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Executive compensation disclosure, ownership concentration and dual-class firms: An analysis of Swedish data

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ABSTRACT

We study how executive compensation disclosure (ECD) is affected by the economic incentives of owners and managers in a Swedish setting where agency conflicts are not so much between managers and owners, but between controlling and non-controlling owners. In our sample, control is often enhanced through mechanisms such as dual share classes. The analysis relies on detailed hand-collected ECD data from 2837 annual reports. As expected, disclosure decreases with ownership concentration and the owner's excess voting rights. In Sweden, overpaid Chief Executive Offices (CEOs) improve ECD quality, but this is not the case when the controlling owner has excess control rights. This suggests that when managers have a bond with controlling owners, ECD is part of the agency problem between controlling and non-controlling owners, and executive compensation plays a different role than in previously studied Anglo-Saxon settings.

1. Introduction

Managers in publicly listed firms have better information than owners about the firm's activities, and well-structured executive compensation systems reduce agency problems caused by information asymmetries. A well-designed compensation system incentivizes managers correctly, but to assess its efficiency, the system has to be understandable. Given the need for transparency, disclosure requirements on executive compensation policies have increased in the European Union (EU) and elsewhere.[1] In contrast to market solutions, disclosure regulation should reduce total costs and create positive externalities (Healy & Palepu, 2001; Leuz & Wysocki, 2016). But such benefits might be difficult to obtain when it comes to executive compensation disclosure (ECD) as compensation is affected by complex relations between managers, controlling owners, and non-controlling owners. The relations vary across institutional contexts in response to laws, regulations, and culture. This study utilizes detailed hand-collected data from Sweden; a setting in which the agency conflict between controlling and non-controlling owners often dominates the agency conflict between managers and owners. Our overall objective is to further the understanding of ECD in an institutional setting with controlling owners.

Research on ECD is almost entirely conducted in Anglo-Saxon settings where ownership is often dispersed and management dominates the board of directors (Clarkson et al., 2006; Laksmana, 2008; Nelson et al., 2010; Laksmana et al., 2012;

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[1] In the studied time period, the European Union issued Commission Regulations 2004/913/EC, 2005/162/EC, 2009/384/EC, and 2009/385/EC.

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Tinaikar, 2014; 2017). For example, Laksmana (2008) reports that board governance quality improves ECD practice and ECD quality decreases with executive representation on the board. Clarkson et al. (2006) finds that firms in Australia did not provide good ECD until the disclosure became mandatory, and ECD is of higher quality when there are fewer inside directors on the board. Furthermore, Laksmana et al. (2012) shows that ECD is less transparent when managers are overcompensated, and Robinson et al. (2011) document a positive association between Chief Executive Officer (CEO) overcompensation and publicly identified noncompliance with disclosure rules set up by the United States (US) Securities and Exchange Commission (SEC). Muslu (2010) finds that for a sample of European firms, the ECD *increases* with more inside directors when strong governance mechanisms are in place. Tinaikar (2017) studies firms with dual classes of shares and compares ECD between the US and Canada. He suggests that managers in dual-class firms in weaker investor protection environments feel obliged to improve ECD. In sum, previous research underlines the crucial role managers play in Anglo-Saxon institutional settings where excessively compensated managers are unwilling to disclose information on their level and structure of compensation. Consequently, the implementation of sound corporate governance practices can improve ECD quality.

Corporate behaviors, including accounting disclosure decisions, vary in response to institutional regulations and corporate control mechanisms (e.g. Webb et al., 2008; Chau & Gray, 2010; Melis et al., 2015). In most countries, including Sweden, public firms tend to have a controlling owner (Aminadav & Papaioannou, 2020), and often the controlling owner is a family owner (Faccio & Lang, 2002; Barontini & Caprio, 2006; Vural, 2018). A concentration of ownership reduces agency conflicts between owners and management, but creates agency problems between controlling and non-controlling owners (Shleifer & Vishny, 1986). This is particularly the case when controlling owners employ disproportionate ownership structures (Shleifer & Vishny, 1997; Bebchuk et al., 2000). A disproportionate ownership can be obtained, for example, with dual share classes and pyramid ownership structures. Institutional Shareholder Services (2007) finds that such tools are more common outside the Anglos-Saxon countries, such as in Sweden. Furthermore, the Swedish corporate governance code strongly recommends only one inside director, and nearly 50% of Swedish firms have no management representation on their boards. Consequently, managers cannot dominate the boards. Taken together, a Swedish sample is expected to include powerful controlling owners, weaker managers that should never be able to dominate the board of directors, and weaker non-controlling owners. This setting clearly differs from a typical Anglo-Saxon setting, but it is similar to many other countries (c.f. Faccio & Lang, 2002; Aminadav & Papaioannou, 2020). Executive compensation plays an important role in the Swedish and other non-Anglo-Saxon settings, although previous research on ECD has not targeted such contexts.

The Swedish context is unique in the sense that the public firms always disclose their owners (see Cronqvist & Nilsson, 2003) and they are renown for providing high quality accounting disclosures (see comparisons in La Porta et al., 1998; Leuz et al., 2003; Burgstahler et al., 2006). There is also a low tolerance for extraordinarily high levels of pay (Oxelheim & Randoy, 2005), and Fernandes et al. (2013) document much lower levels of pay in Sweden than in Anglo-Saxon countries. These traces of egalitarianism together with controlling owners with excess control rights contrasts the characteristics of previously researched settings and allows us to study how ECD is affected by its context.

We employ a self-constructed index of ECD quality and make use of the transparent Swedish disclosure context as we hand-collect and interpret information from 2837 firm-year annual reports between the years 2001 and 2013. The index captures compensation contract details, including the structure of the remuneration package, retirement conditions, termination clauses, and severance packages. The empirical analysis conveys both similarities and peculiarities when compared to previous research in other institutional settings. We find that when ownership of cash flow rights is concentrated, and when management ownership is high, the disclosure on executive compensation is lower. This finding is in accordance with expectations and in line with previous research conducted in other institutional settings (Muslu, 2010, Melis et al., 2015). This suggests that agency conflicts between owners and managers decrease with ownership concentration and management ownership.

When an owner has substantial control rights, there is a reduced risk of managers acting selfishly. But because controlling owners have alternative information channels, their need for ECD is weaker and this acerbates agency conflicts between controlling and non-controlling owners. Our empirical analysis shows substantially less ECD when the owner has excess control rights and the negative relationship is incremental to that of the ownership of cash flow rights. We also investigate if ECD is different when managers are overpaid. In contrast to previous research (Robinson et al., 2011; Laksmana et al., 2012), overpaid Swedish CEOs provide better ECD. This is not unreasonable in an egalitarian society where managers legitimize their pay. However, we find that the positive association between overpayment and ECD is driven by firms with no excess control rights. Overpaid managers in firms where the controlling owner possesses excess control rights choose not to report better ECD. We see this as evidence that the bond between controlling owners and managers is important for understanding ECD.

Our study makes two contributions to the international disclosure literature. First, we contribute with insights based on the Swedish institutional setting. When managers dominate the board and there are few controlling owners, executive compensation concerns relate to issues between managers and owners. Disclosure of executive compensation is motivated by the agency conflict between managers and owners. When firms have controlling owners, ECD decisions relate also to agency conflicts between controlling and non-controlling owners. Agency problems are not necessarily more or less severe in our setting, but they seem to be different because managers are compensated for doing what controlling owners want them to do. When executives are hired and compensated by controlling owners, the manager-owner bond can affect disclosure decisions. In our setting, when managers are overpaid by controlling owners with excess control rights, they disclose less information. In such a setting, regulations that would increase ECD quality can increase the pressure on controlling owners and indirectly benefit non-controlling owners.

Second, the empirical analysis documents drivers of ECD in an institutional setting with characteristics that differ from what was studied in past research, but resembles many settings around the world. Aminadav and Papaioannou (2020) study ownership in >26,000 firms and show that more than 90 % have an owner with a sizeable equity block. Thus, controlling owners are a fairly universal feature, although ownership is more dispersed in Anglo-Saxon countries and more concentrated in French- and German-origin governance systems (Aminadav & Papaioannou, 2020). Furthermore, studies show that family ownership is very common both in Europe (Faccio & Lang, 2002) and elsewhere (Claessens et al., 2000). Finally, control enhancing mechanisms, such as dual share classes, are frequent in European countries, such as Finland, Italy, and Switzerland (Faccio & Lang, 2002; Institutional Shareholder Services, 2007), and elsewhere (Claessens et al., 2000). Moreover, there are signals that the number of public firms with dual share classes is growing (Institutional Shareholder Services, 2019). Thus, we contribute to the ECD literature by studying an important phenomenon in a setting that has many commonalities with countries outside of the Anglo-Saxon institutional context; and we find both similarities and differences from previous analyses (Clarkson et al., 2006; Laksmana, 2008; Muslu, 2010; Nelson et al., 2010; Laksmana et al., 2012; Tinaikar, 2014). Thus, our work underlines the importance of studying ECD outside of the most commonly studied institutional contexts.

The reminder of this paper proceeds as follows. Section 2 contains a review of relevant disclosure theory and a presentation of research hypotheses associated with the relationships between owners and management. Section 3 presents our research methodology, including the measures of ECD quality and the process by which we manually collect data. Section 4 contains results from the regression model analyses, and Section 5 concludes the discussion.

2. Theory and research hypotheses

2.1. The information demands of controlling owners

The publicly listed firm is a nexus of contracts between controlling and non-controlling owners, managers, creditors, and board members (Fama & Jensen, 1983). Problems arise when contracting parties do not share the same objectives and information is asymmetrically distributed between them. As outlined by Jensen and Meckling (1976), this causes an agency problem – referred to as the Type I equity agency problem. As ownership becomes more dispersed, owners (collectively) have a reduced ability and willingness to monitor and take action, which increases the probability of managerial misbehavior. Ultimately, with no controlling owner, the Type I equity agency problem becomes large. Thus, contracting imposes agency costs and there is a need for mechanisms that efficiently reduce them.

Accounting information reduces information asymmetries (Watts & Zimmerman, 1986) and owners with no ability to meet with management depend on formal information channels, such as accounting disclosures (Bushman & Smith, 2001; Armstrong et al., 2010). Well-designed compensation schemes will align manager and shareholder interests, and thereby reduce agency conflicts. However, poorly designed compensation schemes can have reverse effects (Bebchuk et al., 2003). From here rises a need to understand the structure of compensation schemes, and the relationship between management pay and corporate performance. An executive compensation scheme that is not designed to incentivize the creation of shareholder value can be detrimental for shareholders. For this reason, the accounting disclosure of executive compensation structures is a fundamental monitoring device (Melis et al., 2015).

The disclosure of executive compensation schemes is closely connected to the Type I equity agency problem and the relationship between the CEO and the owners. ECD is determined both by owners' information demand and by managers' willingness to comply with the demand. An owner's bargaining power is important for understanding of ECD drivers. A controlling owner is most likely in a good position for requiring information from management. But at the same time, executive compensation schemes are set by owners; and hence, a controlling owner should know the incentive structure without having to read a formal disclosure. In firms without controlling owners, management might be less pressured (Bebchuk et al., 2000). But at the same time there can be other incentives for quality disclosures, such as the pressures from investors, financial analysts, and debtholders (Diamond & Verrecchia, 1991; Botosan, 1997).

Because ECD is only one of several information sources that can be used by a controlling owner, a negative association between ECD and ownership concentration does not automatically imply that the controlling owner is less informed. We expect ECD to decrease with ownership concentration because information is costly to produce and not seen as necessary when information asymmetries are handled through alternative information channels. Similarly, we expect ECD to increase when the Type I equity agency problem is large, and management has incentives to increase ECD quality. In sum, we hypothesize that:

H1a: Firms with controlling owners disclose less information on their executive compensation practices

In essence, managers are agents and obtain no explicit benefit from disclosing more information about corporate performance and their own executive compensation contracts. For them, benefits arise if poor disclosure practices are punished and if good disclosure practices are rewarded, such as by reduced owner concerns and higher future pay levels. According to H1a, we expect ECD to decrease when there is a controlling owner with a large bargaining power, because they have access to private information and do not benefit from better disclosure. A large managerial ownership represents a special-case, in which the Type I equity agency problem is minimal. Laksmana et al. (2008) among others, find that ECD is lower when management's bargaining power is large and Laksmana et al. (2012) show that it decreases ECD readability.

Muslu (2010) argues, in contrast, that contracting incentives, rather than opportunistic behavior to hide information, explain ECD. He documents that ECD transparency increases with increased presence of executives on boards and CEO-chairman duality, unless, however, the executives already constitute a majority of the board (Muslu, 2010). We note that these results are not directly applicable to a setting where managers cannot dominate the board of directors unless they are also the controlling owner.[2] But for situations in which the CEO is also the controlling owner, we hypothesize that:

H1b: Firms where the manager is the controlling owner disclose less information on their executive compensation practices

2.2. The information demands of non-controlling owners

Controlling owners have incentives and better abilities to influence corporate decision-making and, thus, the Type I equity agency problem decreases with the relative power of controlling owners (Jensen & Meckling, 1976; Shleifer & Vishny, 1997). So, having a controlling owner should reduce the Type I equity agency problem. But at the same time, a controlling owner can influence decisions to obtain private benefits and thereby give rise to Type II equity agency problems between controlling and non-controlling owners (Shleifer & Vishny, 1986, 1997). These problems are well-known to affect many accounting and financial decisions (e.g. Shleifer & Vishny, 1997; Armstrong et al., 2010). Indeed, Aminadav and Papaioannou (2020) show that more than 90% of firms around the world have at least one sizeable owner, which suggests that Type II equity agency problems are plentiful across the world.

As discussed in the survey article by Armstrong et al. (2010), it is not clear as to whether and when controlling owners commit to higher quality reporting (to reduce the monitoring cost of non-controlling owners), or instead reduce the quality to facilitate a greater extraction of private benefits. Several empirical accounting studies investigate the matter in the area of executive compensation (Clarkson et al., 2006; Muslu, 2010; Nelson et al., 2010; Tinaikar, 2017). Both Nelson et al. (2010) and Clarkson et al. (2006) study Australian firms and find that shareholder activism is necessary to improve disclosure. Similarly, Muslu (2010) argue that independent boards are important for improved transparency in ECD.

Although the debate is still open, most scholars agree that control-enhancing mechanisms that allow owners to possess disproportionate amounts of voting rights may further incentivize owners to make self-serving non-optimal decisions (Bebchuk et al., 2000; Armstrong et al., 2010). For example, Li and Zaiats (2017) finds that firms with dual share classes provide a poorer information environment as measured by errors made by financial analysts, the probability of investors making informed trades, and share illiquidity. Fan and Wong (2002) and Francis et al. (2005) investigate the informativeness of reported earnings and conclude that the relationship between stock returns and earnings is weaker for firms with dual share classes. These results are corroborated by Lobanova et al. (2019), who finds a weaker association between stock returns and earnings in dual-class firms. They argue that the findings are not driven directly by lower earnings quality, but by a poorer information environment.

Little is known about the ECD consequences of having disproportionately distributed voting rights. To the best of our knowledge, existing research is constrained to Anglo-Saxon institutional contexts. Tinaikar (2014) analyses 210 US firms with dual share classes and finds that the detachment of control from cash flow rights is associated with lower disclosure levels. In a subsequent analysis, Tinaikar (2017) analyzes differences between US and Canadian dual-class firms and suggests that dual-class firms in weaker investor protection environments provide more transparent ECD. These two studies show that systems with dual share classes have negative impacts on ECD, but also that the institutional setting matters. While there are differences between the US and Canada, these two Anglo-Saxon contexts have even more similarities. For example, many firms are widely held, boards consist of many inside directors, and the CEO often holds a dual responsibility as Chairman of the board.

When there is a controlling owner, non-controlling owners benefit from more disclosure, but the reporting policy is heavily influenced by the controlling owner. In the Swedish institutional setting, ownership rights are often disproportionate, and any kind of substantial disclosure reduces the rather privileged position of a controlling owner with access to private information.[3] In respect to executive compensation, Cieślak (2018) finds that the pay-performance sensitivity is significantly weaker for Swedish firms with substantial Type II equity agency problems. Pay in these firms may be linked more to the *will* of the controlling owner, rather than the corporate performance. Similarly, as we expect poorer ECD when a controlling owner has excess control rights, we hypothesize that:

H2: Firms where controlling owners possess excess control rights disclose less information on their executive compensation practices

[2] Swedish law prohibits the CEO from taking on dual responsibilities as Chairman of the board (Aktiebolagslagen (in English the Companies Act), 2005:551, Ch.8, §49) and requires at least three board members (Aktiebolagslagen, 2005:551, Ch.8, §46). In addition, the Swedish Corporate Governance Code allows no more than one member of the executive management of the company or a subsidiary on the board (SCGB, 2020, Ch.3, §4). Only at least two board directors are required to be independent from the main owner (SCGB, 2020, Ch.3, §4).

[3] Cross-country studies document that differentiated voting rights are very common in Sweden (Institutional Shareholder Services, 2007) where owners with excess control rights often dominate the board of directors. According to US surveys (Institutional Shareholder Services, 2019), 7% of the Russell 3000 companies have a dual-class share structure. The corresponding figure for Swedish large cap firms is 80% (Institutional Shareholder Services, 2007), and 47.7% (1,353 firm-year observations) of the study's sample.

2.3. Management incentives

Without monitoring and bonding mechanisms, managers are expected to behave in their own best interest (Jensen & Meckling, 1976) and make opportunistic disclosure decisions (Fama & Jensen, 1983; Armstrong et al., 2010). Any disclosure decision is a consequence of external pressures on management and its willingness to obtain positive externalities (Leuz & Wysocki, 2016). Thus, management's bargaining power and its perception of whether the compensation is fair, matters. Overcompensated managers may exploit information asymmetries to alter outsiders' perceptions about the level and structure of pay. For this reason, agency theory predicts that overcompensated managers have incentives to opportunistically reduce the level of disclosure and blur the pay-performance relationship (Watts & Zimmerman, 1986; Bebchuk & Fried, 2003).

Management's bargaining power is relatively large in Anglo-Saxon institutional settings. Laksmana et al. (2012) find an asymmetric relation in which overpaid managers provide less readable ECD. Similarly, Robinson et al. (2011) document a positive association between disclosure defects and CEO overpayment. Laksmana (2008) documents that ECD is lower when there are more managers on the board of directors, but she also finds that overpaid managers tend to disclose more information. According to Laksmana (2008), increased disclosure when management is overcompensated can be explained by incentives to legitimize pay and avoid criticism.

Conclusions from studies made in Anglo-Saxon institutional settings might not be universal as managers' bargaining power can be constrained both by laws and actions taken by owners of the firm. When managers cannot dominate the board of directors and there are controlling owners active in the board of directors, the relationship between ECD and overcompensation can be much different. In Sweden, there is a rather low tolerance of power distance (c.f. Hofstede, 2001), a low tolerance for extraordinary levels of pay (Oxelheim & Randoy, 2005), and a reluctance to praise star performers (Isaksson, 2008; Holmberg & Åkerblom, 2012). The association between ECD and CEO overpayment is a rather open empirical matter. However, several context-specific factors suggest that overpaid Swedish executives legitimize their pay with better disclosure policies. Thus, given our institutional context, we hypothesize that:

H3a: Firms with overpaid CEOs disclose more information on their executive compensation practices

When a firm has a controlling owner, the main agency conflict is that between controlling and non-controlling owners. A controlling owner will not only lessen the power of management, but the CEO is often hired directly by the controlling owner and the CEO remuneration scheme is set, or at least approved, by the controlling owner. Most probably, the bond between the CEO and the controlling owner will make the CEO act in the best interest of the controlling owner. But it is also likely that a controlling owner is less willing to penalize the CEO for poor performance, as the CEO in essence executes decisions made by the controlling owner (Shleifer & Vishny, 1997; Cieślak, 2018). This bond and its consequences are likely to be exacerbated by excess control rights stemming from dual share classes.

Overpayment may be a mechanism to bond CEOs to the interests of owners with excess control rights. Masulis et al. (2009) finds that CEOs in firms with dual share classes receive higher compensation and that there is a stronger association between dual-class shares and compensation when the CEO is a member of the controlling owner group. Amoako-Adu et al. (2011) as well as De Cesari et al. (2016) find similar positive associations between excess control rights and CEO compensation. In the Swedish context, we expect managers to have relatively less power and to work closely with controlling owners. Cieślak (2018) finds that the pay-performance sensitivity in Swedish family-controlled firms with family CEOs is significantly lower than in other types of firms, and that dual-class firms have significantly lower sensitivity of pay to accounting performance than non-dual-class firms. In general, we expect overpaid managers to disclose more information to legitimize their pay. But CEOs in firms with controlling owners with excess control rights have fewer incentives to disclose information when being overpaid. Therefore, we hypothesize that:

H3b: Excess control rights of the controlling owner moderates the association between CEO overpayment and executive compensation disclosure

3. Methodology

3.1. Measures of disclosure and economic incentives

3.1.1. The executive compensation disclosure measure

Swedish publicly listed firms must disclose information on executive compensation, and they do so in a note to the financial statements. We hand-collect information from this executive compensation note in each firm's annual report and construct an ECD score (hereafter: *ECD_SCORE*) based on two main components. The first component is the number of words in the note that describe compensation practices.[4] In the word-count, we exclude table information and text associated with the compensation of non-executives and board members. Based on the number of words, we rank observations into seven groups and allocate (1 to 7) points based on the ranking. This first component of the *ECD_SCORE* is basic in the sense that it does not

[4] In untabulated robustness tests, we scale the measure with the annual report's number of pages and obtain similar results.

distinguish between more and less meaningful information and we implicitly assume that text is equally important in all annual reports and contexts.[5]

The second component of *ECD_SCORE* is based on a self-constructed index that captures firm-specific variation in the ECD. The index has seven equal-weighted subcomponents:

1. *INDX_1*: Disclosure of at least three remuneration subcomponents (fixed, variable, pension, options, and/or other) either in a table format or explicitly in the footnote on executive compensation.
2. *INDX 2*: Disclosure that (i) the CEO receives no variable compensation, or (ii) it is disclosed that a variable compensation exists and at least two of the following issues are also disclosed: (a) the extent to which bonus targets were met, (b) the maximum bonus achievable, and (c) information on how bonus targets are evaluated (formulas or procedures).
3. *INDX 3*: Disclosure of information on CEO retirement conditions. The qualitative assessment is based on whether the text includes retirement age, pension level, and the type of pension plan.
4. *INDX 4*: Disclosure of information on non-CEO top executives' retirement conditions. The qualitative assessment is based on whether the text includes retirement age, pension level, and the type of pension plan.
5. *INDX 5*: Disclosure of information on termination clauses for the CEO contract. The qualitative assessment is based on differences between voluntary and forced contract terminations, and termination clauses.
6. *INDX 6*: Disclosure of information on the CEO severance package. The qualitative assessment is based on the term of notice and compensation components.
7. *INDX 7*: Disclosure of information on non-CEO top executives' remuneration; either (i) by decomposing the total compensation into components, or (ii) by discussing conditions under which non-CEO top executives are remunerated.

The second component of *ECD_SCORE* focuses on information content rather than the quantity of disclosed information. As such, it can be perceived to be a better indicator than a simple word count. To make a valid and reliable empirical analysis, we collect data for the self-constructed index from appropriate texts. Because the score for second component ranges from 0 to 7 points, the total disclosure index score (*ECD_SCORE*) ranges from 1 to 14.

During the studied time period, firms started to disclose separate corporate governance reports and these reports sometimes contain information on executive compensation. To ensure that we do not exclude information to be used for the disclosure index' second component, we also search corporate governance reports. However, we do not count the number of words in them as the texts are usually very similar to those in the financial statement notes. Overall, very few firms disclose relevant information in their corporate governance reports that is not already included in the financial statement note. Nevertheless, in (untabulated) robustness tests, we control for this effect by using a dummy for the separate disclosure of a corporate governance report.

The use of disclosure indices is quite common in accounting research (Botosan, 1997; Hung, 2001; Laksmana, 2008; Muslu, 2010; Tinaikar, 2017), but in relation to other studies based on self-constructed indices our study appears to be more extensive (n = 2837). Because an index construction always contains subjective choices, such as the choice and weight of individual parameters and text interpretations, we also use the mere number of words in the note on executive compensation (i.e., the first component of *ECD_SCORE*). Although this variable is also hand-collected, it relies on fewer discretionary choices.

3.1.2. Measures of ownership, control, and compensation

In the empirical analysis, we examine how ECD is determined by ownership-associated incentives that stem from stakeholders' information demand and management's willingness to reduce information asymmetries. We recognize that both managers and controlling owners have disclosure incentives to reduce information asymmetry and improve the firm's contracting, and incentives to use the disclosures opportunistically. Given that disclosures on executive compensation affect management directly, they may be strong incentives to them. Table 1 contains definitions of the test and control variables that we associate to ECD and discuss later in the text.

To test Hypothesis 1a concerning ownership concentration and the Type I equity agency conflict, we measure the cash flow rights of the largest ultimate owner (*CF_RIGHTS*). We expect this agency conflict to decrease with ownership concentration and, thus, that the coefficient of *CF_RIGHTS* is negative in regressions on ECD. To test Hypothesis 1b concerning management ownership, we measure the percentage of cash flow rights owned by the CEO (*MGMTOWN*). We expect the Type I equity agency conflict to decrease with substantial CEO ownership and, thus, that the coefficient of *MGMTOWN* is negative in regressions on *ECD_SCORE*.

In Sweden, it is common that publicly listed firms employ dual share classes and pyramid ownership structures. As a consequence, controlling owners tend to have more voting than cash flow rights (i.e., excess voting rights). To test Hypothesis 2 concerning the Type II equity agency conflict, we measure the difference between voting rights and cash flow rights of the

[5] In untabulated robustness tests, we control for complexities in the compensation contract and the number of top executives in an organization as each could potentially correlate with the number of words. These adjustments have no material effect on results.

Table 1
Variable definitions of dependent and independent variables.

Panel A: Dependent variables	
ECD_SCORE	A total executive compensation disclosure score, with a maximum of 14, composed of two components, the rank based on
#WORDS	number of words disclosed in the note on executive compensation (1–7) and the manually collected index (ECD index) of the information content of the note on executive compensation (0–7).
	The number of words disclosed in the note on executive compensation. Excludes words in tables as well as for non-executive employees and board members.
ECD index	The following seven ECD index components are further explained in Appendix B.
INDX_1	Information on CEO compensation components
INDX_2	Information on CEO variable compensation
INDX_3	Information on CEO retirement conditions
INDX_4	Information on other top executives' retirement conditions
INDX_5	Information on CEO contract termination
INDX_6	Information on CEO severance packages
INDX_7	Information on other top executives' compensation components
Panel B: Independent variables	
CF_RIGHTS	The percentage of cash flow rights of the largest ultimate owner.
HIGH_RIGHTS	Dummy taking the value of 1 when the percentage of cash flow rights of the largest ultimate owner is above median, and otherwise 0.
WEDGE	Difference in the largest ultimate owner's voting and cash flow rights.
HIGH_WEDGE	Dummy taking the value of 1 when the difference in the largest ultimate owner's voting and cash flow rights is larger than zero, and otherwise 0.
OVERPAID	Difference between actual total CEO compensation and expected CEO compensation, scaled by total compensation, if positive, and otherwise 0. The expected compensation is modelled using annual regressions as specified in the Appendix A.
UNDERPAID	Difference between actual total CEO compensation and expected CEO compensation, scaled by total compensation, if negative, and zero otherwise. The difference is multiplied by −1 for a more trivial interpretation (more underpaid meaning higher variable values). The expected compensation is modelled using annual regressions as specified in the appendix A.
MGMTOWN	The percentage of cash flow rights controlled by the acting CEO at the end of the year.
SIZE	Logarithm of the market value of equity measured at the end of the year.
LEVERAGE	The value of all outstanding debt at the end of the year, divided by the value of total assets at the end of the year. The measure is winsorized at the 1% level.
AGE	Logarithm of the number of years since the company was founded. Proxies exist for some of the oldest firms.
BIG4	Dummy taking the value of 1 when the main auditor is part of one of the four largest audit firms, and otherwise 0.
OPTIONS	Dummy taking the value of 1 when the CEO owns stock options, and otherwise 0.

largest ultimate owner (*WEDGE*). We expect Type II equity agency problems to increase with the controlling owner's excess voting rights and, thus, that the coefficient of *WEDGE* is negative in regressions on *ECD_SCORE*.

Hypotheses 3a and 3b concern associations between management's level of relative compensation and ECD. Our model for expected compensation follows prior literature in this area (Core et al., 1999; Core et al., 2008; Laksmana, 2008; Laksmana et al., 2012). Similar to Laksmana et al. (2012), we compute the variables *OVERPAID* and *UNDERPAID* as the difference between the actual and the expected CEO compensation in a given year, deflated by the CEO's actual compensation. The variable *OVERPAID* is equal to the difference when it is positive (and zero otherwise). When the difference is zero or negative, the *UNDERPAID* variable is equal to the absolute value of the difference[6] (and zero otherwise). Appendix A outlines the procedures and the average coefficients from the annual multivariate regressions. To test hypothesis 3a, we focus on CEOs that are paid more than their benchmark pay (i.e., *OVERPAID*). In the Swedish institutional context, we expect overpaid managers to seek legitimacy and, hence, *OVERPAID* is expected to have a positive association with *ECD_SCORE*. To test hypothesis 3b, we focus on the interaction between *OVERPAID* and *WEDGE*. We first construct the variable *HIGH_WEDGE*, taking the value of 1 when the largest owner makes use of a dual class share structure.[7] We interact this dichotomous variable with *OVERPAID*. According to hypothesis 3b, we expect that there is less ECD in firms with overpaid managers when the controlling owner has excess control rights. Hence, the coefficient for the interaction variable *HIGH_WEDGE*OVERPAID* should be positive.

The literature on disclosure incentives stresses other factors that are associated with the level of disclosure and we control for many of them in the empirical analysis. We control for agency costs of debt using the firm's interest-bearing debt scaled by total assets (*LEVERAGE*). We also include the firm's size (*SIZE*), age (*AGE*), and its use of a Big 4 auditor (*BIG4*). More disclosure can be a response to more complex compensation structures. In particular, disclosures on CEO stock options are often lengthy; and for this reason we employ a dummy taking the value of 1 when options (*OPTIONS*) are in use.[8]

[6] Because the *UNDERPAID* variable contains negative values, we use the absolute value of the difference for *UNDERPAID* for a more intuitive interpretation of the coefficient in the main regression models.

[7] On a few rare occasions, when a firm employs dual classes of shares but the largest owner does not own excess voting rights, *HIGH_WEDGE* does not take the value of 1 even though dual share classes exist.

[8] In untabulated regression analyses, we investigate if the number of top management team members and the disclosure of corporate governance reports affect *ECD_SCORE*. Results are robust to both of these controls.

Table 2
Sample selection and industry distribution.

	# Firm-Years (2001 to 2013)
Panel A - Sample selection procedure	
Companies listed at the Nasdaq OMX Stockholm	3,419
Foreign companies (not domiciled in Sweden)	206
Banks	64
Missing data	312
Final sample	2,837
Panel B - Industry distribution	
Manufacturing	1,381
Wholesale and retail	279
Services	772
Financial services, including real estate and investments	405
	2,837

3.2. Data sources

The empirical study relies on data from Swedish publicly listed firms in the years 2001 to 2013. Table 2 contains information on sample selection procedures. The initial sample consists of 3,419 firm-year observations (375 firms) constructed from lists available from the Nasdaq OMX Stockholm website. We then exclude firms that are not domiciled in Sweden because their regulatory environment might be different (206 firm-year observations); and we frequently find that they disclose substantially less ECD in the financial statement notes. We also exclude banks from the sample (64 firm-year observations). Our choice of variables reduces the sample somewhat further. In particular, we use historical (i.e., lagged) stock returns, return on assets, book to market, and total assets to estimate the *OVERPAID* and *UNDERPAID* variables. This reduces the sample by the number of newly listed firms (in total 265 firm-year observations). Most missing observations relate to year 2001 because more than 80 firms were first listed in the years 2000 and 2001. We miss data for another 47 firm-year observations and, thus, the final sample consists of 2,837 firm-year observations.

Accounting and capital market data are from Compustat Global and SixTrust. However, when information on a firm included in the sample is missing in the databases, we manually collect the information from annual reports. Consequently, there are very few missing observations. Ownership data for all Swedish firms is from SIS Ägarservice, but occasionally we complement these data with information from annual reports as essentially all Swedish publicly listed firms disclose detailed ownership statistics in their annual reports. The self-constructed variable *ECD_SCORE* is based on manually collected data from each firm's annual report. We also hand-collect information on the number of pages in the annual report, the number top management team members, and the level of total CEO compensation.

3.3. The regression model

Following other studies in the area, we make use of pooled ordinary least square (OLS) estimations. A typical problem in this type of research setting is a high inter-temporal stability in the independent variables. For example, ownership structure and leverage vary little over time. To address serial correlation in the independent variables and in the residuals, we use standard errors clustered on the firms in all regressions. In addition, we use industry- and year-fixed effects and control for heteroscedasticity using the Hubert-White estimator for standard errors. We employ the following generic model:

ECD = OWNERSHIP + EXECUTIVE COMPENSATION + CONTROLS

The model captures relations and interactions between ownership-based incentives (*CF_RIGHTS*, *WEDGE*, *MGMTOWN*), executive compensation (*OVERPAID*), and the disclosure of information on executive compensation. Furthermore, the control variables include *SIZE*, *LEVERAGE, AGE*, *BIG4*, and *OPTIONS*. All variables are defined in Table 1. In accordance with the previously described hypotheses, we expect the coefficients of *CF_RIGHTS*, *WEDGE*, and *MGMTOWN* to have negative associations with *ECD_SCORE*, and *OVERPAID* to have a positive association with ECD. In addition, we expect the interaction variable *HIGH_WEDGE*OVERPAID* to have a negative association with the *ECD_ SCORE*.

4. Results

4.1. Descriptive statistics

Table 3 contains descriptive statistics on the ECD index and its two components using the sample of 2837 firm-year observations. The *ECD_ SCORE* increased substantially in the years 2001 to 2013, from 4.24 to 10.32 (143%). The largest increase in *ECD_ SCORE* occur between 2001 and 2003, when *#WORDS* increase by 121%, and the disclosure index increases 90%, from 2.48 to 4.65. The reason is the introduction of tightened disclosure requirements with the issuance of new rules in

Table 3
Descriptive statistics for the components of the Executive Compensation Disclosure (ECD) score.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total ECD_SCORE	4.24	6.31	8.40	9.22	9.39	9.68	9.94	10.01	9.93	9.99	10.30	10.24	10.32
Disclosure index, average	2.47	3.58	4.70	5.21	5.36	5.47	5.56	5.60	5.56	5.57	5.73	5.73	5.76
Standard deviation	1.59	1.99	1.82	1.60	1.50	1.47	1.45	1.42	1.41	1.41	1.35	1.36	1.32
#WORDS, average	210	337	465	504	513	548	589	622	629	653	678	655	661
Standard deviation	172	297	347	353	361	398	422	474	501	518	522	505	495
CEO compensation (INDX_1)													
Average	0.11	0.36	0.61	0.68	0.72	0.77	0.86	0.88	0.86	0.87	0.85	0.85	0.85
Standard deviation	0.31	0.48	0.50	0.48	0.46	0.44	0.35	0.34	0.36	0.35	0.36	0.36	0.35
CEO Variable (INDX_2)													
Average	0.44	0.58	0.71	0.77	0.80	0.78	0.77	0.80	0.81	0.79	0.88	0.89	0.90
Standard deviation	0.50	0.49	0.45	0.43	0.40	0.41	0.42	0.40	0.40	0.41	0.32	0.32	0.31
CEO Retirement (INDX_3)													
Average	0.42	0.48	0.70	0.81	0.82	0.84	0.81	0.79	0.76	0.77	0.75	0.73	0.74
Standard deviation	0.50	0.50	0.46	0.39	0.39	0.37	0.39	0.41	0.43	0.42	0.43	0.45	0.44
Other top executives' retirement (INDX_4)													
Average	0.20	0.32	0.48	0.59	0.58	0.62	0.60	0.59	0.57	0.57	0.59	0.60	0.61
Standard deviation	0.40	0.47	0.50	0.49	0.49	0.49	0.49	0.49	0.50	0.50	0.49	0.49	0.49
Termination (INDX_5)													
Average	0.61	0.75	0.80	0.84	0.86	0.88	0.90	0.91	0.92	0.91	0.93	0.95	0.96
Standard deviation	0.49	0.43	0.40	0.36	0.35	0.33	0.30	0.28	0.28	0.29	0.25	0.22	0.20
Severance (INDX_6)													
Average	0.59	0.63	0.67	0.70	0.72	0.72	0.73	0.71	0.71	0.72	0.79	0.78	0.77
Standard deviation	0.49	0.48	0.47	0.46	0.45	0.45	0.45	0.46	0.46	0.45	0.41	0.41	0.42
Other top executives' compensation (INDX_7)													
Average	0.09	0.47	0.71	0.81	0.86	0.86	0.90	0.92	0.94	0.94	0.94	0.94	0.93
Standard deviation	0.29	0.50	0.45	0.39	0.35	0.35	0.30	0.27	0.24	0.23	0.24	0.24	0.26

Note. See Table 1 for variable definitions.

2003 (Näringslivets Börskommitté[9] (NBK, 2003)). In 2001, some firms disclose nothing about their executive compensation policies, and for most firms the executive compensation note lengthened substantially over the studied 13 years. The average number of words (*#WORDS*) increased 215% from 210 in 2001 to 661 in 2013.

The index component of the *ECD_SCORE* substantially increases over time. The largest increase is for (*INDX_1*) and (*INDX_7*). For the CEO compensation item (*INDX_1*), only 11% of the firms disclose at least three components of a CEO's compensation package in the 2001 annual report. But by 2013, 85% of the firms meet this disclosure criterion. The disclosure of non-CEO executive compensation packages (*INDX_7*) is the least common disclosure item in the index in 2001 (9%), but in 2013 it had become the most commonly met criterion (93%). We note that although performance-based bonuses are the main variable compensation component in Sweden, 10% of the firms fail to report details of the bonus system (*INDX_2*) by the end of the studied time period.

Panels A and B of Table 4 presents descriptive statistics for dependent and independent variables. The *ECD_SCORE* has an average value of 9.12 (out of 14), and the disclosure index component is 5.13 (out of 7) for the years 2001 to 2013. The ownership concentration in Sweden is on par with many other European countries (Barontini & Caprio, 2006), as approximately 25% of cash flow rights are owned by the largest owner who owns, on average, an additional 9% of the voting rights.[10]

Table 5 displays correlations between dependent and independent variables. Most test variables (*CF_RIGHTS, OVERPAID, UNDERPAID, MGMTOWN, SIZE, AGE*, and *BIG4*) have the predicted correlation with *ECD_SCORE* (bold indicates a p-value below 0.01). Several independent variables, such as *MGMTOWN* and *CF_RIGHTS*, are correlated with each other; however, multicollinearity appears not to be a concern as Variance Inflation Factor (VIF) values are consistently below five (Baum, 2006). We note that for *OVERPAID* and *UNDERPAID*, interpretations are not meaningful because half of the sample scores a 0 for the two variables. To deal with problems related to correlations between test variables, besides having one multivariate regression including all test variables, we also run multiple regressions with only one test variable at the time. In all regressions, we cautiously employ two-sided statistical tests.

4.2. Ownership incentives to disclose information on executive compensation

To examine how ownership-associated incentives affect the decision to disclose information on executive compensation, we run regression models using the *ECD_SCORE* as the dependent variable (Models 1–5 in Table 6).[11] In all analyses we employ a wide range of control variables, including untabulated industry- and year-fixed effects.

[9] Näringslivets Börskommitté (in English the Swedish Industry and Commerce Stock Exchange Committee) formally ceased to exist in 2010. The Swedish Corporate Governance Board, formed in year 2004, replaced its functions.

[10] Untabulated analyses reveal that almost 95% (75%) of sample firms have at least one owner that controls greater than10% (greater than20%) of the voting rights. On average, the five largest owners control 55% of the voting rights.

[11] Additionally, we use Model 6 as robustness test, with number of words as a dependent variable.

Table 4
Descriptive statistics for dependent and independent variables.

Variable	Mean	Median	Standard deviation	Minimum	Maximum
Panel A - Dependent variable					
ECD_SCORE	9.12	10	3.29	1	14
ECD index	5.13	6	1.78	0	7
#WORDS	545	407	443	0	3250
Panel B - Independent variables					
CF_RIGHTS	0.25	0.21	0.17	0.02	0.99
WEDGE	0.09	0.00	0.12	0.00	0.50
OVERPAID	0.03	0.00	0.06	0.00	0.29
UNDERPAID	0.11	0.00	0.29	0.00	1.69
MGMTOWN	0.07	0.00	0.18	0.00	0.93
SIZE (in bSEK)	39.1	11.5	21.8	0.00	1,791
LEVERAGE	0.20	0.17	0.18	0.00	1.01
AGE (in Years)	41.21	22	44.31	2	128
BIG4	0.95	1.00	0.22	0.00	1.00
OPTIONS	0.38	0.00	0.49	0.00	1.00

Notes. See Table 1 for variable definitions. Continuous variables are winsorized one percent on each tail.

Table 5
Pearson correlation table for dependent and independent variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. *ECD_SCORE*	1											
2. *#WORDS*	**0.7262**	1										
3. *CF_RIGHTS*	**−0.1800**	**−0.1848**	1									
4. *WEDGE*	−0.0213	0.0426	**0.0951**	1								
5. *OVERPAID*	**−0.1041**	**−0.1232**	−0.0150	**0.0692**	1							
6. *UNDERPAID*	**−0.2404**	**−0.1731**	**0.2240**	0.0278	**−0.2139**	1						
7. *MGMTOWN*	**−0.1733**	**−0.1501**	**0.3176**	**0.3051**	**0.2896**	**0.1909**	1					
8. *LEVERAGE*	−0.0150	0.0071	**0.0498**	0.0160	**−0.1843**	**0.0473**	−0.0040	1				
9. *SIZE*	**0.3832**	**0.4726**	0.0349	**0.2117**	**−0.2916**	**−0.1364**	**−0.0574**	**0.3286**	1			
10. *AGE*	**0.1693**	**0.2382**	**0.0451**	**0.2766**	**−0.1453**	**−0.1122**	0.0044	**0.0922**	**0.3927**	1		
11. *BIG4*	**0.1662**	**0.1382**	**−0.0429**	**−0.0959**	**−0.0963**	**−0.0784**	**−0.2022**	**0.0567**	**0.1180**	0.0022	1	
12. *OPTIONS*	−0.0125	−0.0166	**−0.0387**	0.0119	0.0305	0.0109	−0.0112	**−0.0435**	−0.0121	0.010	**−0.0434**	1

Notes: See Table 1 for variable definitions. Continuous variables are winsorized one percent on each tail. Correlation coefficients marked in bold are statistically significant at the 1 % level (double-sided test).

We use Models (1) and (5) to test Hypothesis 1a concerning the Type I equity agency problem. As predicted, firms with concentrated ownership disclose less information on executive compensation. In both Models (1) and (5), coefficients for *CF_RIGHTS* are negative and statistically significant (p-values: 0.000 and 0.001, respectively). This result is in line with agency theory and corresponds with findings from other institutional settings (Bushman & Smith, 2001; Chizema, 2008; Muslu, 2010; Melis et al., 2015). These findings suggest that as controlling owners have access to information channels other than accounting disclosure, costs of disclosure, including proprietary costs linked to releasing information on CEO compensation accessible to firms' competitors, are higher than the perceived benefits of disclosure. The gains coming from ECD are not perceived as sufficient by controlling owners.

In relation to the Type I equity agency conflict, we also employ the variable *MGMTOWN* to test hypothesis 1b. We use Model (2) to test whether firms with high management ownership disclose less information on executive compensation, and find that the coefficient for *MGMTOWN* is negative and statistically significant (p-value: 0.010). Because the variables *CF_RIGHTS* and *MGMTOWN* are correlated[12], we omit *MGMTOWN* from the multivariate Model (5). In untabulated tests, we find that the coefficient for *MGMTOWN* retains its negative association with ECD in a multiple regression that excludes *CF_RIGHTS*.

[12] High levels of cash flow rights controlled by the acting CEO (as captured by *MGMTOWN*) increase the chance of the CEO being the representative (e.g. a family member) of the largest ultimate owner.

Table 6
ECD and disclosure incentives.

		(1)	(2)	(3)	(4)	(5)	(6)
CF_RIGHTS	(-)	−3.108***				−2.596***	−1.597***
		(0.000)				(0.000)	(0.001)
MGMTOWN	(-)		−1.907**				
			(0.005)				
WEDGE	(-)			−2.980***		−2.682**	−1.761**
				(0.001)		(0.002)	(0.002)
OVERPAID	(+)				2.640	4.090**	3.028**
					(0.124)	(0.013)	(0.002)
UNDERPAID	(+/-)				−1.601**	−1.059*	−0.247
					(0.005)	(0.074)	(0.460)
SIZE	(+)	0.671***	0.663***	0.711***	0.666***	0.708***	0.501***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	(+/-)	−2.065**	−2.098**	−2.130**	−1.719**	−1.804**	−1.212**
		(0.003)	(0.003)	(0.002)	(0.019)	(0.010)	(0.005)
AGE	(+)	0.194	0.152	0.291	0.074	0.326	0.119
		(0.473)	(0.577)	(0.290)	(0.784)	(0.233)	(0.508)
BIG4	(+)	0.717	0.526	0.657	0.720	0.526	0.626*
		(0.163)	(0.237)	(0.179)	(0.149)	(0.290)	(0.051)
OPTIONS	(+)	0.207	0.234	0.251	0.244	0.218	0.178*
		(0.168)	(0.126)	(0.103)	(0.114)	(0.138)	(0.061)
Constant		−0.303	−0.607	−1.044*	−0.747	−0.525	−1.838***
		(0.624)	(0.314)	(0.089)	(0.239)	(0.408)	(0.000)
N		2,837	2,837	2,837	2,837	2,837	2,837
R^2		0.443	0.429	0.430	0.438	0.465	0.393
Max VIF		2.24	2.24	2.24	2.25	2.22	2.23
Industry fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes

Note. Table 6 presents regression analyses of hypotheses H1a, H1b, H2 and H3a where ECD (dependent variable: *ECD_SCORE*) is explained using disclosure incentives. In Model (6), *#WORDS* substitute for *ECD_SCORE*. See Table 1 for variable definitions. Continuous variables are winsorized one percent on each tail. Analyses are based on pooled Ordinary Least Squares (OLS) regressions with heteroscedasticity-robust standard errors clustered at firm level. P-values are reported in parentheses and asterisks denote statistical significance at the 10% (*), 5% (**), and 1% (***) levels.

Taken together, the analysis of Hypotheses 1a and 1b suggests more ECD when there are Type I equity agency problems. Although the institutional context under study is somewhat different from previous research, the findings are similar.

Next, we investigate associations between ECD incentives that are particularly important in contexts with weak managers and powerful controlling owners. First, we use Models (3) and (5) to test Hypothesis 2. As predicted, firms where owners have excess control rights provide poorer ECD. In Models (3) and (5), the coefficients on *WEDGE* are negative and statistically significant (p-values: 0.001 and 0.002, respectively). The existence of excess control rights has incremental negative effects on ECD. This is a novel empirical finding consistent with agency theory (Bebchuk et al., 2000) and empirical studies in other areas of accounting disclosure (e.g. Fan & Wong, 2002; Francis et al., 2005; Attig et al., 2006; Li & Zaiats, 2017). Compensation practices may be used to bond the interests of managers and controlling owners, which may not always be in line with non-controlling owner interests (Cieslak, 2018). The results show that Type II equity agency conflicts affect ECD practices.

We use Models (4) and (5) to test Hypothesis 3a, the association between CEO excess compensation and ECD. As discussed in Laksmana (2008) and Laksmana et al. (2012), these relations are expected to be complex, and we first follow Laksmana et al. (2012) and separate overpaid and underpaid CEOs. The coefficient on *OVERPAID* is positive in both Models (4) and (5), but only statistically significant in the multivariate Model (5) (p-value: 0.013). In accordance with Hypothesis 3a, we find evidence that excessively compensated CEOs in Sweden tend to be better at explaining and legitimizing compensation policies. This finding can be explained by the Swedish institutional setting where managers have relatively little power and egalitarianism is important. As in previous research (e.g. Laksmana, 2008; Laksmana et al., 2012), we are concerned with the behaviors of overcompensated managers. However, the negative coefficient for *UNDERPAID* implies that firms disclose relatively less when the CEO is underpaid. Our results for the variables *OVERPAID* and *UNDERPAID* contrast with those from Anglo-Saxon contexts, such as Robinson et al. (2011) and Laksmana et al. (2012), and could be caused by the importance of fairness in the Swedish society (Oxelheim & Randoy, 2005; Isaksson, 2008; Holmberg & Åkerblom, 2012).

The analysis in Models (1) to (5) relies heavily on our self-constructed ECD index. For robustness reasons, we substitute the dependent variable *ECD_SCORE* for *#WORDS* (the number of words in the disclosure note). The results, reported in Model (6), are essentially the same as those for Model (5). Furthermore, untabulated tests in which the *ECD_SCORE* in Models (1) to (4) are substituted with *#WORDS* produce similar results to the results presented in Table 6. That is, the test variables *CF_RIGHTS*, *MGMTOWN*, *WEDGE*, and *OVERPAID* are significantly associated with *#WORDS*.

In all analyses, we employ several control variables. The coefficient for the control variable *SIZE* is consistently positive and indicates that larger firms disclose more information. We also find that the coefficient for *LEVERAGE* is negative. This is surprising in the sense that agency costs of debt ought to be higher in firms with high leverage and, thus, there should

Table 7
ECD and CEO overpayment.

Sample	(1) No Wedge	(2) Wedge	(3) All	(4) Low *cash flow rights*	(5) High *cash flow rights*	(6) All	(7) All
HIGH_RIGHTS	−0.731***	−1.014***	−0.859***			−0.800***	−0.842***
	(0.006)	(0.001)	(0.000)			(0.000)	(0.000)
HIGH_WEDGE			−0.393*	−0.577**	−0.643**	−0.634**	−0.397*
			(0.099)	(0.033)	(0.047)	(0.003)	(0.096)
OVERPAID	8.101***	1.549	8.284***	4.645***	2.387	4.908***	8.546***
	(0.000)	(0.437)	(0.000)	(0.010)	(0.225)	(0.008)	(0.000)
*HIGH_WEDGE*OVERPAID*			−7.108***				−6.999***
			(0.002)				(0.001)
*HIGH_RIGHTS*OVERPAID*						−1.941	−0.528
						(0.409)	(0.802)
UNDERPAID	−1.369***	−0.635	−0.925*	−1.487***	−0.795	−0.951*	−0.925*
	(0.000)	(0.349)	(0.073)	(0.000)	(0.236)	(0.070)	(0.073)
SIZE	0.654***	0.686***	0.686***	0.757***	0.600***	0.691***	0.687***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	−0.832	−2.291**	−1.649**	−2.251***	−1.416	−1.695**	−1.643**
	(0.355)	(0.019)	(0.019)	(0.006)	(0.151)	(0.016)	(0.019)
AGE	0.112	0.553	0.291	0.370	0.124	0.289	0.291
	(0.696)	(0.250)	(0.283)	(0.356)	(0.719)	(0.286)	(0.283)
BIG4	1.304**	0.501	0.599	0.883**	0.220	0.634	0.598
	(0.004)	(0.418)	(0.221)	(0.033)	(0.827)	(0.198)	(0.221)
OPTIONS	−0.020	0.521**	0.248*	0.295*	0.209	0.260*	0.248*
	(0.919)	(0.009)	(0.089)	(0.091)	(0.347)	(0.078)	(0.089)
Constant	−0.847	−1.466*	−0.721	−1.682***	0.249	−0.636	−0.738
	(0.240)	(0.089)	(0.243)	(0.010)	(0.826)	(0.313)	(0.242)
N	1,484	1,353	2,837	1,433	1,404	2,837	2,837
R^2	0.412	0.539	0.468	0.539	0.372	0.465	0.468
Max VIF	2.51	2.04	3.20	2.22	2.31	3.26	4.26
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note. Table 7 presents regression analyses of hypothesis H3b where ECD (dependent variable: *ECD_SCORE*) is explained using disclosure incentives. Models 3, 6, and 7 are the full sample. In Models 1 and 2, the sample is partitioned based on whether firms have dual-class shares. In Models 4 and 5, the sample is partitioned based on median *CF_RIGHTS* (0.214), which captures low and high ownership concentration. See Table 1 for variable definitions. Continuous variables are winsorized one percent on each tail. Analyses are based on pooled OLS regressions with heteroscedasticity-robust standard errors clustered at firm level. P-values are reported in parentheses and asterisks denote statistical significance at the 10% (*), 5% (**) and 1% (***) levels.

be more pressure on management to disclose information. However, we note that *LEVERAGE* is not correlated with *ECD_SCORE*. Hardly surprising, *SIZE* is correlated with a number of test variables, including *AGE* (0.339) and *WEDGE* (0.212). In all regressions, excluding *SIZE* from the regression models strengthen the associations between the test variables and *ECD_SCORE*.

To test Hypothesis 3b, we observe ECD for firms where managers are overpaid and controlling owners possesses excess control rights. These results are provided in Table 7. However, first we recall that Table 6 shows how overpaid managers in general tend to disclose more information on executive compensation. According to Hypothesis 3b, we expect excess control rights to moderate the relation between CEO overpayment and ECD. To perform the analysis, we first split the sample based on whether the firm has a single share class (Model 1) or dual share classes (Model 2). In our Swedish sample, 47.7% have dual share classes.

The data clearly shows an association between *OVERPAID* and *ECD_SCORE* among firms with dual share classes (p-value: 0.000), but no association among firms with a single share class. Model (3) contains the entire sample and an interaction variable *HIGH_WEDGE*OVERPAID* that captures the difference in the association between *OVERPAID* and *ECD_SCORE* for firms with and without dual share classes. The negative coefficient shows that *OVERPAID* has a significantly different association with *ECD_SCORE* in the two samples (p-value: 0.002).

To further understand the association between agency problems, CEO overpayment, and ECD, we perform a similar test in which we partition the sample on the basis of the median cash flow rights (21.4%). This partitioning is conducted without respect to the use of dual share classes. We find that overpaid managers disclose more information in the sample with dispersed ownership (Model (4)), but not when ownership is concentrated (Model (5)). We then use the same approach for the analysis of firms with dual share classes as we construct an interaction variable, *HIGH_RIGHTS*OVERPAID*, that captures the difference in the association between *OVERPAID* and *ECD_SCORE* for firms with and without concentrated ownership. The coefficient for this variable is not statistically significant.

We verify our findings using both interaction variables together in Model (7). The results are similar as the coefficient on the interaction variable *HIGH_WEDGE*OVERPAID* is negative (p-value: 0.001), but the coefficient on *HIGH_RIGHTS*OVERPAID* is not statistically significant. In summary, the results show that overpaid managers in firms where the owner possesses

excess control rights disclose less information. This finding is not driven by cash flow ownership concentration, but by the excess control rights of the controlling owner. We conclude that in our institutional context, with potentially large Type II equity agency conflicts, the existence of excess control rights seems to be an important driver of ECD. While overpaid managers disclose more information on executive compensation policies, they do not have to do so when the controlling owner possesses excess control rights.

4.3. Additional analysis to control for potential endogeneity issues

We recognize that a study like ours can suffer from endogeneity concerns. For example, unobserved factors that influence ownership structure can correlate with unobserved factors affecting disclosure, causing inconsistent estimates. Therefore, in a robustness test we control for endogeneity in connection to ownership structure. We focus the analysis on firms' dual-class shares status and a model that corresponds to Hypothesis 3b – the most important test in the analysis.

We apply a two-stage Heckman approach (Heckman, 1979) using an instrumental variable to explain the choice of dual-class firm status. In the first stage, we estimate a probit regression model to predict the choice of dual-class share status. We use the Inverse Mills ratio from stage one in the stage two regression to explain cross-sectional differences in ECD. As an instrumental variable, we employ the industry category *industrial conglomerates* that consists of firms with investments in other firms and intangible assets. According to Tinaikar (2017), such firms are more vulnerable to potential private benefits extractions. Many Swedish industrial conglomerates are owned by families who are actively involved in their firms. Consequently, industrial conglomerates are more likely to employ multiple share classes (Carlsson, 2007). In the analysis, we employ our control variables, including year and industry fixed effects. We use the Inverse Mills ratio from stage one in the stage two regression to explain cross-sectional differences in disclosure of executive compensation.[13,14] Results presented in Table 8 resemble those presented in Table 7, as the coefficient on *OVERPAID* is positive (p-value: <0.05) and the coefficient on the interaction variable *HIGH_WEDGE*OVERPAID* is negative (p-value: <0.05). We conclude that the previous findings concerning Hypotheses 3a and 3b are robust.

5. Conclusions

Executive compensation is a frequently studied topic in accounting and finance research, but surprisingly little is known about the details of its disclosure. Most prior research was conducted in institutional settings where ownership is dispersed, the largest owner has limited control, and managers have a prominent position. In these settings, managers tend to act on incentives to extract private benefits (Laksmana, 2008; Muslu, 2010; Robinson et al., 2011; Laksmana et al., 2012; Melis et al., 2015; Tinaikar, 2014; 2017). But around the world, it is more common that managers cannot dominate the board and act independently, simply because the firm they manage has a controlling owner. Instead, while executive compensation plays an important role, managers are likely to frequently act in the best interests of the controlling owners that often hired them in the first place. In some extreme situations, management might even be hired to reap personal benefits for the controlling owner at the expense of non-controlling owners. Such arguments are not novel (e.g. Bebchuk et al., 2000), but their consequences for ECD had yet to be shown.

Our analysis is based on data from Sweden, a country where very few firms lack a controlling owner and, therefore, provides an opportunity to learn more on ECD in a different institutional setting. The empirical analysis is based on hand-collected detailed ECDs from 2,837 publicly available annual reports of Swedish listed firms during the years 2001 to 2013. We provide empirical evidence that ECD depends on its context (Melis et al., 2015). Previous cross-country research shows that Swedish firms provide a high level of disclosure and high accounting quality (LaPorta et al., 1999; Leuz et al., 2003). Differences in pay are likely to be less tolerated in the Swedish setting (Oxelheim & Randoy, 2005). We confirm that there is less ECD when there are fewer information asymmetries between a controlling owner and management. This finding is similar for Swedish and Anglo-Saxon contexts, and it aligns our study with much of the traditional accounting literature on disclosure and economic incentives (Watts & Zimmerman, 1986; Healy & Palepu, 2001; Leuz & Wysocki, 2016). However, we also find notable ECD particularities that we attribute to the studied institutional setting. In particular, we find that firms with overpaid CEOs provide better ECD. This contrasts Laksmana (2012) and Robinson et al. (2011). Our results provide a good example of how voluntary accounting disclosure decisions are context-specific.

Previous research on ECD focused on the Type I equity agency conflict between managers and owners. But the disclosure of executive compensation information concerns the interplay between management, controlling owners, and non-controlling owners. As in most countries around the world (La Porta et al., 1999; Aminadav & Papaioannou, 2020), Swedish firms usually have one or two owners that can exercise significant control over the business. In Sweden and elsewhere, it is also quite common that a controlling owner has excess control rights (Barontini & Caprio, 2006).

[13] We perform the two stages of the Heckman analysis separately. We follow Tinaikar (2017) and use the same dummy variable in both stages. The *HIGH_WEDGE* dummy is the dependent variable in the selection (first stage) equation and as an explanatory (and interaction) variable in the outcome equation (using Stata Heckman command would result in omitting *HIGH_WEDGE* variable due to collinearity - the command would assume the dependent variable is only observed when *HIGH_WEDGE* is observed, so there would be no variation in the outcome equation). In our procedure, we use bootstrapped standard errors.

[14] We also estimated linear regression with endogenous treatment (using the Stata function: *etregress*), with the same sets of variables as in Heckman estimations with similar results (given lower standard errors *HIGH_WEDGE* variable gained significance in these estimations).

Table 8
ECD and CEO overpayment and executive compensation disclosure with endogeneity-robust excess control rights measures.

Dependent variable:	Heckman analysis. 1st stage model. *HIGH_WEDGE*	Heckman analysis. 2nd stage model. *ECD_SCORE*
HIGH_RIGHTS		− 0.843*** (0.192)
INSTRUMENT	1.407*** (0.258)	
HIGH_WEDGE		−0.932 (1.144)
OVERPAID		8.155*** (1.821)
*HIGH_WEDGE*OVERPAID*		−7.186** (2.883)
UNDERPAID		−1.410** (0.543)
SIZE	0.098 *** (0.018)	0.696 *** (0.077)
LEVERAGE	−0.712*** (0.213)	−1.691*** (0.576)
AGE	0.604 (0.066)	0.413 (0.322)
BIG4	−0.974*** (0.107)	0.365 (0.629)
OPTIONS	0.137*** (0.047)	0.272 (0.188)
CONSTANT	−0.480** (0.228)	−0.402 (0.701)
Inverse Mills ratio		0.342 (0.692)
N	2,837	2,837
Adj. /Pseudo R^2	0.118	0.465
Industry fixed effects	Yes	Yes
Year fixed effects	Yes	Yes

Note. Table 8 presents a robustness test based on endogeneity-robust measures of excess control rights employing Heckman (1979) first and second stages estimations. The instrumental variable (*INSTRUMENT*) is a dummy taking the value of 1 when a firm-year observation represents the industry category: *industrial conglomerates*. See Table 1 for variable definitions. Continuous variables are winsorized one percent on each tail. Analyses are based on pooled OLS regressions with heteroscedasticity-robust standard errors clustered at firm level. P-values are reported in parentheses and asterisks denote statistical significance at the 10% (*), 5% (**), and 1% (***) levels.

The study makes two particular contributions to the literature and the first one builds on features of the Swedish institutional setting. When managers dominate the board and there are few controlling owners, executive compensation is seen as a problem between management and owners, and executive compensation disclosure is motivated by the agency conflict between managers and owners. When firms have controlling owners, the ECD decision also relates to agency conflicts between controlling and non-controlling owners. In this context, managers are often hired and compensated by controlling owners. As a result, the bond between the CEO and the controlling owner, vis-a-vis the non-controlling owners, affect disclosure decisions. We find that when managers are overpaid by controlling owners with excess control rights, they disclose less information. In such a setting, regulations that would increase ECD quality can increase the pressure on controlling owners and thereby indirectly benefit the non-controlling owners. While Li and Zaiats (2017) and Lobanova et al. (2019) document poorer information environment in dual-class firms using information asymmetry proxies, we investigate one specific area where the disclosure of dual-class firms differs from single-class firms.

Our second contribution is more general. The empirical analysis documents drivers of ECD in an institutional setting with characteristics that are distinct from past research. But around the world, many firms have controlling owners and disproportional owner structures. The analysis suggests both similarities and differences between Swedish and Anglo-Saxon institutional contexts (Clarkson et al., 2006; Laksmana, 2008; Muslu, 2010; Nelson et al., 2010; Laksmana et al., 2012; Tinaikar, 2014). The mere fact that these similarities and differences exist makes it worthwhile continuing to study how disclosure varies across international settings. We believe that finding similar results when making use of a different institutional setting is also a novel finding that allows research to better understand how accounting decisions are affected by the context in which they are made.

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Appendix A. Economic determinants of executive compensation levels

To identify a benchmark pay, we use a model developed by Core et al. (2008), but adopt it to measure both over- and underpaid in accordance with the methodology of Laksmana et al. (2012) and Tinaikar (2014). The procedure contains two steps. First, we annually regress the natural logarithm of total CEO compensation (*CEO_PAY*) on the following economic determinants: CEO tenure (*TENURE*), firm size (*TOTAL_ASSETS*), large cap listing (*LARGE_CAP*), growth opportunities (*BTM*), historical profitability (*H_ROA*), current profitability (*C_ROA*), historical stock return (*H_RETURN*), current stock return (*C_RETURN*), and CEO turnover (*CEO_TURNOVER*).

We measure *TENURE* as the number of years since the CEO's inception (including year t). *TOTAL_ASSETS* measures firm size at year t-1. Unlike e.g. Core et al. (2008), we do not use sales revenue because this measure is noisier in our sample that also contains smaller firms in early stages of their life-cycle. The dummy *LARGE_CAP* takes the value of 1 when the firm is officially listed as a Large cap firm at the Nasdaq OMQ Stockholm at the end of year t. The *BTM* ratio captures growth opportunities, and it is measured as the book value of equity scaled with the market value of equity at year t-1. We measure profitability; *H_ROA* and *C_ROA*, as the net profit (in years t-1 and t) scaled with the average annual total assets. We measure *H_RETURN* and *C_RETURN* as the dividend-adjusted annual stock return (in years t-1 and t).

We estimate the benchmark model annually with an OLS regression including industry-fixed effects. Untabulated univariate analyses reveal that all independent variables are associated with *CEO_PAY*. The table shows the average coefficients from the annual multivariate regressions. In specific, we find that *TOTAL_ASSETS*, *LARGE_CAP*, *MTB*, and *C_RETURN* have a positive association with *CEO_PAY*. The model's averaged annual adjusted R-square is 0.595.

		TotalPay (P-values)
TENURE	(+)	0.306 (0.001)***
TOTAL_ASSETS	(+)	0.612 (0.031)**
LARGE_CAP	(+)	0.274 (0.001)***
BTM	(-)	−0.105 (0.042)***
C_RETURN	(+)	0.076 (0.002)***
H_RETURN	(+)	0.017 (0.391)
C_ROA	(+)	−0.032 (0.117)
ROA	(+)	−0.036 (0.213)
CEO_TURNOVER	(+)	−0.049 (0.412)
Constant		−0.802 (0.000)***
Observations		2,837
Adjusted R^2		0.595
Industry effects		Yes

Note. Analyses based on pooled OLS regressions with heteroscedasticity-robust standard errors clustered at firm level. Asterisks denote statistical significance at the 10% (*), 5% (**) and 1% (***) levels.

Appendix B. Constructing the executive compensation disclosure index

The ECD_SCORE is a total executive compensation disclosure score that ranges from 1 to 14 and it is composed of two main components, the rank based on number of words disclosed in the note on executive compensation (1–7) and the manually collected index (ECD index) of the information content in the note on executive compensation (0–7).

To illustrate differences, we have selected two trading companies: Kappahl (a clothing retailer) and BE Group (industrial trading). Both extracts are from the 2010 annual reports. Although the two firms operate in the same industry in the same year, they provide substantially different levels of disclosure.

These two firms are selected not merely to illustrate the procedure by which the executive compensation disclosure index is constructed, but also to show the level of discretion that is needed in the assessment of disclosure quality.

The number of words were counted in Swedish annual reports, but English versions of annual reports are good approximations of the texts in the Swedish reports.

		Kappahl	BE Group
1	Information on minimum three compensation components (fixed, variable, pension, options and other) is clearly disclosed in a table or highlighted in the text?	1	1
2	It is clearly noted in the text that (i) the CEO receives no variable compensation, or (ii) it is disclosed that a variable compensation exists and at least two of the following issues are disclosed: (a) the extent to which bonus targets were met, (b) the maximum achievable level of bonus, and (c) information on how bonus targets are evaluated (formulas or procedures).	0	1
3	Information on CEO retirement conditions is disclosed. This can include the retirement age, pension level and the type of pension plan. A qualitative assessment is somewhat needed.	0	1
4	Information on other top executives' retirement conditions is disclosed. This can include the retirement age, pension level and the type of pension plan. A qualitative assessment is somewhat needed.	0	1

(*continued on next page*)

Appendix B (*continued*)

		Kappahl	BE Group
5	Information on how the contract with the CEO can be terminated is disclosed. This includes, for example, if there are differences between a voluntary and a forced contract termination, termination clauses.	0	1
6	Disclosure of information on the CEO severance package. This includes, for example, the term of notice, as well as compensation components.	0	1
7	Information on other top executives (not the CEO) is disclosed by either (i) decomposing the total amount of compensation into more than one component, or (ii) discussing how other top executives are compensated.	1	1
#	The number of words disclosed in the note on executive compensation. Excludes words in tables as well as for non-executive employees and board members.	1 (74 words)	7 (1388 words)
	TOTAL	**3**	**14**

Comments

Item #1 – Minimum three compensation components disclosed

Kappahl provides very little information, but there is one table that shows a compensation split into a base salary and pension cost for the CEO. (1)

On the other hand, **BE Group** provides a very detailed table that distinguishes between (i) base salary, (ii) variable pay, (iii) other benefits, (iv) pension expenses, (v) share savings scheme, and (vi) other remuneration. These components are also discussed in the text. (1)

Item #2 – Variable compensation

Kappahl only provides information that there is no variable compensation to the CEO. However, the company does not state whether this is because it does not provide variable pay, or whether the CEO has been unable to obtain variable pay. (0)

On the other hand, **BE Group** discloses the amount of variable compensation together with maximum levels and targets upon which the variable compensation is set. (1)

Item #3 – CEO retirement conditions

Kappahl discloses brief information that CEO retirement is from 60 years of age. No further information is given. (0)

BE Group discloses a detailed discussion that contains information on not only the retirement age and money set aside, but also a discussion of the conditions. (1)

Item #4 – Other top executive retirement conditions

Kappahl discloses that pension plans for top executives are from 65 years of age. However, no additional information is given. (0)

BE Group discloses information for other top executives' pension plans that are similar to what is disclosed for the CEO. It also discloses differences between top executives when such differences exist. (1)

Item #5 – CEO termination conditions

Kappahl discloses that CEO has the right to retain full salary for 6 months. This is the same as the severance pay for all top executives. No additional information is provided. (0)

BE Group discloses information on termination clauses (both when the CEO and when the board terminates the contract). The same information exists for non-CEO top executives. (1)

Item #6 – Severance package information

Kappahl has very brief information claiming that severance packages exist for all senior executives: the right to retain full salary for 6 months. (0)

BE Group provides detailed information on severance packages in terms of their length, levels and conditions. (1)

Item #7 – Minimum three compensation components disclosed for non-CEO executives

Kappahl discloses information about the total base salary and total pension costs for its non-CEO top executives. However, the information does not contain any differences. (1)

BE Group provides detailed compensation information for the CFO (separately) and the other top executives (jointly). The information is broken down into each of the six components and somewhat discussed in the text. (1)

Comparisons with disclosure indexes in Laksmana (2008) and Tinaikar (2017)

Tinaikar (2017) uses a disclosure index based on 10 equal-weighted disclosure items. His disclosure index appears to have a similar level of depth as ours, but it is targeted towards US firms and they tend to have a larger performance-based compensation component relative to Swedish firms. Tinaikar bases the index much more on performance-targets and bonus components. Several of the components in the Tinaikar index require substantial discretion (e.g. Does the company discuss the decision-making process of manager pay?).

Laksmana (2008) uses 23 equal-weighted disclosure items. The items can be divided into the following sections: (a) compensation process, (b) base salary disclosure, (c) pay-for-performance practices: annual incentives, (d) pay-for-performance practices: long-term incentive. Several of the items in the Laksmana index appears fairly easy to collect (e.g. Are there specific performance targets?).

As one can expect, there is a clear overlap of the two disclosure indexes of Laksmana and Tinaikar. Despite this, there is no discussion in Tinaikar (2017) of the components used by Laksmana (2008). Clearly, all disclosure indexes are adapted to their environments. Applying the disclosure indexes of Laksmana or Tinaikar to the sample with Swedish firms would yield very low scores. In Sweden, retirement conditions, severance packages, and termination conditions are more useful determinants. Indeed, a large number of Swedish firms do not have performance-based compensation at all.

The number of components is the largest in the Laksmana study, but some measures appear easier to collect. In terms of the sample sizes, our analysis covers nearly 3000 disclosures whereas the studies by Laksmana and Tinaikar cover 450 and 330 firms, respectively.

More information is available upon request from the authors.

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