[1] is often associated with lower firm value. With monopolistic trade unions, part of the firm value is redirected away from investors as wages are driven above competitive market levels (DeAngelo and DeAngelo, 1991). In Alchian and Demsetz (1972)'s analysis, resources are allocated inefficiently when control resides with those other than owners, i.e., the residual claimants. Jensen and Meckling (1979) concur and argue that if codetermination adds value, one should also expect to see shareholders appoint employees to the boards when it is not required by law, and that the fact that they do not is the best evidence that employee representation does not add value.

However, codetermination could still provide some value enhancing functions.

[1] With "codetermination" we refer to any influence exercised by employee or union participation on corporate decision-making, e.g., through work councils, union negotiations or employee representation. On the other hand, with "employee representation" and "employee participation" we explicitly refer to employees acting as directors on corporate boards.

Lazear and Freeman (1995) argue that having work councils facilitates the transfer of information and promotes cooperative labor relations. This could be manifested in, e.g., more expedient decision-making, moderation of worker demands in tough times, and contributions in the form of offering solutions to firms' problems. Also, the information transfer that follows from codetermination could encourage employees to invest in firm-specific skills and thereby increase firm value (Furubotn and Wiggins, 1984). Moreover, the informal influence on managers exercised by incentivized employees, and especially by subordinate managers, could serve as a value enhancing internal governance mechanism (Acharya et al., 2011).

These effects of codetermination and employee influence should arguably be particularly visible when employees are represented in the boards. Prior research suggests that employee representatives bring to the board an informed monitor with an interest in reducing agency costs induced by either managers or large shareholders (Fauver and Fuerst, 2006). Although extensive employee representation seems to be negatively associated with firm value (Fauver and Fuerst, 2006; Gorton and Schmid, 2004; Guedri and Hollandts, 2008), the empirical findings are somewhat mixed on the value effects that follow from a more moderate employee representation. Some studies indicate that moderate employee representation has neutral (Ginglinger et al., 2011) or positive (Fauver and Fuerst, 2006; Guedri and Hollandts, 2008) effects on firm value, whereas Bøhren and Strøm (2010) document a negative association between employee representation and firm value.

Although the existing empirical research offers insights on the net value effects in firms with employee representation, the mixed results indicate a need for a more fine-grained analysis of how employee representation affects corporate decision-making under different circumstances. In particular, there is still no ample empirical knowledge about to how these value effects from employee representation come about in more detail. This study addresses this issue by focusing on to what degree employee representatives contribute to more effective performance of the boards in monitoring executive compensation and the financial reporting process. Extant research investigates the board's monitoring role by focusing on these two aspects (e.g., Faleye et al., 2011; Kim et al., 2014), which is also in line with the emphasis of national codes of corporate governance for improving these monitoring functions (e.g., introducing recommendations for having separate audit committees and compensation committees to facilitate the monitoring role of the boards).

First, we investigate to what degree employee representatives influence the level and structure of CEO compensation schemes. In particular, boards that can directly monitor the CEO use less incentive compensation as a substitute governance mechanism (Dicks, 2012). Hence, employee participation on the boards, as an informed and incentivized monitor, should lessen the need for alternative monitoring mechanisms such as incentive compensation (i.e., the substitute hypothesis). Second, we examine how employee representatives on the boards of directors contribute to monitoring of financial reporting. By providing better oversight over managers, the board of directors is responsible for mitigating potential earnings management behavior and enhancing the quality of accounting earnings. We expect that employee representatives also contribute to this critical function of the boards by not only being independent directors, but also by having more human capital tied to the firms and having firm-specific knowledge.

Sweden, the setting for our study, has widespread legal rights for employee representation at the board level and ranks first in the European Participation Index, which measures worker participation (Vitols, 2010). Almost all Swedish firms have contracts with organized unions. These unions decide whether to appoint employee representatives to the board of directors. The employee representation in Swedish boards of directors could also be classified as moderate because they are always in the minority compared to those directors appointed by shareholders. Sweden's strong position in terms of worker participation together with access to high quality data makes it a suitable context for examining the governance role of boards that include employee representatives.

Using a sample of firms listed on the Stockholm Stock Exchange, our empirical analyses provide evidence for the role of employee representatives on the board of directors. In particular, we find evidence for a positive relationship between employee representation and earnings quality, which implies that firms with employee participation on the board are less engaged in earnings management. Furthermore, while we find no significant impact of employee representatives on excess CEO compensation, the design of the remuneration schemes for CEOs in these firms includes less equity-based compensation. This is consistent with the substitute monitoring hypothesis that in firms with direct control of the board, incentive-based compensation is less needed. Last but not least, we control for the effects of other board characteristics such as board independence, owner representatives and female directors on the boards and the potential endogeneity problem

of the main independent variable, i.e., the employee participation on the boards.

Although we examine Swedish companies in particular, this study has implications for a wider international readership. Employee representation in corporate boards is not uncommon in Europe. In no less than 18 countries within the European Economic Area, employees have widespread or limited legal rights to be represented at the board level (Vitols, 2010). Furthermore, the issue of board level employee representation is not merely an item for national political agendas, but is repeatedly being dealt with in the evolution of European company law (Conchon, 2011). Increased understanding of the effects of employee representation should therefore be important in the international policy debate.

This paper also contributes to the accounting and corporate governance literature in three main ways. First, we contribute to the literature on accounting quality by providing evidence on how employee representation contributes to better board monitoring of financial reporting. Second, we add to the literature on the importance of board diversity as employee representatives show characteristics distinct from those of other board members, particularly with respect to their incentive to transfer firm-specific knowledge to other board members. Third, we contribute to the literature on board independence and CEO compensation by providing evidence on the limited use of equity incentive compensation for CEOs in firms with employee participation.

The rest of the paper proceeds as follows. Section 2 describes the institutional setting and the characteristics of Swedish firms with respect to codetermination. Section 3 outlines relevant previous research and develops the hypotheses of the study. Section 4 presents the research design, and section 5 describes the data sample. Section 6 reports the main results, while section 7 contains additional analyses and robustness checks. Section 8 concludes the paper and suggests further research.

2 THE INSTITUTIONAL SETTING IN SWEDEN

A distinctive feature of the corporate governance system in Sweden is the system of codetermination, which is regulated by two different legal acts (Carlsson, 2007). First, the Act on board representation (*Lag om styrelserepresentation,*

LSA), enacted in 1976 and modified in 1987, gives employees the right to have representatives on the board of directors. This law explicitly stipulates that employees are allowed to appoint two representatives and two deputies to the board of a company that employs no less than 25 workers, and, as of 1987, three representatives and three deputies in companies with 1,000 employees or more. The main purpose of this legal reform is to provide employees, supported by their union organizations, with a greater insight into the company policy and decision-making, as well as to promote the same assignments, duties, rights and responsibilities for employee representatives as those for other members of the board (Levinson, 2001).

Second, the Codetermination Act (*Medbestämmandelagen, MBL*), enacted in 1976, is directly related to codetermination and the right of information and negotiation given to local unions. Based on this law, employees should be informed and be allowed to negotiate with management with respect to operational issues that concerns the employees' interests (Carlsson, 2007). This Act also makes the Swedish setting different from the much-studied US setting. This is important because a large body of research mainly considers the US setting and examines the role of strong unions on decision-making in firms (e.g., Bova, 2012; DeAngelo and DeAngelo, 1991; D'Souza et al., 2000; Hilary, 2006). The lack of legal support for codetermination in the US, however, implies that only forceful unions will have the possibility to negotiate collective bargaining contracts with firms. For the same reason, they are presumably also more likely to be able to redirect value from investors to employees. The Swedish model of codetermination, on the other hand, has two main features. First, in the Swedish governance system, employee representatives at the board level are elected among the employees of the firm with firm-specific human capital. Second, these employee representatives are not part of the boards to provide a strong influence from unions; instead, they are subject to the same legal obligations as the other directors. As is clearly stated by Carlsson (2007, p.1039):

> A fundamental reason why the LSA and MBL are working so well is that employee involvement and representation on the board are local at the business unit or company level. There is no involvement from unions above the local or company level. The employee representatives know the business and are still active in company operations.

The attendance of employee representatives on the board can therefore positively contribute to the board's work, particularly if there is a lack of executives on the board of directors. In the Swedish corporate governance system, it is uncommon to have executive participation on the board, mainly because of the recommendations of the Code of Corporate Governance in Sweden. The Code states that the majority of board members must be independent of the company and its management, while at least two directors should also be independent of the company's major shareholders. Hence, employee representatives could be valued by the outside board members, since they are active as employees in the company and have a good knowledge regarding the company's business. In the next section, we appraise the role of employee representatives on the boards and develop our hypothesis.

3 LITERATURE AND HYPOTHESIS DEVELOPMENT

3.1 Employee representatives and CEO incentive compensation

Prior research suggests that the ownership structure and the board structure can affect executive compensation by providing stronger monitoring. In particular, investors with larger ownership stakes have greater incentives to directly monitor firm insiders and mitigate agency costs (Core et al., 1999; Ke et al., 1999). Furthermore, other monitoring mechanisms such as independent directors can limit managerial opportunism in general (Fama, 1980; Fama and Jensen, 1983) and excess compensation in particular (Brown and Lee, 2010; Core et al., 1999; Faleye et al., 2011; Mehran, 1995). The board of directors should assess managers' performance and provide them with well-designed compensation plans (Adams et al., 2010). However, large payouts to CEOs and the weak pay-performance relation have been criticized in literature and, in particular, the boards of directors and their monitoring role have been the center of attention. Specifically, according to the managerial power view, a CEO's negotiation power in determining his or her pay package and the lack of independent directors are considered the main reasons for large payouts to CEOs (Bebchuk and Fried, 2004; Goergen and Renneboog, 2011).

This issue has been the subject of a large body of research (e.g., Brown and Lee,

2010; Conyon and He, 2011; Core et al., 1999; Mehran, 1995; Yermack, 1996), which concludes that executives with control and power over the board of directors receive excess compensation. In particular, it is suggested that more outside or independent directors should sit on the boards of directors to better monitor managers in receiving excess compensation. Furthermore, board monitoring and incentive-based compensation schemes are likely substitute corporate governance mechanisms. Fama (1980) views the board of directors as a market-induced institution with the main role of monitoring the highest decision-makers. This means that if this institution provides efficient monitoring, other costly mechanisms are less necessary. An independent board of directors offers an alternative governance mechanism. Accordingly, in boards with a greater direct monitoring capability, variable remuneration schemes are likely to be less used to incentivize the CEO (Cohen et al., 2013; Dicks, 2012).

While prior research typically has considered the monitoring role of outside directors (see, Adams et al., 2010; Hermalin and Weisbach, 2003), less attention has been given to how other stakeholders, such as employees, contribute to monitoring CEO compensation. There are several arguments why employee representatives could contribute to more efficient compensation monitoring. Employee representatives are independent, informed and incentivezed. They are independent members with respect to both managers and major owners of the firms (similar to outside directors). Through their daily involvement in operations, they facilitate the transfer of information and improve the board's decision-making (Fauver and Fuerst, 2006). Employees, deriving their income from and having more human capital tied to the firm, also have stronger incentives to monitor managers and exercise control over different corporate policies (Acharya et al., 2011).

In a few studies, the relationship between CEO compensation and union contracts has been examined. These studies indicate that the presence of unions within a firm is associated with lower levels of total executive compensation and substantially lower stock option rewards (Banning and Chiles, 2007; Gomez and Tzioumis, 2006). Analogously, the presence of employee representatives on the board may mitigate the need for other monitoring mechanisms, such as incentive packages. Having direct access to inside information via employee representatives on the boards substitutes the need to align managerial and shareholder interests through incentive-based compensation.

Moreover, employee representatives are similar to managers in one respect – they

obtain the lion's share of their income from the particular firm and are exposed to idiosyncratic risk. Therefore, risk-averse employees likely promote diversification within the firm (cf., Aggarwal and Samwick, 2003) and other risk reducing policies. Faleye et al. (2006) studied the effect of labor unions on corporate governance specifically and they found that a labor voice in corporate governance is associated with a significant reduction in corporate risk-taking. Incentive-based compensation schemes, in contrast, are typically designed to promote risk-taking. In fact, CEOs who hold shares and options as part of their compensation, may participate in inefficient risky investment projects to increase short-term share price volatility and gain excessive compensation (Bebchuk and Fried, 2004). It is thus plausible that employee representatives tend to discourage the use of incentive pay.

From the above discussion, one could expect that employee representatives would try, to the degree they are capable, to curb both excessive pay to managers and the adoption of incentive-based remuneration. Whether this expectation also can be supported empirically, is something we address by testing the two following hypotheses:

H1a.The presence of employee representatives on the board is associated with lower excess compensation for CEOs.

H1b.The presence of employee representatives on the board is associated with less use of incentive based compensation to CEOs.

3.2 Employee representatives and earnings quality

Higher quality earnings, one of the primary and fundamental accounting features, have important implications for the transparency and information quality of firms. Specially, the nature and extent of accounting accruals are considered important elements in predicting future performance (Dechow and Dichev, 2002). However, the quality of accruals is embedded in accounting choices, which are contingent on managerial discretion. Opportunistic managerial behavior through earnings management can restrain the quality of accruals and thereby the ability of earnings to predict future performance (Dechow et al., 1995; Jones, 1991). Therefore, previous research has considered the importance of corporate governance, particularly the role of the board of directors, concerning the quality of firms' reporting

decisions (Brown and Caylor, 2006; Klein, 2002; Larcker et al., 2007). In this respect, various features regarding the structure of the boards are covered in the literature. In this paper, we focus on the importance of diversity on the board by specifically evaluating the role of employee representatives, which has not been examined before.

Several studies have examined the relationship between the board's structure and the quality of earnings (e.g., Ball et al., 2000; Brickley et al., 1994; Klein, 2002; Larcker et al., 2007; Peasnell et al., 2005; Xie et al., 2003). This research indicates that the structure of the board of directors and the audit committee determines to what degree board members monitor the financial reporting of firms. In particular, the independence of board members is emphasized in the literature as a driver of earnings quality. For example, Klein (2002) shows a significant negative relationship between the proportion of outside directors on the board and abnormal accruals. Dechow et al. (1995) examine various motives for and consequences of earnings manipulation in firms that were subject to accounting enforcement actions. They document that the number of incidences of earnings management is related to weaknesses in corporate governance. Furthermore, an independent board of directors mitigates the possibility of earnings management and enhances the quality of accounting earnings.

In addition, the effect of board diversity on monitoring performance of boards has been examined in recent literature (e.g., Adams and Ferreira, 2009; Gul et al., 2011; Srinidhi et al., 2011). For instance, Adams and Ferreira (2009) focus on female board members and they find that female representation enhances the boards' monitoring of managers. Similarly, Srinidhi et al. (2011) and Gul et al. (2011) argue that more gender diverse boards improve the monitoring process which results in higher earnings quality in these firms. Considering the recent research that investigates how board diversity affect the boards' monitoring effectiveness, we examine an important, yet less noticed, aspect of board diversity, i.e., employee representation.

Edling et al. (2012) argue that there are several pieces of legislation in the Scandinavian setting (Sweden, Norway, Denmark) that limit the preservation of an "old-boys network" (implying a social elite, including individuals with similar background, shared norms and beliefs in a homogeneous environment). For example, all three countries have regulations giving rights to employees to have representatives on the boards. Edling et al. (2012) further suggest that the pres-

ence of employee representatives on the board of directors has also increased the diversity of the boards by increasing the fraction of female directors on the board.

We focus on the quality of financial reporting when boards include employee representatives and provide various reasons why these board members contribute to the boards' monitoring of financial reporting quality. First, employee representatives with firm-specific knowledge contribute to the function of the boards on the whole. Experienced employees can provide outside board members with knowledge from inside the firms and at the same time be independent with respect to management. Hence, the transfer of information from employee representation is expected to contribute to improved monitoring by the boards. Furthermore, employee representatives on the board introduce different perspectives and can thereby enhance the quality of communication inside the boardroom. A better-informed board of directors with better communication is expected to improve the quality of accounting earnings.

Second, the risk-averse behavior of employee representatives and union members also has implications for the monitoring of accounting earnings. Poorer earnings quality are associated with higher levels of risk, and lower valuations will follow (Francis et al., 2005; Gaio and Raposo, 2011). Furthermore, when facing earnings with lower quality, the firm and its directors are more exposed to litigation risks (Srinidhi et al., 2011). Therefore, in boards with employees represented, one could expect a higher demand for a higher quality of earnings for purposes of risk reduction compared to boards without employee representation.

Third, given that employee representatives provide a link between firms and labor unions, they can be considered additional monitors of managers' actions. Being under more scrutiny from a board of directors that includes employee representatives, managers are more inclined to provide high quality accounting information. Therefore, a possible earnings management and opportunistic behavior in these firms for withholding relevant information is mitigated. Liberty and Zimmerman (1986) examined earnings management behavior of firms with labor contract negotiation. They predicted that managers in these firms would try to manage earnings downward prior to union contract negotiations. Their results, however, did not support this hypothesis. Among several reasons, they proposed that union members have incentives to *undo* management's manipulations of accounts. In our setting, union members are also able to sit on the board, which should enhance their ability to counteract such earnings management even further.

Employee representation could also contribute to improved accounting quality indirectly. For instance, Jung et al. (2014) find a positive and significant relationship between accounting quality and labor investment efficiency and state that this relationship is even stronger in unionized firms. They explain that union effect derives from the fact that collective agreements make wages sticky and layoffs more costly. This, in turn, dampens the propensity to hire and makes it more costly to adjust the labor force to external shocks. Good accounting quality becomes even more important in unionized firms to promote labor investment efficiency. Therefore, the presence of employees on boards, with the increased possibility to exercise influence decisions on adjustments of the workforce, will contribute to increased demand for higher accounting quality from investors to promote labor investment efficiency.

From this discussion we conclude that arguments related to better information transfer, risk aversion, and the enhanced capability to voice diverging opinions indicate that employee representation should foster improved earnings quality. Accordingly, we hypothesize that:

H2. The presence of employee representatives on the board of directors is associated with a higher quality of accounting earnings.

4 RESEARCH DESIGN

CEO compensation

In testing the CEO compensation monitoring hypothesis, we firstly focus on the excess CEO compensation. This hypothesis assumes that the strength of board monitoring in improving the executive compensation practice should negatively affect the excess compensation of CEOs. Following prior research (e.g., Core et al., 1999; Faleye et al., 2011; Kim et al., 2014), we estimate excess compensation, using residuals from the model predicting benchmark pay, including economic determinants of executive pay (Eqs.1).

$$Comp_{it} = \delta_0 + \gamma_1 LnTotalAssets_{it} + \gamma_2 MTBV_{it} + \gamma_3 ROA_{it} + \gamma_4 RET_{it} + \gamma_5 SDROA_{it} + \gamma_6 SDRET_{it} + \epsilon_{it} \quad (1)$$

Following Core et al. (1999), we include firm size, measured by total assets ($LnTotalAssets_{it}$); return on assets (ROA_{it}) and stock return (RET_{it}), as two proxies for firm performance; the standard deviation of both performance measures over the preceding five-year period ($SDRET_{it}$ and $SDROA_{it}$), as the proxies for firm risk (indicating the risk of the firm's information environment as well as its operating environment); and growth opportunities, measured as market-to-book ratio ($MTBV_{it}$). The residuals from Eqs.1 provide an estimation of excess pay that is used as a dependent variable in the following model.

$$ExcessComp_{it} = \alpha_0 + \alpha_1 ERR_{it} + \gamma' ControlVariables_{it} \quad (2)$$

In this model (Eqs.2), ERR_{it} is the percentage of employee representatives on the board[2]. We also control for the effect of governance characteristics (i.e., board of director composition and ownership structures) and other firm as well as CEO characteristics (i.e., CEO age and CEO tenure).

Furthermore, we replace the compensation variable in Eqs.2 with CEO incentive-based compensation. Given that employee representatives contribute to the boards' monitoring performance, variable compensation is expected to be less needed. We examine this negative association using the ratio of CEO bonus pay to total cash pay (based on a tobit model[3]) and the use of CEO equity-based compensation (based on a probit model[4]) as the dependent variables in the main model (Eqs.2) and examine the effect of *ERR* on the structure of CEO compensation, specifically on the variable components.

[2]It is expected that as the size of the boards becomes larger, employee representatives (maximum two to three members) have less influence on the boards. Hence, examining the effect of the proportion of these members on the boards provides more evidence.

[3]Following (Jackson et al., 2008), we estimate the equation of bonus ratio using the tobit model. Bonus ratio is left-censured at zero, meaning that this variable includes many observations with zero value.

[4]For equity-based compensation, it is hard to build a complete database for executive compensation plans in Swedish listed firms because of the lack of available information of stock and option plans, separately, for CEOs in the annual reports of most of the companies. Therefore, we have included a dummy variable, indicating whether CEOs are provided with any equity-based compensation plans.

Accruals quality

In perceiving the role of financial reporting as being informative and transparent, earnings quality plays an important role. Firms measure earnings using accruals, which aim to increase the relevance and informativeness of financial reporting. However, the determination of accruals involves managerial discretion that may result in distortion of earnings, e.g., to increase their earnings-based bonuses (Healy, 1985). The quality of earnings is therefore conversely related to the increase in discretionary accruals, which indicates the extent of bias infused into financial reports by managers (Dechow et al., 1995; Jones, 1991).

Consistent with extant research that investigates the relationship between earnings management and corporate governance (e.g., Cormier et al., 2014; Faleye et al., 2011; Kim et al., 2014), we adopt the modified Jones model developed by Dechow et al. (1995). Furthermore, we adjust this model and control for the effect of firm performance following the approach suggested by Kothari et al. (2005). Kothari et al. (2005) suggest controlling for lagged return on assets (ROA) in the modified Jones model due to the concern about the correlation between performance and residuals (Dechow et al., 2010). Furthermore, we include the intercept in both models as recommended by Kothari et al. (2005). Models below (Eqs.3 and Eqs.4) present the modified Jones model (Dechow et al., 1995) and the performance-adjusted model (Kothari et al., 2005), respectively. Specifically, we estimate the following annual cross-sectional models for each group of industry classification benchmarks (ICB):

$$\frac{TA_{it}}{Assets_{it-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{Assets_{it-1}} + \beta_3 \frac{PPE_{it}}{Assets_{it-1}} + \epsilon_{it} \tag{3}$$

$$\frac{TA_{it}}{Assets_{it-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{Assets_{it-1}} + \beta_3 \frac{PPE_{it}}{Assets_{it-1}} + \beta_4 ROA_{it-1} + \epsilon_{it} \tag{4}$$

where TA_{it} indicates total accruals for firm i in year t, calculated as the change in non-cash current assets minus the change in current liabilities minus depreciation and amortization ($TA_{it} = [\Delta CurrentAssets_{it} - \Delta Cash_{it}] - [\Delta CurrentLiab._{it} - \Delta Short.TDebt_{it}] - Depreciation$); $Assets_{it-1}$ is total assets for firm i in year $t-1$; ΔREV_{it} is equal to change in sales for firm i between year $t-1$ and year t; ΔREC_{it} presents change in accounts receivable for firm i between year $t-1$ and year t;

PPE_{it} is gross property, plant and equipment for firm i in year t; and ROA_{t-1} indicates lagged return on assets.

The residuals from estimating Eqs.3 and Eqs.4 provide estimations of discretionary accruals (DA_{it}). Expecting that earnings management involves either income-increasing or income-decreasing accruals, we follow previous research (e.g., Kim et al., 2012; Klein, 2002; Srinidhi et al., 2011; Ye, 2010) and estimate the absolute value of residuals. The absolute value of residuals is then used in our main model that represents an inverse measure of financial reporting quality. In other words, an increase in absolute value of residuals implies lower earnings quality.

$$DA_{it} = \delta_0 + \delta_1 ERR_{it} + \gamma' ControlVariables_{it} + \upsilon_t \tag{5}$$

In the above model (Eqs.5), DA_{it} represent the abnormal accruals, obtained as the residuals from the accrual quality models (Eqs. 3 and 4). The variable of interest is ERR_{it}, which indicates the percentage of employee representatives on the boards. We include firm characteristics in this model that previous research identifies as factors that affect the extent of accruals (e.g., Cohen et al., 2013; Kim et al., 2012; Klein, 2002). Specifically, we use logarithm value firm market value ($LnMV$) as a proxy for firm size, firm's financial leverage (LEV), a dummy variable equal to one for firms reporting negative earnings ($DLoss$), and market-to-book ratio ($MTBV$). We also control for several corporate governance factors that have been considered in previous research. In the next section, a detailed definition of control variables is presented.

Control variables

We control for the effects of other board characteristics, ownership structures, and firm factors by including several variables. With respect to board structures, we first control for board size (*Board size*). The empirical research on the effect of board size on the board's monitoring ability is mixed. Yermack (1996) argues that larger boards are inefficient due to higher communication and coordination costs. However, as argued by Xie et al. (2003), even though smaller boards may be more functional in providing more monitoring over managers, larger boards may incorporate a broader range of experience and thereby promote the monitor-

ing of managers. Hence, no directional prediction is made for board size. Prior research argues that the CEO being part of the board of directors negatively affects the monitoring of the board (Brickley et al., 1994). Hence, we also control for the presence of the CEO on the board of directors by including an indicator variable, equal to one if the CEO is a member of the board and zero otherwise (*CEO on Board*). Furthermore, the percentage of outside directors on the board is considered an important indicator of the monitoring incentives of the board of directors (e.g., Core et al., 1999; Klein, 2002; Peasnell et al., 2005; Xie et al., 2003). Non-executive directors, due to no affiliation with the CEOs and more concerns for their reputations, are expected to contribute to the monitoring function of the boards. However, a precise definition of independent directors not only includes executives on the board but also considers the presence of large owners on the board (Conyon and He, 2011). Thus, we measure the percentage of independent members on the board, considering those members that have no affiliation to either executives or large owners (*InDepDR*). In addition, since the chairperson on the board of directors usually represents the largest owners of firms in Sweden, we separately control for this factor including a dummy variable (*Dep_Chair*). The role of female directors in improving the monitoring of financial reporting has been recently studied and found to be associated with better oversight of manager's reporting (e.g., Adams and Ferreira, 2009; Srinidhi et al., 2011). Hence, we also include the percentage of female directors on the boards in the accruals models (*FDonBoard*). Finally, having separate board committees (i.e., compensation and audit committees) is recommended in corporate governance guidelines for improving the monitoring ability of the boards. Therefore, we include a dummy variable equal to one for firms in which the boards have audit and compensation committees and zero otherwise (*Committees*).

Regarding the firm ownership structures, prior research suggests that firms that are highly concentrated and controlled by blockholders and family owners are less likely to engage in excess compensation and earnings manipulation due to monitoring incentives of the largest shareholders (Ali et al., 2007; Core et al., 1999; Wang, 2006). In particular, in Sweden, the extent of concentrated ownership structures and the role of family owners are considerable. Hence, in regression models, we control for several ownership variables, which we expect to have negative effects on CEO excess compensation and discretionary accruals. *Capital largest* represents the percentage of shares held by the largest owners of firms. *Family*

firm is a dummy variable equal to one if the largest owner of the firm (holding at least 10% of cash-flow shares) is a family owner and zero otherwise. *Second largest* is a dummy variable equal to one if the firm has more than one largest owner (holding at least 10% of cash-flow shares) and zero otherwise.

Finally, several firm-specific characteristics are controlled in regression models, including firm size, measured by natural logarithm of firm market value (*LnMV*) or natural logarithm of total assets (*LnTotalAssests*); growth opportunities, determined by logarithm value of market-to-book ratio (*LnMTBV*); leverage, calculated by the ratio of total debt to total assets; firm performance, measured by profitability (*ROA*) and stock return (*RET*); and firm age. Definitions of the variables in this study are presented in Appendix I.

5 SAMPLE AND DESCRIPTIVE STATISTICS

The sample consists of listed companies on the Stockholm Stock Exchange for the five-year period (2005-2009). These firms follow the governance requirements provided by the Swedish Corporate Governance Code and the Swedish Company Act, which require the disclosure of information with respect to the structure of boards. Hence, data related to the size and composition of the boards of directors are available and hand-collected from annual reports and corporate governance reports. Furthermore, the information regarding executive compensation is disclosed in annual reports of firms, following the requirements of the Swedish Annual Accounts Act. Hence, the remunerations of CEOs are also hand-collected from the annual reports. Finally, accounting and market data is obtained from Worldscope and Datastream.

The initial sample consists of 1227 firm-year observations. From this sample foreign companies are excluded since they might follow other country-specific rules. Furthermore, banks are excluded since they are subject to higher regulatory scrutiny. Last but not least, for some variables, particularly those collected from Worldscope and Datastream, there are missing values, so these observations are dropped in different regression analyses. Table 1 presents the sample composition and the distribution of observations by years and two-digit industry classification benchmark (ICB).

Table 1. Sample composition

Panel A: Sample composition							
1	Initial firm-year observations for years 2005-2009						1247
2	Less non-Swedish firms						-63
3	Less Banks						-20
Panel B: Distribution of observations by fiscal years							
Year		2005	2006	2007	2008	2009	Total
Number of firms		228	238	238	234	226	**1164**
Panel C: Distribution of observations by Industry composition							
ICB	Industry Descriptions			With ER	Without ER		Total
13	Chemicals			0	4		4
17	Basic Resources			43	8		51
23	Construction & Materials			51	10		61
27	Industrial Goods & Services			155	144		299
33	Automobiles & Parts			15	5		20
35	Food & Beverage			11	0		11
37	Personal & Household Goods			36	32		68
45	Health Care			39	86		125
53	Retail			30	38		68
55	Media			8	18		26
57	Travel & Leisure			15	22		37
65	Telecommunications			12	13		25
86	Insurance and Real Estate			11	77		88
87	Financial Services			8	106		114
95	Technology			44	123		167
Total				**478**	**686**		**1,164**

Note:
Panel A, in Table 1, reports the sample composition and the excluded items from the initial sample of this study. In Panel B the yearly distribution of firms and in Panel C the industry classification of firms by two-digit industry classification benchmark (ICB) are presented. Panel C shows firms with employee representatives (ER) on the boards in each industry; firms without ER on the boards in each industry; and the industry classification of the whole sample.

Table 2 presents the descriptive statistics of variables, for the whole sample as well as in sub-samples of firms with employee representatives (ER) on the board and those without. In 41% of the firms in the sample, employees have at least one representative on the board. This implies that more than half of the sample do not include any ER on the boards. This number is surprising despite the legal support for employees having the same rights and responsibilities as those for other directors on the boards.

In the sub-sample of firms with ER on the board, the number of these representa-

tives varies from 0 to 4, and the average percentage of employee representatives on the boards in these firms is around 23%. Boards of directors in the sample consist of 7 directors, on average, but the size of the boards with ER is larger and include an average of 9 members. The percentage of independent directors as disclosed in the annual reports is 69% on average. Yet, in approximately 44% of the firms in the sample, the chairperson is the representative of the largest shareholder, suggesting a considerable influence of the largest owners on the boards of directors. Furthermore, CEOs sit on the boards in 56% of the firm-year observations, and this percentage is higher (around 69%) in boards with ER. On average, the largest shareholder holds 24% of firm cash-flow rights, and in almost 40% of firm-year observations, second largest shareholders hold at least 10% of cash-flow rights. In 57% of the firm-year observations, CEOs are provided with equity-based compensation, and almost 16% of CEO cash compensation derives from bonuses or profit-sharing plans.

With respect to firm characteristics, the mean (median) firm age is 33 (20) years in the overall sample. However, firms with ER on the board are, on average, older (46 years compared to 24), suggesting that older firms are more likely to have employees on the boards. Return on assets (*ROA*), which is winsorized at the 1st and 99th percentiles, has a mean of 3.52% in the whole sample and is somewhat larger in the sample of ER firms (5.31%). The average firm in our sample has total assets of 12 373 million SEK (in logarithm value 14.41). However, comparing this value for the sub-sample of ER firms indicates that there are considerable size differences, and firms with ER on the boards are larger in total assets

Fixed assets (PPE) are 21% of total assets on average. Total accruals TA (scaled by lagged total assets) has the mean (median) of -0.028 (-0.023). In general, a glance at the standard deviations of financial characteristics reveals a considerable variation in financial variables in the sample. In Appendix II, the correlation matrix of all variables of this study is reported. The Pearson correlation matrix indicates that firm age, firm size and board size are positively correlated with the percentage of employee representatives on the boards. This suggests that local unions are less likely to appoint employee representatives on smaller firms, which is expected because the number of possible candidates is less in small firms. Furthermore, standard deviations of *ROA* and $RETURN$ are negatively correlated with *ERR*, indicating that in firms exposed to higher performance volatility and risks, employee participation on boards is lower.

Table 2. Descriptive Statistics

Statistics	Full sample (*N*=1162)			At least one ER on the board (*N*=478)			No ER on the board (*N*=686)		
Board structure	**Mean**	**Median**	**Std Dev**	**Mean**	**Median**	**Std Dev**	**Mean**	**Median**	**Std Dev**
D_ER	0.411	0	0.492	1	1	0	0	0	0
Emp_rep	0.893	0	1.134	2.176	2	0.585	0	0	0
ERR	9.64	0	11.99	23.48	23.07	4.98	0	0	0
Boards Size	7.377	7	2.178	9.289	9	1.702	6.045	6	1.308
Committee	0.686	1	0.464	0.816	1	0.388	0.595	1	0.491
InDepDR	69.09	66.66	17.73	71.70	70	14.98	67.26	66.66	16.23
CEOonBoard	0.564	1	0.496	0.695	1	0.461	0.474	0	0.500
FDonBoard	18.99	20	13.73	22.78	22.22	13.97	16.35	16.66	12.93
Dep_Chair	0.439	0	0.496	0.469	0	0.500	0.418	0	0.494
Ownership structure									
CapitalLargest	23.983	20.6	16.643	23.220	20.15	14.266	24.515	20.7	18.108
Dual	0.506	1	0.500	0.556	1	0.497	0.472	0	0.500
SecondLargest	0.406	0	0.491	0.441	0	0.497	0.381	0	0.486
family firm	0.636	1	0.481	0.628	1	0.484	0.642	1	0.480
CEO Compensation									
EBC	0.576	1	0.494	0.563	1	0.497	0.586	1	0.493
Rbonus	0.165	0.119	0.183	0.185	0.183	0.163	0.150	0.058	0.194
LnPay	14.938	14.879	0.784	15.285	15.22	0.713	14.66	14.622	0.737
CEO tenure	5.824	4	6.468	5.634	4.0	6.47	5.95	4	6.467
CEOAge	49.27	49	7.064	50.48	50.0	6.519	48.43	47	7.307
CEOshare%	3.994	0.19	9.713	1.506	0.045	4.900	5.775	0.45	11.713
Firm Characteristics									
RETURN	0.188	0.11	0.637	0.178	0.130	0.592	0.194	0.1	0.666
ROA	3.522	6.89	17.29	5.314	6.955	13.053	2.265	6.75	19.638
Total Assets (MSEK)	12373	1419	34717	21173	2810	48612	6245	788	17597
LnTotal Assets	14.42	14.17	1.96	15.18	14.85	1.857	13.89	13.58	1.85
SDRET	0.494	0.415	0.295	0.438	0.378	0.251	0.532	0.441	0.317
SDROA	9.526	5.477	11.538	6.261	3.997	6.650	11.854	6.970	13.551
LnMTBV	0.655	0.631	0.902	0.700	0.735	0.825	0.622	0.565	0.952
lnMV	6.793	6.856	2.440	7.655	7.780	2.513	6.152	6.082	2.175
RDtoSale	0.124	0	0.583	0.112	0	0.616	0.129	0	0.559
LEV	0.516	0.523	0.450	0.556	0.585	0.177	0.488	0.463	0.567
FirmAge	33.54	20	28.14	45.81	40.50	32.22	24.99	17	21.04
Financial Characteristics									
TA (a)	-0.028	-0.023	0.220	-0.023	-0.031	0.125	-0.031	-0.019	0.271
PPE (b)	0.212	0.110	0.281	0.235	0.176	0.208	0.210	0.063	0.323
CFO (b)	0.059	0.073	0.141	0.073	0.085	0.118	0.049	0.058	0.155
Δ Sale (b)	0.077	0.062	0.305	0.056	0.064	0.238	0.091	0.062	0.343
OC	154.2	135	95.6	142.129	133.5	67.7	165.6	136	114.766

Note:
This table presents the descriptive statistics (mean, median and standard deviation) of the key dependent and independent variables, in the whole sample as well as sub-sample of firms with employee representatives (ER) and without ER.
(a) scaled by lagged total assets; (b) scaled by average total assets
Detailed variable definitions are in Appendix I.

6 EMPIRICAL RESULTS AND ANALYSES

6.1 CEO compensation regressions

Table 3 presents results for the CEO excess compensation model. Specifically, in panel A, the economic determinants of CEO cash compensation are specified and the residuals are predicted that explain the excess compensation (in logarithm). As expected, we find a positive and significant association between cash compensation and firm size ($LnTotalAssets$), market-to-book value ($MTBV$), and performance ($RETURN$).

Panel B presents the effects of governance factors and particularly the effect of employee representatives on excess cash compensation. It is expected that in firms with efficient monitoring mechanisms through the structure of ownership or the boards of directors, the CEOs' ability to extract rents in terms of excess CEO compensation is limited (Core et al., 1999). In particular, the negative and significant (at a 1% level) coefficient of *CapitalLargest* suggests that in firms with concentrated ownership, excess compensation is limited. Furthermore, *Dep_Chair*, indicating the boards with chairs who are representatives of the largest shareholders, has a negative and significant coefficient, suggesting the important influence of large owners on boards in limiting excess CEO cash compensation. However, other features of the boards of directors, and in particular the variable of interest *ERR*, indicate no significant results. This suggests that employee representatives on the board of directors do not have strong voices on the level of CEO cash compensation and lessening excess cash payments to the CEO.

Next, in Table 4, we focus on the CEO incentive compensation (i.e., CEO bonus and equity-based compensation). Specifically, the dependent variable in the first model is *RBonus*, which presents the ratio of bonus to total CEO cash pay. In the second model, we examine the probability of equity-based compensation, considering an indicator variable (EBC) as the dependent variable.

The results show that, consistent with the substitute governance hypothesis, CEO incentive compensation is less likely to be used in firms with direct monitoring of the large shareholders and boards of directors. In particular, the results show that the percentage of capital shares held by the largest owners, *CapitalLargest*, is associated with less variable compensation, either in the form of bonus ratio

Table 3. Excess CEO Compensation

Panel A: Economic determinants of total cash compensation		
VARIABLES	coeff.	t.stat
LnTotalAssets	0.319***	(17.67)
ROA	-0.002	(-0.923)
RETURN	0.164***	(4.445)
SDRET	-0.083	(-0.798)
SDROA	0.002	(0.871)
LnMTBV	0.133***	(4.069)
Observations	949	
Adjusted R-sqd.	0.551	
Panel B: Excess cash compensation		
VARIABLES	coeff.	t.stat
ERR	-0.001	(-0.330)
FirmAge	-0.002**	(-2.154)
CapitalLargest	-0.009***	(-3.832)
SecondLargest	-0.073	(-1.430)
Dual	0.042	(0.828)
Familyfirm	0.039	(0.743)
Boardsize	0.033	(1.688)
Committees	-0.025	(-0.411)
CEOonBoard	-0.022	(-0.302)
InDepDR	-0.002	(-0.801)
Dep_Chair	-0.142**	(-2.226)
CEOAge	0.003	(0.659)
CEOtenure	-0.003	(-0.700)
CEOshare%	-0.018***	(-4.715)
Observations	914	
Adjusted R-sqd.	0.211	

Note:
This table reports results from Pooled OLS regressions, the coefficient estimates and *t*-statistics based on the clustered standard errors (by the firm level), in order to control for correlation of residuals over the firms. Panel A in this table presents the regression of CEO cash compensation as a function of the economic determinants of executive pay. The dependent variable in panel A is the natural logarithm of cash pay (salary+bonus). The economic determinants of compensation include: $Size$, measured by logarithm of total assets of firm; accounting performance, measured by return on assets ROA; market performance, measured by stock return $RETURN$; firm risks, measured by standard deviation of both performance measures $SDRET$ & $SDROA$; and growth opportunities, measured by logarithm of market to book value ratio $LnMTBV$. Panel B, presents the main model related to monitoring effect of employee representatives on excess CEO compensation. The dependent variable in this model in the residual from the regression in panel A. The variable of interest is the proportion of employee representatives on the board ERR. All other variables are described in Appendix I. All regressions include years and industry dummies. Robust t-statistics are presented in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

or the use of equity-based compensation. In family firms, CEOs are provided with a smaller proportion of variable pay in terms of bonuses, and firms with the second largest shareholders are also less likely to provide CEOs with equity-based compensation plans.

Table 4. CEO incentive compensation structure

	Model 1 (Tobit Rbonus)		Model 2 (Probit EBC)	
VARIABLES	ME	t.stat	ME	z-value
ERR	-0.001	(-0.791)	-0.006**	(-2.109)
ROA	0.002***	(3.426)	-0.002	(-1.247)
RETURN	0.064***	(5.069)	0.012	(0.392)
LnTotalAssets	0.027***	(4.138)	0.033	(1.577)
LEV	-0.009	(-1.245)	0.073	(1.082)
RDtoSale	-0.014	(-0.685)	0.121*	(1.935)
FirmAge	-0.001**	(-2.485)	0.002	(1.549)
CapitalLargest	-0.001**	(-2.402)	-0.005**	(-3.233)
Dual	0.020	(1.333)	-0.025	(-0.446)
Familyfirm	-0.033**	(-2.077)	0.093*	(1.754)
Secondlargest	-0.018	(-1.162)	-0.105**	(-2.049)
Boardsize	0.007	(1.254)	0.024	(1.130)
InDepDR	-0.001	(-1.417)	-0.000	(-0.228)
Dep_Chair	-0.064***	(-3.792)	-0.049	(-0.903)
CEOonBoard	-0.008	(-0.410)	-0.065	(-0.989)
Committees	0.024	(1.206)	0.006	(0.110)
CEOAge	-0.003***	(-2.802)	-0.008**	(-2.350)
CEOtenure	0.001	(0.668)	-0.008**	(-2.116)
CEOshare%	-0.005***	(-3.932)	-0.0004	(-0.114)
Observations	1,061		1,059	
Pseudo R-sqd.	0.466		0.187	

Note:
This table presents the effect of variables on incentive compensation. In Model 1, the dependent variable is the ratio of bonus to total cash compensation (*Rbonus*). Tobit model is used to estimate the equation of the bonus ratio. The bonus ratio is left-censured at zero, meaning that several companies provide no bonus for CEOs. The marginal effects are calculated for the tobit model, correcting for the corner solution. In Model 2, the dependent variable is a dummy variable equal to one if firms have equity incentive plans and zero otherwise (*EBC*). The marginal effects are also calculated for the probit model and are presented in the table. Independent variables are described in Appendix I. In all regressions standard errors are clustered by firm level and all regressions include years and industry dummies. Robust t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Regarding the board structure variables, the presence of a dependent chairperson, with respect to the largest owners, is negatively related to the extent of bonus that CEOs receive. Importantly, the proportion of employee representatives on the boards has also a negative and significant (at a 5% level) impact on the probabil-

ity of CEOs receiving equity incentive compensation. This result suggests that, controlling for other firm and governance factors, equity incentive plans are less likely to be provided in firms in which employee representatives are part of the board of directors.

Consistent with the substitute monitoring hypothesis, in firms with direct control of stakeholders, equity-based compensation may be less necessary. Furthermore, equity incentive compensation is typically designed to promote risk-taking by executives. The negative association between *ERR* and the probability of *EBC* also suggest that employee representatives, who are usually risk-averse employees, require less of inventive compensation for CEOs to decrease excessive risk-taking behavior. In sum, the results generally indicate that the presence of employees on the boards has no discernible effect on the level of CEO cash compensation. However, there is some evidence that the mix of pay, in particular, with respect to less usage of equity incentive for CEOs is affected by the proportion of employee board members.

6.2 Accrual quality regressions

The main analyses for investigating the accruals quality of firms with employee representatives on the boards are presented in Table 5. In this regression, the dependent variable is the absolute value of residuals from the accrual models, as described in section 4.2. In model 1, the dependent variable is the absolute value of abnormal accruals from the modified Jones model (Dechow et al., 1995). In model 2, performance-adjusted discretionary accruals are used by including the lagged return on assets (ROA_{t-1}) in the modified Jones model to control for the effect of performance on accruals (Kothari et al., 2005). In all regressions, we use clustered standard errors (by firms) and year dummies to account for the error term's lack of independence across firms and time (Petersen, 2009; Thompson, 2011).[5]

[5]The year 2005 is the first year that the listed firms in Sweden adopted IFRS following the mandatory adoption of IFRS by the European Union (European Union regulation No. 1606/2002). This year is selected as the first year of our analyses in order to control for any changes in accounting numbers due to the change in accounting standards. However, the first year adoption may also affect our results. Therefore, we also replicate analyses excluding the year 2005. The finding are consistent with those that are presented for the analyses of accruals quality models.

The variable of interest is related to the presence of employee representatives on the boards (*ERR*)[6]. Based on the earnings quality hypothesis, we expect a negative association between *ERR* and abnormal accruals. Prior research provides evidence on the importance of boards' monitoring performance in enhancing the quality of information presented in firms' financial reports (Faleye et al., 2011; Kim et al., 2014). We predict that employee representatives improve the monitoring performance of the boards with respect to better quality financial reports, in particular by promoting more effective communication and providing more insights from the firms. Consistent with our prediction, the results in Table 5 indicate that the fraction of employee representatives on the boards (*ERR*) is negatively and significantly (at a 1% level) related to abnormal accruals[7]. The coefficient implies that with one percent increase in the fraction of employee representatives on the boards, the ratio of discretionary accruals to total assets decreases by 0.001 basis point.

Considering an average discretionary accruals of 8% of total assets, this coefficient represents an economically significant reduction of 1.2% in abnormal accruals. This result implies that firms with employee representatives on the boards are associated with less earnings management. In other words, boards that include employee representatives are associated with improved board monitoring, which results in higher quality financial reporting.

We also include other firm and governance factors that previous research indicates to be negatively associated with abnormal accruals. The variables related to the monitoring influence of large owners (i.e., $CapitalLargest$, $secondlargest$, and $familyfirm$) provide negative coefficients in the regressions. However, the coefficients of these variables are not statistically significant to be interpreted.

[6]The main independent variable of this study is related to the effect of employee participation on boards. We primarily consider the extent of employee representatives' influence over the boards by measuring the percentage of these members on the board of directors (*ERR*). However, in untabulated results, we instead use a dummy variable that is equal to one for firms that have employee representatives (ER) on the board of directors and zero otherwise. The results are similar to those presented for the effect of *ERR* in the tables.

[7]Looking at the Pearson correlation matrix (Appendix II), the correlation between *Boardsize* and *ERR* is high and significant. To control for this high collinearity among these two variables we have dropped *Boardsize* from the model. Regression results still provide a negative and significant coefficient for the *ERR* variable (Also, excluding *ERR* from the model does not significantly change the coefficient of *Boardsize*).

Table 5. Abnormal Accruals

	Model 1 (Abnormal Accruals)		Model 2 (Performance -Adjusted Abnormal Accruals)	
VARIABLES	coeff.	t.stat	coeff.	t.stat
ERR	-0.001**	(-2.254)	-0.001**	(-2.214)
LnMV	-0.007*	(-1.780)	-0.007**	(-2.034)
LnMTBV	0.012*	(1.810)	0.014**	(2.016)
Dloss	0.033**	(2.544)	0.020*	(1.722)
LEV	-0.014	(-1.589)	-0.014	(-1.458)
FirmAge	-0.0003*	(-1.957)	-0.0002	(-1.507)
CapitalLargest	-0.0004	(-1.585)	-0.0004	(-1.523)
SecondLargest	-0.017*	(-1.778)	-0.017*	(-1.923)
Familyfirm	-0.003	(-0.337)	-0.003	(-0.420)
Boardsize	0.004	(1.016)	0.004	(1.124)
InDepDR	-0.000	(-0.159)	-0.000	(-0.681)
Dep_Chair	0.005	(0.409)	0.005	(0.462)
CEOonBoard	0.010	(0.835)	0.005	(0.487)
FDonBoard	-0.001**	(-2.323)	-0.001*	(-1.759)
Committees	-0.010	(-0.776)	-0.018	(-1.414)
Observations	824		816	
Adjusted R-sqd.	0.098		0.088	

Note:
Table 5 presents the effect of variables on inverse accruals quality using Pooled OLS regression. In all regressions, standard errors are clustered by firm level. In model 1, the dependent variable is *Abnormal Accruals* based on the modified Jones Model (Dechow et al., 1995) and in model 2, *Performance-Adjusted Abnormal Accruals* are used by adding the lagged value of return on assets ROA_{t-1} into the accrual model (Kothari et al., 2005). *ERR* is the percentage of employee representatives on the board. Firm size is measured by the natural logarithm of market value of the firm *LnMV*. Firm growth is measured by the natural logarithm of market to book value $LnMTBV$. $Dloss$ is an indicator variable for firms with negative income and zero otherwise. Detailed description of all variables is presented in Appendix I. Regressions include a set of year dummies. Robust t-statistics are presented in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

With respect to board size and other board characteristics, the results are also weak. However, consistent with Srinidhi et al. (2011), we find that firms with greater female board participation ($FDonBoard$) show higher earnings quality. Finally, consistent with previous research, larger firms (higher $lnMV$) and firms that do not report negative earnings (zero $DLoss$) provide higher earnings quality.

7 Additional analyses

7.1 An alternative measure of earnings quality

We also consider an alternative model for measuring earnings quality that presents the ability of current accounting earnings to predict future cash flows and earnings. Dechow and Dichev (2002) define earnings quality in a model, in which they expect a significant relationship between accruals and cash flows from operations. They estimate the error in the model in which accruals, specifically short-term accruals (or working capital accruals), are regressed over the past, present and future cash flow from operations. Abnormal accruals are measured as the standard deviation of the residuals in their model, in which a higher standard deviation of residuals implies a lower quality of earnings.

McNichols (2002) argues that in this model, estimation errors caused by management discretion are not independently considered, but it is likely to be dependent on the cash-flow realization. Hence, McNichols (2002) proposes a model in which the earnings quality model of Dechow and Dichev (2002) is combined with the discretionary accruals model by Jones (1991). This means that the change in revenues and the net value of property, plant and equipments (PPE) are used as additional explanatory variables in the model developed by Dechow and Dichev (2002). McNichols (2002, p.65) argues that combining these two models strengthens both approaches and reduces the extent to which the correlated omitted variables affect the model.

$$\Delta WC_{it} = \alpha_0 + \alpha_1 CFO_{i,t-1} + \alpha_2 CFO_{it} + \alpha_3 CFO_{i,t+1} + \alpha_4 \Delta REV_{it} + \alpha_5 PPE_{it} + \upsilon_{it} \quad (6)$$

Following previous research that adopts this combined model (Francis et al., 2008, 2005; Jung et al., 2014; Srinidhi et al., 2011), we estimate the earnings quality as the extent to which accounting accrual is associated with the past ($CFO_{i,t-1}$), current (CFO_{it}) and future cash flows ($CFO_{i,t+1}$), controlling for the effect of sales growth (ΔREV) and net property, plant and equipments PPE_{it}. In the above model, ΔWC_{it} represents the change in non-cash working capital[8]. All the vari-

[8]Following McNichols (2002) we use short-term accruals in this model. McNichols (2002, p.66) states that "Jones (1991) included depreciation in her measure of accruals, but to allow for consistency with Dichow and Dichev (2002), the measure of accruals adopted here excludes de-

ables are scaled by the average of total assets.

$$AQR_{it} = \beta_0 + \beta_1 ERR_{it} + \beta_2 LnMV_{it} + \beta_3 LEV_{it} + \beta_4 MTBV_{it} + \beta_5 DLoss_{it} + \beta_6 SaleSD_{it} + +\beta_7 OC_{it} + \sum_{k=1}^{10} \gamma_k Governance_{it} + \upsilon_t \quad (7)$$

The absolute value of residuals from Eqs.6 is used in the main model (Eqs.7), which indicates the effect of different variables on *inverse* accruals quality (i.e., higher value of residuals indicate poor accruals quality)[9]. Furthermore, as clearly discussed in previous research (e.g., Dechow and Dichev, 2002; Francis et al., 2005), some factors including firm size, measured by natural logarithm of firm market value ($LnMV_{it}$); standard deviation of firms' sales, calculated over the past 10 years operating ($SaleSD_{it}$); leverage (LEV_{it}); natural logarithm of market-to-book ratio ($LnMTBV_{it}$); the incidence of losses ($DLoss_{it}$); and the firms' operating cycle (OC_{it}) affect the extent of accruals. Therefore, we include these variables in the analysis and also control for other governance factors regarding the ownership structures and board structures of firms.

The results are presented in Table 6 (Model 1) and are consistent with those presented in Table 5. In particular, *ERR* provides a negative and significant coefficient (β= -0.0007, t= -2.04), suggesting that as the proportion of employee representatives on the boards increases by one percent, the ratio of abnormal accruals to total assets decreases by 7 basis points (i.e., a reduction of 1.13% compared to a mean value of 0.062). This result provides further evidence for our prediction and indicates that, controlling for alternative measures of earnings quality, the presence of employee representatives on boards is associated with lower abnormal accruals. Other than the effect of employee representatives' proportion on the boards,

preciation". Therefore, total accrual is calculated here as $TA_{it} = [\Delta CurrentAssets_{it} - \Delta Cash_{it}] - [\Delta CurrentLiab._{it} - \Delta Short.TDebt_{it}]$.

[9]Using the absolute value of residuals in the model is consistent with previous research. As mentioned by Srinidhi et al. (2011), using the absolute value of residuals instead of standard deviation of residuals will solve the problem of changes in independent variables over the years. In particular, the period of this study begins from 2005, along with the changes in several regulations (e.g., the IFRS and the Code of Corporate Governance). To control for the effect of these changes before and after 2005, we use the absolute value of residuals for each firm-year observation. However, the limitation of this approach is that a firm may have consistently large residuals but small standard deviations. In other words, firms with extreme accruals have also extreme abnormal accruals, which may impose limitations to interpretation of accrual regressions (Dechow et al., 2010).

there is evidence that firms with concentrated ownership structure, i.e., greater cash-flow shares held by the largest shareholders ($Capitallargest$), and firms with higher leverage ratios (LEV) have lower abnormal accruals.

7.2 Controlling for endogeneity – self-selection bias

Studying the attendance of employee representatives on the boards is subject to the potential endogeneity problem[10]. This is mainly due to the fact that unions have the rights but not the obligation to elect employee representatives on the boards. Even though the law gives an opportunity for employee representatives to be part of the board of directors, not all the boards of listed companies include employee representatives. Given that other underlying factors affect the presence of employee representatives on the boards, models may suffer from the *selection bias*. Therefore, it is important to identify the differences of firms in which union members participate on the boards.

We conduct the Heckman (1979) model to control for the differences of firms with employee representatives and those without. Following the Heckman procedure, the choice of employee representatives on the boards is estimated using a probit model. Accordingly, in the first stage, we estimate the effect of several firm and governance factors on the probability of having employee representatives on the board of directors. Importantly, we include some variables in the first stage Heckman procedure that are excluded in the main models in the second stage. These exogenous independent variables, namely *exclusion restrictions* or *instruments*, are important features of convincing the implementation of the Heckman procedure (Lennox et al., 2011).

[10]Given that we have panel data, a fixed effect (FE) model can provide an advantage in removing the time-invariant unobservable factors (the variables that are constant or change vaguely over time). However, the main variables of interest in the models with respect to governance structures of firms do not considerably change over a short time period (5 years) which means that they are removed in the FE model. Hence, applying this method has major limitations (Zhou, 2001).

$$Pr[D\_ER_{it} = 1] = \Phi[\beta_0 + \beta_1 LnEmployees_{it} + \beta_2 Firmage_{it} + \beta_3 Performance_{it} + \beta_4 R\&DtoSale_{it} + \beta_5 LEV_{it} + \beta_6 SDRETURN_{it} + \beta_7 ERRIndustry_{it} + \beta_8 CapitalRegion_{it} + \sum_{k=1}^{10} \gamma_k Governance_{it}] \quad (8)$$

In the first stage, we control for the variables that affect the probability of the employee representatives' attendance on the boards of directors ($Pr[D\_ER_{it} = 1]$). Based on the Swedish regulations, firms with larger numbers of employees are entitled to elect at least two or three employee representatives to the boards of directors. Hence, we control for the numbers of employees in firms ($LnEmployee_{it}$).

The descriptive statistics reveal that among Swedish listed firms with employee representatives on the board, the average of R&D expenses (scaled by total sale) is higher than those without employee representatives, which can be due to a higher demand in boards of R&D-intense firms for having access to inside information. Therefore, we also add the ratio of R&D to total sales in the first stage model ($R\&DtoSale_{it}$). Firm age often captures the tradition of firms in continuing specific practices and can be an important determinant of employee representatives on the board. Looking at the descriptive statistics, the firms that have employee representatives are older than firms without employee representatives.

Firm risk can also influence employee participation on the board of directors. In particular, it is expected that firms with employee representatives on the board are less exposed to risk. We control for firm risk in the first stage including standard deviation of stock return over 5 years period ($SDRETURN_{it}$) in the model. Fauver and Fuerst (2006) propose that firms in industries that require more coordination and higher skills (i.e., trade, transportation, pharmaceuticals and other high-skilled manufacturing firms) can benefit from employee representation. It is more likely that firms have employee representatives on the boards of firms in industries in which there is a tendency to have union representatives on the boards. Hence, we use an instrument in the first stage that measures the percentage of employee representatives on the boards of other firms in the same industry category (ICB) ($ERRIndustry_{it}$). Another instrument in the first stage is $CapitalRegion_{it}$, which is equal to one for firms that have their headquarters outside the capital region and zero otherwise. Given that in Sweden regional unions decide upon hav-

ing representatives on the boards of directors, it is expected that in regions with less alternative employment possibilities (i.e., outside the capital region), unions are more likely to elect employee representatives (Gregoric et al., 2014).

There are several variables in the model to control for the effects of ownership structures and board structures on the probability of having employee representatives on the board of directors. With respect to ownership-related factors, we control for family-owned firms, highly concentrated firms and firms with second largest shareholders. These variables may affect the presence of employee representatives on the boards, particularly due to the substantial control of large owners in these firms. Other boards' characteristics including size of the board, the CEO being a member of the board, and major owner representatives on the board can also affect the probability of employees' participation on the board, and therefore, they are added to the analysis.

In the second stage of Heckman procedure, we again consider Eqs.7 in estimating the accruals quality, based on the model by (McNichols, 2002). The second model of Table 6 presents the results for the first and second stage Heckman model. The inverse Mills ratio ($\hat{\lambda}$) in the accrual model, controls for the endogeneity and sample selection bias of employee representatives being part of the boards. The significant coefficient of Mills ratio indicates the presence of selection bias. Several factors affect the likelihood of employee representatives' attendance on the boards. With respect to our instruments in the first stage, we can see that both $ERRIndustry_{it}$ and $CapitalRegion_{it}$ are important determinants of employee representatives on the boards. However, these two variables are not expected to affect abnormal accruals directly, and therefore, they are exogenous to the main model for estimating abnormal accruals (i.e., exclusion restrictions)[11].

Controlling for other firms and governance variables that affect the accruals quality, we find similar results in the second model that are also consistent with the results in Table 5. Specifically, the effect of *ERR* on abnormal accruals remains negative and significant, indicating that in firms with attendance of employee representatives on the boards, the earnings quality is higher.

[11] As clearly described by Lennox et al. (2011, p. 593), selection model is more likely to suffer from multicollinearity problems when there are no exclusion restrictions. To detect and run diagnostics for multicollinearity, post estimation Variance-Inflation-Factors (VIF) are applied after Heckman analyses, which result to 8.36. Since VIF higher than 10 typically indicate high multicollinearity (Greene, 2008), we can conclude that this is not a problem in the use of the Heckman model in this study.

Table 6: Additional Analyses

	Model 1		Model 2 (Controls for self Selection)			
VARIABLES			First stage Heckman:		Second stage Heckman:	
	Dependent variable AQR		Dependent variable D_ER		Dependent variable AQR	
ERR	-0.0007**	(-2.036)			-0.001**	(-2.005)
LEV	-0.009**	(-2.344)	-0.154	(-0.759)	-0.044*	(-1.943)
FirmAge	-0.0000	(-0.259)	-0.002	(-0.474)	-0.000	(-0.751)
CapitalLargest	-0.0004***	(-2.619)	-0.006	(-0.945)	-0.0004**	(-1.978)
SecondLargest	-0.009	(-1.477)	0.391**	(2.181)	-0.001	(-0.209)
Familyfirm	0.004	(0.630)	0.242	(1.271)	0.001	(0.188)
Boardsize	0.002	(0.988)	0.746***	(11.130)	0.005*	(1.813)
InDepDR	0.000	(0.021)	0.019**	(2.557)	-0.000	(-0.648)
Dep_Chair	0.005	(0.614)	0.208	(1.039)	-0.001	(-0.133)
CEOonBoard	-0.008	(-0.997)	0.377	(1.781)	-0.013	(-1.555)
FDonBoard	-0.000	(-0.883)	0.03***	(4.405)	-0.000	(-0.991)
Committees	-0.006	(-0.654)	-0.272	(-1.178)	0.005	(0.750)
LnMV	-0.003	(-1.046)			-0.000	(-0.183)
LnMTBV	0.007*	(1.744)			0.012**	(2.192)
Dloss	0.011	(1.232)			0.014	(1.747)
OC	0.000	(1.456)			0.0001**	(2.378)
SaleSD	0.014	(1.247)			0.013	(1.282)
RDtoSale			-0.457	(-0.317)		
LnEmployees			0.215***	(4.162)		
ROA			-0.007	(-1.121)		
RETURN			-0.661***	(-3.251)		
SDRET			-0.948***	(-3.130)		
ERRInd			0.132***	(7.187)		
CapitalRegion			0.317*	(1.755)		
$\hat{\lambda}$					0.019**	(2.335)
Observations	619		880		567	
Adjusted R-sqd.	0.148					

Note:

Table presents the regression on accruals quality, using an alternative measure of abnormal accruals and controlling for sample selection bias. In Model 1, an alternative measure of accruals quality is considered based on the model of Dechow and Dichev (2002) combined with the fundamental variables from Jones (1991) (i.e., change in Sales and PPE) (McNichols, 2002). Factors affecting the extent of accruals are controlled, including firm size (*LnMV*), growth (*LnMTBV*), sales volatility (*SalesSD*), incidence of loss in firms (*Dlocc*), leverage (*LEV*), and the firms' operating cycle affect (*OC*). Several governance factors, related to the ownership structure and boards structure, are also added. Model 2 presents the same model, addressing the potential selection bias. All regressions include year dummies. The variables are described in Appendix 1. Bootstrap standard errors are used for Heckman model. Robust t-statistics in parentheses (*** p<0.01, ** p<0.05, * p<0.1)

8 CONCLUSION

In this study we investigate how employee representatives contribute to the monitoring role of the boards. In particular, we argue that employee representatives on the board promote information transfer, which can lead to effective board communication and thereby enhanced monitoring performance of the boards. Employee representatives on the board of directors can improve the quality of the board's decision-making and the board's ability to better oversee and monitor management by providing more inside information about the firm. Employee representatives are expected to enhance the monitoring performance of the boards since they invest their human capital in firms and are also independent of the CEO and controlling shareholders.

In examining the monitoring role of the boards that include employee representatives, we focus on CEO compensation as well as quality of financial reporting. The results indicate that employee representatives do play some role in enhancing the monitoring capabilities of the boards. In particular, there is evidence for significantly higher earnings quality in firms in which the boards consist of employee representatives. Furthermore, CEO incentive compensation is less likely to be used in these firms, consistent with the substitute governance argument. Overall, our results have important policy implications, given that employee participation is a common feature of corporate governance in many firms in Europe. In addition, the unique evidence for codetermination in corporate governance and increasing intensity of board monitoring has implications on the quality of financial reporting that has not been examined in prior research. In this study, we focus on the monitoring performance of the boards. However, prior research suggests that increased intensity of board monitoring and higher board scrutiny over managers may occur as the result of a trade-off between boards' monitoring and advising functions. For example, based on a survey study, Adams et al. (2010) present evidence for managers providing less strategic information when they are monitored by the boards intensively. Future research can also examine the advisory role of the boards that include other stakeholders such as employee representatives.

Apppendix I: Description of variables

Board Structure	**Value label**	**Measurement**
#Employee Rep.	*Emp_rep*	The number of employee representatives in the board
%Employee Rep.	*ERR*	The percentage of employee representatives on the boar d
Board Size	*Board size*	The number of directors in the board
separate committees	*Committees*	A dummy: 1=if there is a separate committee, 0=otherwise
Independent directors %	*InDepDR*	The percentage of independent or outside directors
CEO on Board	*CEOonBoard*	A dummy : 1=if CEO sits on the board, 0=otherwise
Female directors	*FDonBoard*	The percentage of female directors on the board
Dependent Chair	*Dep_Chair*	A dummy: 1= if the chairperson is the largest owner or related to the largest owner, 0=otherwise
Ownership Structure	**Value label**	**Measurement**
Cash-flow share%	*CapitalLargest*	The percentage of cash-flow rights (held by the largest owner)
Voting share %	*VotingLargest*	The percentage of voting rights (held by the largest owner)
Dual	*Dual*	A dummy: 1=if the largest owner holds dual class shares
SecondLargest	*SecondLargest*	A dummy: 1= if the company has a second largest owner , 0=otherwise
CEO Compensation	**Value label**	**Measurement**
Total cash compensation	*lnTCC*	Natural logarithm of Total cash compensation (Salary + bonus)
Bonus Ratio	*Rbonus*	Bonus/(Bonus + Salary)
Equity Based Compensation	*EBC*	A dummy variable: 1=if CEO receive EBC and 0=otherwise
CEO tenure	*Tenure*	The years that the CEO has been working
CEO Age	*CEOAge*	Age of CEO
CEO share	*CEOshare%*	The percentage of shares held by CEOs
Firm Characteristics	**Value label**	**Measurement**
Size of the company	*lnTotalAssets*	Natural logarithm of Total assets
ROA%	*ROA*	Return on Assets%
Stock Return	*Stock Return*	Share Return (calculated using Return Index from Datastream)
Standard deviation of ROA	*SDROA*	Standard deviation of return on assets over preceding five years
Standard deviation of RET	*SDRET*	Standard deviation of stock return over preceding five years
R&D to Sale	*RDtoSale*	Research & Development expenditures to Total Sales
Leverage	*LEV*	The ratio of total debt to total assets
Market to book value	*MTBV*	Market value of equity divided by book values
Market value	*MV*	Market value of equity
Sales Growth	*Growth*	Average of change in the Sale over proceding 3 years
Industrial categories	*Industry*	Industry Classification Benchmark (ICB)
Firm age	*FirmAge*	Number of years since the company was founded
Financial variables	**Value label**	**Measurement**
Cash-flow from operation	*CFO*	Cash-flow from operations (scaled by beginning of the year total
working capital	*WC*	Change in operating noncash working capital following Francis et al
Change in Sale	Dsale	Change in the firm's sale between the period t and t-1
Plant, Property and equipment	*PPE*	Firm's Plant, Property and Equipment
Total Accruals	*TA*	Change in operating noncash working capital minus depreciation
Dummy Loss	*D_Loss*	A dummy:1=if the firm reports a net loss, otherwise zero.
Operating Cycles	*OC*	360 / (sales average AR) + 360 / (cost of goods sold) / (average inventory)
Avgerage of DWC	AvgDWC	Average of absolute value of DWC over two years from year $t-1$ to t

Apppendix II: Pearson Correlation, (Correlations significant at the level 5% and 1% are highlighted in bold.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.ERRp	1																
2.Boardsize	**0.6975**	1															
3.Committees	**0.2308**	**0.3808**	1														
4.InDepDR	**0.1313**	**0.1141**	**0.0932**	1													
5.CEOonBoard	**0.1851**	**0.2731**	0.0283	**-0.447**	1												
6.FDonBoard	**0.2357**	**0.1694**	0.0207	**0.1367**	**-0.1389**	1											
7.Dep_Chair	0.0503	**0.1004**	**-0.1056**	**-0.4184**	**0.1067**	-0.0036	1										
8.CapitalLargest	-0.0302	-0.0467	**-0.1647**	**-0.3377**	0.0486	-0.0048	**0.1734**	1									
9.Dual	0.0741	**0.0937**	0.0347	**-0.2499**	**0.1483**	0.0378	**0.1896**	0.0446	1								
10.secondlargest	**0.079**	0.0185	0.0247	**-0.2768**	0.0698	-0.0066	**0.2012**	**-0.1155**	**0.175**	1							
11.familyfirm	0.0026	-0.0284	-0.062	**-0.2843**	**0.1391**	-0.0172	**0.2575**	**0.1872**	**0.2797**	**0.199**	1						
12.EBC	-0.0277	0.0654	**0.1273**	**0.1307**	**-0.0832**	0.0171	-0.0616	**-0.2219**	-0.0568	-0.0918	**-0.0735**	1					
13.Rbonus	0.0749	**0.1989**	**0.1866**	**0.0864**	0.0331	**0.084**	**-0.1085**	**-0.1354**	-0.015	**-0.084**	**-0.1344**	**0.1273**	1				
14.lnTCC	**0.3459**	**0.583**	**0.3475**	0.0724	**0.1479**	**0.2042**	0.0354	**-0.2124**	0.0723	-0.0307	**-0.1423**	**0.2025**	**0.5429**	1			
15.CEOtenure	-0.0297	-0.0219	-0.0453	**-0.1234**	**0.1918**	-0.0337	**-0.0983**	**0.1372**	**0.2168**	-0.0097	**0.2237**	**-0.1734**	-0.0641	**-0.097**	1		
16.CEOAge	**0.1297**	**0.1737**	0.012	**-0.1667**	**0.2045**	0.0508	-0.0472	0.0529	0.0661	0.0574	0.064	**-0.1267**	-0.0555	**0.0904**	**0.3545**	1	
17.CEOshare	**-0.198**	**-0.2691**	**-0.2157**	**-0.1739**	**0.1705**	**-0.1142**	**-0.1528**	**0.2843**	**0.1127**	-0.0537	**0.1808**	**-0.1606**	**-0.2077**	**-0.3683**	**0.3642**	**0.1507**	1
18.RETURN	0.0007	0.0283	0.0139	-0.0278	0.0669	0.0239	0.035	0.0093	0.0149	-0.0323	0.0423	0.0042	**0.1323**	0.0685	0.0641	0.0173	0.0283
19.ROA	**0.0935**	**0.1405**	0.0375	**-0.0915**	**0.1084**	**0.1041**	**0.0659**	**0.1089**	**0.0988**	**0.0851**	**0.0986**	**-0.0969**	**0.2291**	**0.1614**	**0.1563**	0.0085	0.0342
20.LnTotalAssets	**0.3265**	**0.6213**	**0.2576**	**-0.0918**	**0.2863**	**0.1139**	**0.1591**	**0.0766**	**0.1257**	-0.0108	-0.0236	0.0062	**0.266**	**0.6475**	0.0183	**0.1612**	**-0.1182**
21.SDRET	**-0.1441**	**-0.1656**	**-0.1205**	**0.1516**	-0.0576	**-0.093**	**-0.0823**	**-0.1281**	**-0.1734**	**-0.1193**	-0.0594	0.0781	-0.0237	**-0.1191**	-0.0399	-0.0545	0.0051
22.SDROA	**-0.244**	**-0.295**	**-0.2065**	0.0868	**-0.1396**	**-0.0873**	-0.103	-0.0476	**-0.1599**	**-0.1056**	-0.0435	0.0261	**-0.0855**	**-0.2381**	**-0.1627**	**-0.1833**	0.0547
23.LnMTBV	0.0512	-0.0098	0.0485	0.0785	-0.0186	**0.163**	-0.0315	-0.0477	-0.0254	0.0148	0.0235	**0.1667**	0.0737	0.0453	0.0272	0.0376	-0.0006
24.lnMV	**0.3033**	**0.5324**	**0.3058**	0.0492	**0.2419**	**0.1434**	-0.0016	0.0116	0.0157	**-0.0877**	-0.0425	**0.1011**	**0.2203**	**0.5587**	0.0142	**0.1319**	**-0.1255**
25.RDtoSale	-0.0088	-0.0616	-0.0424	0.0672	0.0001	0.0088	-0.0698	-0.0521	-0.0729	-0.0176	-0.0452	**0.1331**	**-0.082**	-0.048	-0.0113	**0.0992**	-0.0166
26.LEV	**0.0817**	0.0682	**0.0854**	**-0.0871**	0.127	**0.0442**	**0.0821**	-0.0065	0.032	0.0694	0.0715	0.0409	0.0411	**0.185**	-0.0105	-0.0195	-0.0312
27.FirmAge	**0.3503**	**0.4899**	**0.2028**	-0.0664	**0.2767**	0.043	**0.1241**	0.0221	**0.3057**	0.027	-0.0049	0.0427	0.0675	**0.3327**	0.0755	**0.1022**	**-0.1238**
28.TA_LTA	0.0108	0.0089	-0.0335	0.0188	0.022	0.0093	-0.0114	0.0274	0.0086	-0.0546	-0.0179	-0.0443	0.0578	0.0303	0.0207	0.069	0.0654
29.WC_TAA	0.014	0.0117	-0.0629	-0.0162	0.039	0.0059	0.0255	0.0122	0.0025	-0.0352	-0.029	-0.0362	0.0465	0.0061	0.0291	0.0553	0.0437
30.PPE_TAA	0.0352	**0.1209**	-0.0304	**-0.1618**	**0.1548**	**-0.09**	**0.1382**	0.0605	0.014	**0.0839**	0.0945	**-0.1737**	**-0.1022**	**-0.0146**	0.109	0.1487	0.0556
31.CFO_TAA	**0.0874**	**0.123**	**0.106**	**-0.0892**	**0.0955**	**0.1054**	0.0357	0.0503	**0.096**	0.0664	**0.0956**	-0.0393	**0.1997**	**0.1836**	**0.106**	-0.0034	-0.0095
32.DSale_TAA	-0.05	-0.0471	0.0106	**0.08**	-0.034	0.0766	**-0.0994**	-0.0589	-0.0067	-0.0212	0.0409	0.0673	**0.1741**	-0.0167	0.0364	-0.0321	0.0364
33.OC	**-0.1311**	**-0.1075**	0.0075	**-0.0209**	-0.0112	-0.0775	-0.0749	0.0144	0.001	**-0.1929**	**-0.16**	**0.1751**	-0.0914	-0.0387	0.006	0.0864	0.0487

	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
18.RETURN	1																
19.ROA	**0.1564**	1															
20.LnTotalAssets	0.0276	**0.3009**	1														
21.SDRET	0.0775	**-0.0993**	**-0.1823**	1													
22.SDROA	-0.031	**-0.2723**	**-0.3695**	**0.2933**	1												
23.LnMTBV	**-0.2499**	-0.0575	**-0.186**	0.0847	**-0.084**	1											
24.lnMV	0.02	**0.2305**	**0.7109**	**-0.1169**	**-0.2577**	**0.0954**	1										
25.RDtoSale	0.0502	**-0.3231**	**-0.1757**	0.0898	0.0693	**0.1617**	-0.0087	1									
26.LEV	0.0045	0.0212	**0.2277**	-0.0541	**-0.1919**	0.0247	**0.1229**	-0.0943	1								
27.FirmAge	0.0177	**0.1464**	**0.4703**	**-0.1782**	**-0.2433**	**-0.1074**	**0.3727**	**-0.1005**	0.036	1							
28.TA_LTA	0.0612	0.0377	-0.0143	0.0151	**-0.1207**	**0.0958**	0.06	0.0199	-0.0281	-0.0189	1						
29.WC_TAA	0.037	**0.1209**	0.0173	0.0317	-0.0347	0.0143	0.0646	-0.0022	-0.0188	-0.0209	**0.7976**	1					
30.PPE_TAA	0.0167	**0.0939**	**0.3446**	-0.0492	**-0.1594**	**-0.2614**	**0.1534**	-0.0285	**0.0911**	**0.1528**	**-0.1612**	**-0.0092**	1				
31.CFO_TAA	**0.1611**	**0.7009**	**0.23**	-0.0577	**-0.2485**	0.0156	**0.1971**	**-0.336**	0.0443	**0.1262**	**-0.1118**	-0.0703	0.0392	1			
32.DSale_TAA	**0.0837**	**0.2697**	-0.0608	**0.0887**	0.05	**0.1384**	-0.0079	-0.03	-0.0029	-0.0708	0.0432	**0.0887**	-0.0622	**0.1809**	1		
33.OC	-0.0713	**-0.3118**	**-0.1283**	**0.1253**	0.1001	0.1623	0.0397	0.4048	-0.0305	0.0008	0.0355	0.0098	**-0.1571**	-0.3526	**-0.162**	1	

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