

Entrenchment Problem, Corporate Governance Mechanisms and Firm Value

JUHA-PEKKA KALLUNKI

*University of Oulu, Department of Accounting and Finance
P.O. Box 4600, FIN-90014 University of Oulu, Finland.*

HENRIK NILSSON

*Umeå School of Business, University of Umeå,
Department of Accounting and Finance SE-90187 Umeå, Sweden.*

MIKKO ZERNI*

*University of Oulu, Department of Accounting and Finance
P.O. Box 4600, FIN-90014 University of Oulu, Finland.*

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***Corresponding Author:** Mikko Zerni, Department of Accounting and Finance, University of Oulu, P.O. Box 4600, FIN-90014 University of Oulu, Finland. phone: (+358) 8 553 2991 e-mail: mikko.zerni@oulu.fi

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Abstract

In this paper, we investigate the effectiveness of two main corporate governance mechanisms, namely the board of directors and auditing, in mitigating the equity discounts arising from the potential entrenchment problem between inside and outside shareholders. Overall, the empirical results suggest that both boards with equity incentives and higher quality auditors may act as effective governance mechanisms with positive valuation implications. The monitoring incentives of the board of directors appear to play a key governance role. Specifically, we find that boards where board members have invested their personal wealth in the firm demand more stringent auditing, claim higher dividends and thereby limit the agency problem of free cash flow.

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1. Introduction

Agency models suggest that large shareholders in a firm reduce overall agency costs because large shareholders, as opposed to small shareholders, have greater resources and incentives to monitor the management of the firm (Jensen and Meckling 1976; Schleifer and Vishny 1997; Boehmer and Kelley 2009). However, there are also substantial costs associated with large shareholders. For instance, the so-called ‘entrenchment problem’ arises from the possibility that large shareholders opt to use their power to expropriate minority shareholders by taking actions and investment decisions serving their own interests leading to suboptimal outcome for outside shareholders (La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002 and Dyck and Zingales, 2004). What often exacerbates the entrenchment problem is that different control instruments, such as dual-class shares, allow controlling owners to retain control (i.e., voting rights) while owning only a small fraction of ownership (i.e., cash-flow rights). In essence, the use of these control instruments allows controlling shareholders to make decisions that provide them with all the private benefits while bearing a much smaller fraction of the costs resulting from those decisions.¹

In most cases, non-controlling shareholders facing potential expropriation are expected to anticipate wealth loss and discount the share price accordingly. Consistent with the entrenchment hypothesis, several studies from various countries report that high ownership concentration and separation of control rights from cash-flow rights cause agency problems with negative valuation consequences (e.g., Morck, Schleifer, and Vishny 1988; McConnell and Servaes 1990; Claessens et al. 2002; Lins 2003;

¹ Control instruments (e.g., dual-class share structures) allow controlling shareholders to avoid the pro rata consequences of their decisions by creating a significant divergence between cash-flow rights (claim on cash payouts) and voting rights (i.e., the ability to dictate decisions requiring shareholder approval). Terms “large shareholder”, “controlling owner”, and “major shareholder” are used interchangeably in this study.

Cronqvist and Nilsson 2003). Interestingly, recent papers by Gompers et al. (2008) and Masulis et al. (2008) report that divergence between corporate insider control and cash-flow rights also has negative valuation consequences among U.S. companies.²

In order to mitigate the negative valuation consequences of the entrenchment problem, firm insiders may seek effective governance mechanisms to assure outside shareholders that their interests will be protected. Accordingly, in this study we examine whether boards with equity incentives and/or higher quality auditors may act as effective governance mechanisms in mitigating the potential negative valuation consequences of entrenchment. We employ a rich dataset of Swedish firms, which offers three notable advantages for empirical analyses. First, our data allow us to measure the monitoring incentives of boards of directors as the proportion of the board members' total personal wealth invested in the monitoring target. Given rational self-interest, the greater the fraction of personal wealth vested, the greater should be the board members' incentives for value-maximizing behavior. Second, as noted by Gompers et al. (2008) and Doidge et al. (2009), one constraint in studies assessing the linkage between ownership structure and firm value is that two separate forces – incentives and entrenchment – must be identified using only one variable – ownership. In our data, dual-class stock and other control instruments separate cash-flow rights from voting rights, allowing separately identify the impact of both incentives and entrenchment. Sweden makes an excellent focus of research in this case, since both ownership concentration and the separation of control from cash-flow ownership are among the highest in the corporate world (La Porta et al. 1999, Faccio and Lang 2002).

² Gompers et al. (2008) report that 6% of the U.S. firms covered by COMPUSTAT (representing about 8% of the total market capitalization of COMPUSTAT firms) had a dual-class structure during the period from 1994 to 2002, suggesting that the use of control instruments is also more common than previously believed in the U.S.

Finally, the fact that some Swedish firms voluntarily opt to employ more than one audit firm (joint audits) creates more variation in auditor choice and perceived audit quality than would be the case under the traditional Big-4/non-Big-4 dichotomy. In a joint audit, the audit report is signed by two auditors from different audit firms, which are jointly liable for the issued opinion. Based on DeAngelo's (1981) framework, audits performed by two Big-4 audit firms would produce the highest quality audits, while the lowest level of quality would result if there were a single non-Big-4 audit firm performing the audit. Pairings of Big-4 and non-Big-4 audit firms, single Big-4 auditors and pairs of non-Big-4 audit firms fall between these two extreme classes (Francis, Richard and Vanstraelen, 2006). Our sample includes a total of 133 joint audits conducted in 28 unique firms. All joint audit pairs comprise either two Big-4 audit firms or a Big-4 and a non-Big-4 audit firm. Thus, in the absence of pairings of two non-Big-4, joint audits are always perceived to be of higher quality than audits by single Big-4 auditors according to DeAngelo's (1981) framework.

This study contributes to the literature on entrenchment discounts by exploring whether corporate governance devices can effectively mitigate these discounts. While prior research has documented the existence of entrenchment discounts (Morck, Schleifer, and Vishny 1988; McConnell and Servaes 1990; Claessens et al. 2002; Lins 2003; Cronqvist and Nilsson 2003) and the channels through which private benefits are derived at the expense of outside shareholders (Johnson et al. 2000; Masulis et al. 2008), only one study, Fan and Wong (2005), examines the potential bonding and monitoring mechanisms that may affect the magnitude of outside shareholders anticipated wealth loss.³ The results of this study shed further light on this important

³ Fan and Wong (2005) examine the corporate governance role of auditing in East Asian countries and find that client firms with a separation between ownership and control rights are more likely to employ a

issue. Moreover, one of the central, but yet unresolved, issues in the governance debate has been the proper design of compensation schemes for corporate directors. The findings of this study contribute to this debate by enhancing our understanding of the effectiveness of director compensation.

Our main empirical findings can be summarized as follows. First, we find that board members' equity interest and the presence of a strong minority owner increase the likelihood that a firm employs a joint audit. These results suggest that both boards with a vested interest and strong minority owners seek to safeguard the value of their investments by demanding more stringent external monitoring. Second, our results show that the appointment of higher quality auditors mitigates equity discounts due to the entrenchment problem. Specifically, while we document both statistically and economically significant equity discounts for clients of non-Big-4 auditors (the largest discount) and Big-4 auditors (second largest discount), we do *not* find a statistically significant discount for firms employing joint audits. These findings suggest a more complex ordering of (perceived) audit quality, as compared to what one sees under the traditional single auditor approach. Third, we find that both the stock market valuation of free cash flow and the dividend payout ratio of a firm increase with major shareholders and board members ownership of cash flow rights. These results indicate that when corporate insiders incentives are better aligned with those of outside shareholders, the funds of a firm are more likely to be distributed as dividends to shareholders rather than (over-)invested in projects with less-than-zero present value. The monitoring incentives of the board of directors appear to play a key governance role. Specifically, we find that boards where board members have invested their

Big-5 audit firm. They also find some evidence that entrenched firms hiring Big-5 auditors receive smaller share price discounts.

personal wealth in the firm demand more stringent auditing, claim higher dividends and thereby limit the agency problem of free cash flow. In light of these results, it appears crucial to require that those in the heart of monitoring function (board members) have the same goal as those paying for that monitoring (shareholders).

The rest of the paper is organized as follows. Section 2 provides a background on the issues that guide our research design and analyses. Section 3 describes the Swedish institutional environment, while Section 4 describes the data and methodology. We report our results in Section 5, and Section 6 concludes the paper.

2. Literature review and hypotheses

2.1. The entrenchment problem and its consequences

Johnson et al. (2000) refer to expropriation by controlling shareholders as “tunnelling,” which refers to the transfer of assets and profits out of firms for the benefit of controlling shareholders. Private benefits can take a variety of forms, including pet projects, salary enhancements, misuse of perquisites, transfer pricing favoring the controlling shareholder, and arrangement of related party transactions in ways advantageous to the controlling shareholder. Although some forms of expropriation are illegal, most of it occurs within legal limits. One could argue, however, that suboptimal investment decisions can destroy more value than mere “stealing”. For instance, Bebchuk, Kraakman and Triantis (2000) show how controlling shareholders can distort corporate decisions with respect to firm size, investment decisions, and transfers of control. Pérez-González (2006) suggests that the

choice of a family member as CEO can have a significant negative impact if that individual lacks the talent, expertise, or competence to run the business and also lacks the incentives of professional managers to safeguard their reputation on the executive labor market. The opportunity costs created by a suboptimal appointment will be borne by all shareholders, while the private benefits will accrue entirely to the family (Pérez-González 2006).

A common feature of all of the above private benefits is that not all value is shared among all the shareholders. Instead, it is enjoyed exclusively by the party in control. In general, prior research so far suggests that controlling owners will ensure that management, either through themselves or professional managers, serves controlling owners' interests, which may lead to investment decisions that are suboptimal for non-controlling owners.

Studying a sample of East Asian firms, Claessens et al. (2002) report that large controlling shareholders have greater incentives to expropriate when the separation between control rights and cash-flow rights increases. They find that firm value (Tobin's Q) increases with the level of cash-flow rights and decreases with the separation of cash-flow rights from the control rights of the largest shareholder.

La Porta et al. (2002) report that outside shareholders are more likely to be expropriated by the controlling owner in countries with a lax legal environment and that expropriation is negatively related to the level of the cash-flow rights of the controlling owner. Consistent with La Porta et al. (2002), Doidge et al. (2009) find that the entrenchment discount is mitigated by cross-listings on highly litigious U.S. stock exchanges but not by those on other stock exchanges.

Recently, Masulis et al. (2008) analyzed a sample of U.S. dual-class companies and reported that as the separation of cash-flow rights from control rights increases, corporate cash holdings are worth less to outside shareholders, CEOs receive higher compensation, managers make acquisitions detrimental to shareholder value, and capital expenditures contribute less to shareholder value.

Jensen (1986, 1989) suggests that firm insiders with high free cash flow and low growth opportunities may engage in value-decreasing activities. In the context of our study, this means that if controlling shareholders are to act opportunistically, overinvest, or misuse the funds, then the higher the level of free cash flow, the greater are the possibilities for controlling owners to engage in such value-destroying activities. Excess cash is the most liquid corporate asset and hence offers corporate insiders the most latitude as to how and when to spend it. Corporate insiders may, for instance, invest in projects that offer them non-pecuniary private benefits (e.g., pet projects or empire building) but destroy outside shareholder value. As noted by Masulis et al. (2008), “a dollar of corporate cash holding may not be worth a dollar to outside shareholders,” since firm insiders may spend part or all of it on the pursuit of private benefits.

Following prior entrenchment research (Claessens et al. 2002), we use the cash-flow rights of the largest shareholder of a firm as a proxy for the degree of incentive alignment between the largest shareholder and minority shareholders. Also, we build on prior literature and use the separation of voting rights from cash-flow rights as a measure of the entrenchment of the largest shareholder. The higher the degree of separation, the more entrenched is his or her position, and the lower is the cost that he or she would bear if he or she were to expropriate. In other words, as the degree of

separation increases, the degree of incentive alignment with minority shareholders decreases (Morck et al. 1988; Claessens et al. 2002; Cronqvist and Nilsson 2003; and Fan and Wong 2005).

2.2. Agency conflicts and auditor choice

Our first set of analyses examines the determinants of auditor choice. There is a large body of audit research investigating quality-differentiated audits with statutory audit requirements (e.g., Johnson and Lys 1990; DeFond 1992; Francis and Wilson 1988; Firth and Smith 1992; Fan and Wong 2005). These studies report that in general, the higher the level of agency costs, the higher is the level of assurance needed to confirm the integrity of financial disclosures. Of specific relevance to our study is Fan and Wong (2005). They examine the corporate governance role of auditing in East Asian countries and find that client firms with a separation between ownership and control rights are more likely to employ a Big-5 auditor. Following Fan and Wong (2005), we test whether the expected entrenchment problem and other agency characteristics of the firm affect the decision to employ higher quality auditing, i.e., auditing above and beyond the legal minimum. Given effective control, we are expected to witness more monitoring and bonding mechanisms if the benefits associated with increased monitoring outweigh the forfeited benefits due to the governance constraint.

We also examine whether the strength of other governance devices i.e. board member ownership interests in the firm or the presence of a strong minority shareholder affect the likelihood of employing higher quality auditing. It is *ex ante* an

empirical question whether the strength of the board or the presence of a strong minority shareholder complements or substitutes for external auditing. On the one hand, the strong monitoring incentives of board members and/or of strong minority owners may serve as monitoring substitutes for auditing, thereby leading to lower demand for external auditing. On the other hand, boards with an ownership interest in the monitoring target and/or strong minority owners may seek to protect the value of their investments by demanding more stringent auditing.

2.3. Perceived audit quality and the entrenchment discount

When ownership is heavily concentrated, the effectiveness of conventional internal and external governance mechanisms (such as the board of directors and market for corporate control) can become questionable. Consequently, the governance role of auditing in confirming the integrity of published financial statements might be reinforced. Auditing derives its value from its role in reducing information asymmetries between corporate insiders and outsiders by providing reasonable assurance that the firm's financial statements are fairly stated. For instance, auditors may help prevent expropriation by verifying companies' disclosures about related party transactions and thus making it more difficult for controlling owners to conceal the consequences of their actions from outside shareholders.

DeAngelo (1981) shows that audit quality tends to increase with the size of the audit firm. She defines audit quality as a market-assessed joint probability that an auditor will discover an error or irregularity in the accounts and that the auditor will report the breach to shareholders and other parties required under contracts or by law.

In this framework, audit firms with diversified client portfolios and international reputations have more to lose from acting opportunistically and as a consequence of avoiding audit failure report a more independent opinion on client's accounts (DeAngelo 1981). Consistent with DeAngelo's (1981) framework, a substantial body of prior empirical research has documented a positive relationship between auditor size and various proxies for audit quality (e.g., Teoh and Wong 1993; Becker et al. 1998; Francis 2004).

Economic bonding and the potential impairment of auditor independence is likely to be a less severe problem with the joint audit approach than it is with the single auditor approach. This is simply because, in joint audits, the amount of audit fees and lucrative consulting fees is distributed between two different audit firms. Together, the two audit firms may stand stronger against managerial and/or controlling owner's pressure and report their opinion on clients' accounts more independently. However, there are at least two opposing arguments that may predict an insignificant or even a negative association between joint audits and audit quality. First, an auditor may free-ride on other auditors' effort during the course of audit. In other words, auditor might attempt to shirk and shoulder less than a fair (agreed) share of the execution of the audit program. Second, it may be difficult for two competing audit firms to establish close cooperation leading to insufficient information exchange. To the extent that either of above arguments is true, joint audits may be even associated with lower actual audit quality. However, neither of these arguments is likely to affect the market assessment of audit quality. In particular, auditor independence in appearance (and the market-assessed perception of *ex ante* high audit quality) requires that financial statement users believe that external auditors are free of corporate insiders' control, or

users will suspect the truthfulness of auditors' representations. The only observable outcome of the audit process is the audit report issued, which, at least in its standard form, does not contain much information about the audit quality. Given that the two separate audit firms are jointly liable for the opinion issued (and the absence of pairings of two non-Big-4 audit firms), it is likely that joint audits are perceived to be of higher quality by the minority shareholders/users of financial statements, than audits under single auditor approach.

Francis et al. (2006) investigate joint auditor-pair choices and their implications on audit quality in France with mandatory requirement to employ two separate audit firms. They report that higher agency cost proxies are significantly positively related to the likelihood of employing higher quality audits. Francis et al. (2006) further report that French firms are valued more highly than neighbouring firms in Belgium and interpret this finding as suggestive of the idea that joint audits would be better in reducing information asymmetry therefore resulting in higher valuation. As opposed to a mandatory setting, some Swedish client firms have voluntarily opted to appoint more than one audit firm making the research setting in the present study fundamentally different.

While the purpose of auditing is to provide users of financial statements with a reasonable assurance that the financial reports are fairly stated, the auditor's task is *not* to judge the economic reasonableness of the organization's business activities, strategies or decisions made by the management. Instead, it is at least in part the task of the board of directors to protect shareholders' assets and ensure that they receive a decent return on their investments, which entails more direct involvement in managing the company's operations. Thus, it is plausible that a board may also govern the real

operations and decisions of the company, while the effects of auditing on firm value (if any), most likely materialize through effects on the information risk of financial statement users. In light of this discussion, we assume that the higher the level of external verification of the integrity of financial disclosures, the lower will be the information risk of corporate outsiders, and the lower the potential equity discount due to the entrenchment problem. This view is captured by the following hypothesis:

Hypothesis 1: *Higher quality auditing mitigates the equity discount caused by the entrenchment problem.*

2.4. Board effectiveness and the wealth of outsider shareholders

Strong corporate governance has long been regarded a crucial element in enhancing the long-term value of a firm for its stakeholders. In the corporate governance framework, the board of directors is generally considered to play a crucial role. For instance, according to McKinsey & Company's global investor opinion surveys (2000, 2002), institutional investors perceive board practices as one important aspect of financial performance when evaluating companies for investment.

Given the economic importance of corporate governance and the central role of the board of directors in it, it is critical to identify the key elements that enhance the board's ability to effectively represent the interests of shareholders. After examining law and lawsuit outcomes in both common and code law countries, Black, Cheffins and Klausner (2006) report that outside directors hardly ever face actual out-of-pocket liability for good faith conduct, suggesting that legal liability is not an important factor

in getting outside directors to perform their jobs well. What then offers directors the incentives to work hard and exercise judgment independent of corporate insiders? Holding expertise constant, it is likely that directors with a higher ownership interest in the monitored target will outperform those with little or no vested interest. It is well recognized that people respond to monetary incentives.⁴ Already Adam Smith posited that: “It is not from the benevolence of the butcher, the brewer, or the baker, that we can expect our dinner, but from their regard to their own interest” (1776, p. 119).

Based on the above discussion, we expect that the greater the proportion of board members’ personal wealth invested in the firm, the greater will be the board members’ incentives to engage in value-maximizing behavior. Specifically, we hypothesize that when board member incentives are better aligned with those of outside shareholders, the funds of the firm are less likely to be (over-)invested in projects with less-than-zero present value. This view is captured by the following hypothesis:

Hypothesis 2: Board members monitoring incentives due to ownership interests in the firm increase the stock market valuation of the company’s free cash flow.

3. The institutional setting in Sweden

According to Faccio and Lang 2002, Sweden has the highest percentage of firms issuing dual class shares. Therefore, it is no surprise that the separation of ownership and control in Sweden is among the highest in the world (La Porta et al. 1999). La

⁴ Due to lack of data, we are not able to control for the effects of potential option programs, fixed pay (e.g., annual retainers) or meeting fees when modelling the motivation of directors to monitor. However, while higher attendance fees and/or fixed annual pay may signal that these firms are demanding more board attendance and overall diligence, we believe that equity-based compensation is still likely to best align shareholder and director incentives in a manner conducive to firm value-maximizing behaviour.

Porta et al. (1999) also state that Swedish conglomerate groups are some of the most complex organizations in Europe. However, combining pyramiding⁵ with dual-class shares and high levels of debt, the typical Swedish pyramid has only three levels, while Canadian pyramids, for example, may have up to ten (Holmen and Högfeld 2004; Morck, Wolfenzon and Yeung 2004).

The Swedish financial system has a tradition of ownership groups holding controlling blocks in affiliated firms and taking an active role in management. These ownership spheres have for a long time controlled several of the largest firms on the Swedish stock market. Ownership spheres exercise control through their holding companies. Closed-end investment funds have historical roots in the economic crisis of the 1920's and 1930's, when Swedish commercial banks took over several financially troubled firms.⁶

The Wallenberg family represents the largest ownership sphere in Scandinavia, with controlling rights over many large companies on the Stockholm Stock Exchange (SSE). The Wallenberg ownership sphere is organized around Skandinaviska Enskilda Banken (SEB) and its holding company Investor. The second-largest ownership sphere is Handelsbanken with its holding company Industrivärlden. At the end of 2006 the Wallenberg sphere (ten largest spheres) controlled around 20 (50) percent of total SSE market capitalization. Nine of the ten largest ownership spheres are connected to a private owner, i.e. a private individual or the current generation's family representative (Carlsson 2007).

⁵ In a pyramid, firm A could, for example, own 50 percent of firm B, which in turn owns 50 percent of firm C. Through the pyramid, firm A has 50 percent of the control rights of firm C but only with 25 percent of the cash-flow rights of firm C.

⁶ In 1934, new Bank Law prohibited banks from using stocks as collateral and the banks were forced to sell their stocks. As a consequence, the owners of banks created holding companies and retained the portfolios through the holding companies (Agnblad, Berglof, Högfeldt, and Svancar 2000).

Schleifer and Vishny (1997), Bebchuk et al. (2000), and Claessens, Djankov, and Lang (2000) claim that the likelihood of expropriation possibilities by insiders, through tunnelling assets, increases when a corporation is affiliated with a sphere of corporations that has the same controlling owner. However, even though the use of control instruments is very common in Sweden, law enforcement, accounting standards, and anti-corruption indices are among the highest in the world, which might hinder the expropriation incentives (La Porta et al. 1999; Holmen and Högfeld 2004). Proxies for private benefits, such as price changes after the elimination of controlling blocks and price differentiation between different classes of stocks are also small, whereas the minority shareholder protection is well developed (Nenova 2003; Dyck and Zingales 2004; La Porta et al. 1999). Specifically, minority owners holding at least ten percent of shares have several important rights. They have the right to require the appointment of a minority auditor, demand certain dividends distributed and convene an extraordinary general meeting (special meeting). Finally, a ten percent minority that has voted against a motion to grant exoneration from liability for the members of the board or the managing director may bring an action for damages on the company's behalf. These rules clearly render expropriations by majorities more difficult than in less developed countries. Strong minority shareholder protection may also increase the willingness of controlling shareholders to establish efficient monitoring and bonding mechanisms to mitigate potential equity discounts.

Consistent with this view, prior empirical evidence indicates that instruments employed in Sweden to leverage control are most likely not driven by incentives to steal. More specifically, Holmen and Högfeld (2004) find no evidence of tunnelling in Sweden, except overinvestment. According to Holmen and Högfeldt (2004), three tax

rules are important for Swedish pyramids and presumably evoking overinvestment. First, the holding company at the top of the pyramid (closed-end investment fund) needs to pay no inter-corporate dividends tax if all incoming dividends are transferred to its shareholders. Hence, no double taxation applies. Second, realized capital gains from active portfolio management by the holding company are also free from tax if reinvested. Finally, the controlling foundation at the top of the pyramid is exempt from tax if a minimum of 90 percent of the received dividends are distributed for scientific, societal, and humanitarian purposes. One implication of the Swedish tax system is that dividends just flow through the pyramid on their way from portfolio firms to the ultimate shareholders of holding companies. This limits the incentives of the ultimate owners to allow portfolio firms to pay large dividends, since the controlling owner will only receive a very small fraction of any dividends paid by the portfolio firms. Indeed, highly leveraged control over other shareholders' capital (retained earnings) and access to intra group capital tend to make Swedish portfolio firms overcapitalized and leads to overinvestment (Holmen and Högfeld 2004).

Also, another Swedish study by Cronqvist and Nilsson (2003) argue that the inferior performance is not due to corporate stealing but rather to suboptimal investment decisions. Cronqvist and Nilsson (2003) argue that the main driver behind firms' use of control instruments is the desire of financially constrained owners to maintain control as the firm grows. They report that family-owned firms and founder families, in particular, are the most inclined to cement their control through the use of corporate control instruments. Through a mixture of different control instruments, shareholders who value control at a very high price, such as (founding) families, are able to attain and hold a given control stake more efficiently (i.e. via a smaller

investment). While both Cronqvist and Nilsson (2003) and Holmen and Högfeld (2004) argue that the existence of entrenchment discounts stems primarily from suboptimal investment decisions, both these studies ignore the potential bonding and governance mechanisms that may eliminate or at least reduce the likelihood of such decisions. Note that since the board prepares a proposal for the allocation of profit/loss in the Annual General Meeting, its governance role in curbing the desire of major shareholders to overinvest in projects with less-than-zero present value to pursue some private benefits may be highlighted.

Swedish companies have a one-tier board structure in which all the directors are elected annually by the shareholders. There are some notable differences between the U.S. and Swedish governance models. First, in Sweden, the law prohibits the CEO from acting as chair of the board, while within U.S. companies it is a typical feature. According to Brickley, Coles and Jarrell (1997), in about 80 % of U.S. companies, the CEO and the chairman are the same person. Furthermore, in Sweden, the board is almost entirely non-executive. The Stockholm Stock Exchange regulations stipulate that no more than one director elected at the shareholders' meeting may be on the executive management team of the company or one of its subsidiaries. However, the independence of the board from the controlling shareholders is generally limited and does not necessarily ensure minority shareholders fair representation. Consistent with this view, the recently issued Swedish Code of Corporate Governance states, "The board of directors in a Swedish company listed on the stock exchange is normally composed exclusively of non-executive directors. Persons with links to major shareholders usually constitute a majority on the board and only a few directors are independent of the major shareholders" (Swedish Code of Corporate Governance

2005, p. 15).⁷ Thus, it is perhaps not too controversial to state that while in some countries (e.g., the U.S.), the board is typically dominated by executive management, in some other countries (e.g., Sweden) the major shareholders are in the driver's seat.

Finally, there are two distinct features of an auditor's legal responsibilities in Sweden that are relevant to the present study. First, auditors must state whether or not they recommend the profit/loss allocation in accordance with the proposal from the board of directors.⁸ Second, auditors are obliged to report if any member of the board or the CEO has carried out any action or committed any oversight that may result in liability for damages.⁹

4. Data and methodology

4.1. Data sources

We start the data gathering process by manually collecting auditor information for the period 2000-2006 from the annual reports of the firms listed on the Stockholm Stock Exchange (SSE). Information on board member identities including their unique social security numbers are obtained from the insider files of *Finansinspektionen*,

⁷ The Swedish Corporate Governance Board is responsible for promoting and developing the Code. On July 1, 2005, The Stockholm Stock Exchange began applying the Swedish Code of Corporate Governance. The Code applies to all Swedish companies listed on the Stockholm Stock Exchange and other foreign companies listed on the same exchange with market capitalization exceeding SEK 3 billion. For more information, see <http://www.corporategovernanceboard.se/>.

⁸ On the rare occasions when auditors do not recommend board's proposal for profit/loss allocation, the underlying reason relates mainly to the ways in which the allocation would violate applicable company laws with respect to distributable retained profit.

⁹ Normally, the auditor will make a clear recommendation to the shareholders to grant discharge from liability. In unusual circumstances, the auditors may – in view of a potentially damaging action or negligence by a member of the board or the managing director – recommend against granting discharge. Also, while it is highly unusual for shareholders to vote against an auditor's recommendation, a shareholder may still freely choose to vote against discharge with or without reason.

which is the Swedish Financial Supervisory Authority. We employ data on Swedish board member stockholdings in their own firm(s) and in other, outside firms from the Nordic Central Securities Depository Group (NCSD)¹⁰, which maintains an electronic database on the ownership of all Swedish stocks. For each board member, this data include the ownership records of all stocks owned at the end of December each year. Data on the other wealth (e.g., real estate, mutual funds, bank holdings and investments in debt securities) of board members come from the official state tax records of the Swedish tax authorities and are reported on an annual basis. Data on the ownership structures of the firms are obtained from the firm SIS Ägarservice AB, which specializes in the analysis of ownership structures for Swedish firms listed on the SSE.¹¹ SIS Ägarservice AB collects and distributes data on the ultimate owners of the listed firms, including indirect holdings through trusts, holding companies and custodian banks. In addition, the company also allows the shares held by family members and other closely related owners to be grouped into a single record. Hence, by using the data from SIS Ägarservice AB, we can accurately identify the true ownership structure of Swedish companies. Finally, we retrieve all the financial statement and market value data from the Thomson Financial Worldscope database.

Our initial sample consists of 1,667 firm-year observations listed on the Stockholm Stock Exchange. We lose 91 firm-year observations when excluding banks and insurance companies due to their unique accounting characteristics (SIC codes 6000-6499) and because it is mandatory for these firms to employ joint audits.

¹⁰ The NCSD (www.ncsd.eu) is the official securities depository and clearing organization to which all participants in the Nordic capital markets are directly or indirectly affiliated. The NCSD provides services to issuers, intermediaries and investors regarding the issue and administration of financial instruments as well as the clearing and settlement of trades on these markets.

¹¹ We wish to thank Sven-Ivan Sundqvist and Daniel Fristedt at SIS Ägarservice AB for providing us with access to their database. <http://www.aktieservice.se/>.

Unfortunately, SIS Ägarservice AB does not report ownership data for foreign companies listed on the SSE or for companies that have become privately held, merged, liquidated or otherwise become inactive. Due to the above limitations in ownership data, we lose 282 of our initial firm-year observations.¹² Financial statement data is obtained from the Worldscope database from which 123 firm-years are eliminated due to missing accounting data for our empirical models. The final sample thus consists of 1,171 firm-year observations. Table 1 presents a summary of the sample selection process and the distribution of the sample across industries and years, while variables used in the empirical models are described in Table 2.

(Insert Table 1 about here)

(Insert Table 2 about here)

4.2. Descriptive statistics and preliminary data analyses

Table 3 reports the descriptive statistics for the variables of interest among the sample companies. On average (median), the largest owners own 23.4 (18.1) percent of cash-flow rights and 33.5 (29.0) percent of voting rights of the firm. Ownership of cash-flow varies between 0.2 and 79.9 percent, while the separation of control from cash-flow ownership varies between 0 and 47.0 percent.¹³ The average proportion of a

¹² The exclusion of inactive firms may introduce bias into our analyses. However, this bias (if any) most likely underestimates the association between strength of corporate governance devices and firm valuation.

¹³ In some unusual cases, the separation of control from cash-flow ownership is negative. In these situations, we set the variable ENTRENCHMENT at zero, since negative values of the entrenchment proxy do not have a clear interpretation. This may have occurred, for instance, due to issuance of new equity (with lower voting power) which, however, has abolished the former ultimate owner's control. To illustrate, consider a company with (currently) a total of 1000 shares from which 990 are B shares with one vote and 10 are A shares with 10 votes. For simplicity, let us further assume that there are only

board member's total personal wealth invested in the firm ranges from 0 to 81.5 percent with a mean (median) proportion of 20.1 (18.4) percent. However, while the equity incentives of the board appear large when measured relative to board members' personal wealth, the board typically holds only a relatively small proportion of total shares. Specifically, the median percentage of the total shares owned by the board is only 1.2 percent. These numbers clearly illustrate that the outcome of modeling the board members' incentive effects can be dependent on the chosen deflator. It is worth noting that in around 5 percent of firm-years, no single board member has any variable ownership interest in the firm that he or she monitors.

The number of professional board members holding at least three board memberships ranges from zero to 7, the average (median) being 1.51 (1). While the number of multiple directorships seems to be associated with director expertise, directors serving on too many boards may devote less time to performing their duties on a single board. Thus, it is *ex ante* not clear whether the number of professional board members is positively or negatively associated with the strength of corporate governance. Around 11 percent of companies employ joint audit, whereas among the clients of single auditors, the Big-4 market share is 91.4 percent. The logarithmic Tobin's Q ranges from -1.747 to 4.330, with a mean (median) of 0.666 (0.618). Finally, 33.5 percent of firm-years have an outside block holder unaffiliated with the controlling owner holding at least 10 percent of the voting rights. All in all, the descriptive statistics indicate that there is sufficient variation in our research variables

two shareholders. Investor 1 holds all the B shares while investor 2, the founder of the company, holds all the A shares. Hence, investor 1 is the controlling owner of the company with a vote ownership of 90.8 percent (990/1090) and cash flow ownership of 99.0 percent (990/1000) producing a negative wedge between control and cash-flow rights. In the untabulated analyses we find that the reported results are not sensitive for excluding those observations in which the separation of control from cash-flow ownership is negative.

permitting an examination of the association between the strength of corporate governance devices and firm valuation.

(Insert Table 3 about here)

Table 4 provides the univariate results when the sample is partitioned into two groups according to whether the share of control rights of the largest shareholder exceeds the share of his or her cash-flow rights. The last three columns of Table 4 report the mean values of the variables and the tests for differences in means between the two subsamples. As can be seen from the table, the firms with separation in control from cash-flow ownership are significantly larger in terms of assets. Unexpectedly, results of unconditional univariate analyses indicate that firms with separation of control and cash-flow rights have higher returns on assets. However, these firms still have significantly lower Tobin Qs than firms without separation of control and cash-flow rights. These results are consistent with the findings of Masulis et al. (2008) that a dollar of corporate cash-holding may not be worth a dollar to outside shareholders in companies with the entrenchment problem. However, note that in order for the entrenchment effect to truly exist, the expected long-run operational performance must, *ceteris paribus*, be lower for the firms with the potential entrenchment problem than for their non-entrenched counterparts.

Firms with separation of control and cash-flow rights are significantly more likely to employ joint audits, and they also significantly more often have an outside block holder. Recall that a ten-percent ownership level confers several minority shareholder rights. It is hence possible that a strong minority, with ownership just over

ten percent, arises as a market response to the potential entrenchment problem. The descriptive evidence in Table 4 indicates that client firms in which the controlling shareholder's control rights exceed cash-flow rights are significantly more leveraged (0.213 and 0.171 respectively) and rely less on equity finance than do companies without separation (0.018 and 0.060 respectively). These differences are consistent with the pecking order theory of finance. Specifically, firms with the potential entrenchment problem are reluctant to engage in seasoned equity offerings for fear of diluting some of their control and, more importantly, because embedded agency problems endogenously raise the costs of external equity capital above the cost of internally generated capital, or debt finance (Myers 1984).

(Insert Table 4 about here)

4.2. Model specifications

4.2.1. Determinants of employing a joint audit

To investigate whether the entrenchment problem and the strength of corporate governance practices affect the likelihood of employing a joint audit, we estimate the following logistic regression model based on prior auditor selection literature (e.g., Francis and Wilson 1988; Firth and Smith 1992; DeFond 1992; Johnson and Lys 1990; and Lennox 2005) (firm and time subscripts omitted):

$$\begin{aligned}
 \text{PROB}(\text{JAUDIT}) = & a + \beta_1 \text{INCENTIVES} + \beta_2 \text{ENTRENCHMENT} \\
 & + \beta_3 \text{BOARDINCE} + v'Z + \text{annual fixed effects} + \text{industry fixed effects}
 \end{aligned}
 \tag{1}$$

where *JAUDIT* is an indicator variable with a value of one if the client firm employs a joint audit, otherwise zero. Variables measuring the incentive and entrenchment effects of large shareholdings are similar to those of Claessens et al. (2002). Specifically, *INCENTIVES* is the share of cash-flow rights held by the largest shareholder, and *ENTRENCHMENT* is either a continuous variable measuring the difference between the share of control rights and the share of cash-flow rights in the hands of the largest shareholder or a dummy variable with a value of one if control rights exceed cash-flow rights, otherwise zero. Since the two measures give very similar results throughout our analyses, we only report those based on the continuous measure. *BOARDINCE* is the average market value of board members stock holdings in the firm divided by the average value of board members total personal wealth (the market value of stock holdings in all firms and the value of other wealth). Finally, the vector *Z* includes firm-specific characteristics that have been reported to affect auditor choice in prior auditor selection research. Statistical significance is calculated using standard errors adjusted for firm-level clustering (Petersen 2009).

4.2.2. Equity discounts and audit quality

Following the bulk of the prior literature, we use Tobin's Q, i.e. the ratio of the market value of total assets to the replacement cost of total assets, to proxy for firm value (Morck et al. 1988; Claessens et al. 2002; Cronqvist and Nilsson 2003; Gompers et al. 2008; and Doidge et al. 2009). The replacement cost of total assets and the market value of total debt are approximated using their book values. The following

random-effects (i.e., random-intercept) model is used to test Hypothesis 1 regarding whether higher quality auditing reduces the information risk of corporate outsiders and lowers the potential equity discount due to the entrenchment problem (firm and year subscripts are omitted except for the random intercept):

$$\begin{aligned}
 LNQ = & \beta_0 + \mu_i + \beta_1 INCENTIVES + \beta_2 ENTRENCHMENT \\
 & + \beta_3 JAUDIT + \beta_4 BIG + \beta_5 ENTRENCHMENT \times JAUDIT \\
 & + \beta_6 ENTRENCHMENT \times BIG + v^i X + \varepsilon .
 \end{aligned} \tag{2}$$

where LNQ is a natural logarithm of Tobin's Q defined as the ratio of firm's market value plus book value of debt divided by the book value of total assets.¹⁴ BIG is a dummy variable with a value of one if the client firm employs a single audit firm that is a member of the Big-4 auditors, otherwise zero. The vector X includes observable firm-specific characteristics that are proxies for differences in the business conditions of individual firms (Claessens et al. 2002, Cronqvist and Nilsson 2003, Fan and Wong 2005; Gompers et al. 2008). All other variables are as described in Model (1).

4.2.3. *Stock market valuation of the free cash flow*

Our next model is designed to test our second hypothesis regarding whether better incentive alignment between firm insiders and outsiders reduces the agency problem of

¹⁴ As in Gompers et al. (2008) and Adams, Almeida and Ferreira (2009), we choose a log-linear specification for Q, since it offers two advantages over Q. First, while Q can never be negative, logarithmic Q can. Using Q instead of logarithmic Q as the dependent variable might therefore generate fitted values that are outside of the natural range of Q. Furthermore, Gompers et al. (2008) propose that the log transformation of Q helps to reduce the influence of potential outliers. Our empirical results are not sensitive to the change in this specification.

free cash flow. Specifically, we estimate the following model by the maximum likelihood method from our unbalanced panel data (firm and year subscripts are omitted except for the random intercept):

$$\begin{aligned} RET = & \beta_0 + \mu_i + \beta_1 INCENTIVES + \beta_2 ENTRENCHMENT + \beta_3 BOARDINCE \\ & + \beta_4 FCF + \beta_5 INCENTIVES \times FCF + \beta_6 ENTRENCHMENT \times FCF \\ & + \beta_7 BOARDINCE \times FCF + \nu'Y + \varepsilon, \end{aligned} \quad (3)$$

where RET is the annual raw stock return and FCF is the level of free cash flow of the firm defined as cash flow from operations minus dividends on preferred shares minus dividends on ordinary shares minus capital expenditures divided by total assets.¹⁵ The vector Y includes observable firm-specific characteristics that may affect the risk-return relationship. All other variables are as described above.

It is important to note that in all our empirical models, we lag all governance measures (including ownership variables) by one year. This lag allows for the effects of any change in governance structure to show up in auditor selection and firm performance. In an attempt to control for the unobserved heterogeneity across sample firms, we allow a firm-specific random intercept, u_i , in Models (2) and (3) because it is unlikely that the observable firm-specific characteristics in vectors X and Y remove all firm heterogeneity. In essence, a random-intercept model assumes that the slope coefficients are constant, while the intercept is allowed to vary across individual firms within a normal distribution (in our case) whose non-zero mean and variance are treated as parameters. In all of our models, statistical significances are calculated by adjusting standard errors for clustering within firms (Petersen 2009). Finally, the

¹⁵ We estimate model (3) by also adding capital expenditures back into the free cash flow measure. The results we obtain are qualitatively similar to those reported (untabulated). Furthermore, we estimate Model (3) also by replacing raw returns with annual industry adjusted (median Fama and French 1997 48-industry classification) excess returns. We find that the results remain qualitatively unchanged (untabulated). However, when using excess returns as a dependent variable, one could argue for the use of the unexpected portion of free cash flow as the independent variable(s).

possibility of heteroskedasticity between firms is taken into account by estimating the standard errors of parameter estimators using the so-called sandwich technique (Diggle et al. 2002, pp. 70-73) originally suggested by White (1980). All t-statistics are calculated using this technique and are robust with respect to heteroskedasticity.

5. Empirical results

5.1. Determinants of joint audits

We begin our multivariate analyses by estimating the logistic regression defined in Model (1). Column (1) of Table 5 reports the results for pooled data, while column (2) reports the results for the subsample in which client firms of single non-Big-4 auditors are excluded. Likelihood ratios indicate that both models are statistically significant at the 1 percent level of significance. In both estimations client size is found to be significantly positively related to the likelihood of employing a joint audit. This finding is consistent with prior auditor selection literature, documenting consistently the propensity of large companies to select large international audit firms with brand name reputations. Larger client firms tend to have higher level of agency costs (e.g., Fama and Jensen, 1983a, 1983b) and can most easily afford to signal high earnings quality (e.g., Francis, 2004). For both samples, our proxy for the entrenchment of the controlling shareholder (*ENTRENCHMENT*) is estimated to be positive but not significant at conventional levels. Regarding the other governance variables, the board's monitoring incentives (*BOARDINCE*) and the existence of a strong minority owner (*BLOCK*) are significantly positively related to the likelihood of employing a

joint audit. These results are consistent with the view that a board with an ownership interest in the firm and strong minority owners seek to protect the value of their investment by demanding more stringent auditing, i.e., auditing above and beyond the legal minimum.¹⁶

(Insert Table 5 about here)

5.2. Effect of perceived audit quality on equity discounts arising from the entrenchment problem

In this section, we report the results of estimating Model (2) to examine whether higher quality auditing affects the outside investors' fear of expropriation.¹⁷ Consistent with prior entrenchment research, we find a significantly negative relation between firm value and our proxy for the entrenchment of the controlling shareholder. This finding suggests that when corporate insiders control more voting rights relative to cash-flow rights, corporate resources are more apt to be diverted to private benefits and are thus valued less by shareholders. The estimated parameter of the variable *ENTRENCHMENT* reported in column (1) of Table 6 indicates that the level of

¹⁶ In the untabulated results, we find that neither the entrenchment proxy (*ENTRENCHMENT*), the board's monitoring incentives (*BOARDINCE*) nor the existence of a strong minority owner (*BLOCK*) are significantly associated with the likelihood of employing a Big-4 auditor among clients of single auditors. One potential explanation for these insignificant findings is the fact that the Big-4 market share among single auditor clients is well over 90 percent, leading to low power in research design because there is such low variance in the experimental variable. In other words, most observations are audited by Big-4 auditors.

¹⁷ The untabulated results from the LR-test very strongly support the use of the random-effects model. Specifically, both p-values of the LR-tests are lower than 0.001. This finding is consistent with the view that there is significant unobservable firm heterogeneity that must be controlled for.

Tobin's Q decreases by 7.6 percent per one standard deviation increase in the separation of controlling owner's control rights and cash-flow rights.¹⁸

Column (2) of Table 6 reports the results of testing Hypothesis 1 regarding whether higher quality auditing mitigates the equity discount arising from a potential entrenchment problem. The results show that the estimated parameter for the interaction variable *JAUDIT*×*ENTRENCHMENT* is significantly positive (and relatively large in magnitude) indicating that only clients of single auditors face a reduction in firm value due to the entrenchment problem. Interestingly, the empirical results suggest that the severity of the discount decreases monotonically with perceived audit quality (i.e. auditor size). Specifically, the largest discount occurs for the clients of non-Big-4 auditors (≈ 18.0 percent), and the second largest is for the clients of Big-4 auditors ($\approx 6.5\%$),¹⁹ while clients of dual auditors do not suffer any statistically significant discount. These findings suggest a more complex ordering of audit quality than under the traditional single auditor approach.²⁰ These findings are

¹⁸ The reported effect of entrenchment has been calculated in the following manner. Let x denote Tobin's Q for a firm with certain characteristics. The corresponding Tobin's Q for a firm with similar characteristics but with a one standard deviation increase in the separation between controlling owner's control and cash-flow rights would then be: $x + (-0.618 \times 0.1276)$, where -0.618 is the coefficient estimate for variable *ENTRENCHMENT* in column (1) of Table 6, and 0.1276 is the standard deviation of variable *ENTRENCHMENT* taken from Table 3. In percentages, the effect would then be: $100 \times [\exp(-0.618 \times 0.1276) - 1] \approx -7.6\%$.

¹⁹ The reported effects are calculated by using the coefficient estimates in column 3 of Table 6. See footnote 18 for a description of the calculations.

²⁰ We have also tested whether the entrenchment effect is significantly different for joint audits conducted by two Big-4 audit firms or a pairing of Big-4 and non-Big-4 audit firms (untabulated). More specifically, we included in the model reported in column (2) of Table 6 a dummy variable for joint audits conducted by two Big-4 audit firms and its first-order interaction with the entrenchment variable. The results of estimating this model show that both of these additional variables are insignificant, while the first-order interaction between *JAUDIT* and *ENTRENCHMENT* remains significantly positive (parameter estimate = 2.120, t-value = 2.04). This finding indicates that joint audits conducted by either a pair of two Big 4 audit firms or a pair consisting of a Big 4 and non-Big-4 have a similar effect on the entrenchment discount i.e. they both mitigate the magnitude of the discount. However, it should be noted that due to the relatively small number of firms employing joint audits there may not be sufficient statistical power within the sample to discriminate between different types of joint audits.

consistent with Hypothesis 1, suggesting that higher quality auditing mitigates the equity discount arising from the entrenchment problem.²¹

Regarding the variables included as controls for other board characteristics, only the number of professional board members is found to be significantly positively related to Tobin's Q.²²

(Insert Table 6 about here)

5.2.1. Addressing potential endogeneity problems

Empirical studies on the effect of ownership on the valuation of a firm are always subject to potential endogeneity criticism. In the case of our study, it is difficult to assess whether the observed effect is causal from audit quality to the valuation of the firm or, alternatively, driven by self-selection. To illustrate, "good firms" may be more willing to expose themselves to higher audit scrutiny and thereby signal high financial information quality (Francis 2004). As noted by Larcker and Rusticus (2007) and Francis and Lennox (2008), biases due to endogeneity are notoriously difficult to

²¹ Note that we cannot test whether the variable *BOARDINCE* is significantly related to Tobin's Q. This is because there is a mechanically positive correlation between *BOARDINCE* and Tobin's Q, as the price of the company's stock is included in the numerators of both Q and *BOARDINCE*. When including the percentage of the total shares held by the board members in the monitoring target (*BOARDPER*) into Model (2), we find that the coefficients for both *BOARDPER* and the first-order interaction between *BOARDPER* and *ENTRENCHMENT* are not estimated significant at conventional levels. In this untabulated estimation, the inferences from our other variables of interest remain unchanged.

²² In the untabulated results, we also use the following additional governance variables when regressing Tobin's Q: the natural logarithm of board size, natural logarithm of average board member wealth, average tenure of board members, average board member age, percentage of female directors in the board, CEO tenure, and CEO age. However, none of these variables appear significant at conventional levels.

correct, especially in accounting research in which appropriate instrumental variables are very difficult to find.

Demsetz and Lehn (1985) propose that ownership structures vary between firms in ways that are consistent with value maximization. Consequently, ownership structure is strongly influenced by both observable and, more importantly, unobservable firm characteristics (Himmelberg, Hubbard and Palia 1999; Cronqvist and Nilsson 2003). The denominator in Tobin's Q, the replacement cost of total assets, is of particular concern, since book values of some intangible assets are often quite different from their true replacement cost and hence are affected by unobservable firm-specific characteristics. To address these problems, Himmelberg et al. (1999) argue forcefully for the use of firm-fixed effects in regressions that relate ownership to firm performance. However, a significant downside of firm-fixed effects in regressions is related to variables that are largely time-invariant. If most of the variation in research variables occurs cross-sectional, the firm fixed-effects estimator removes true variation and may fail to detect a relationship in the data even when it exists (e.g. Zhou 2001). In essence, firm-fixed effects control for unobservable and observable firm heterogeneity, assuming that this heterogeneity remains constant over time.

As an initial attempt to deal with the endogeneity issue, we estimate Model (2) as a firm-fixed effect-extension. The rightmost column of Table 6 reports the results of this specification. As can be seen, the estimated results remain robust. Specifically, both the coefficient for the first-order interaction between the joint audit indicator and entrenchment as well as the first-order interaction between the Big-4 indicator and entrenchment are estimated positive and significant at the 5 percent level. The F-test

for testing the firm-fixed effects versus the pooled OLS is significant at the 0.1 percent level, indicating that firm fixed-effects are needed.²³

As a second attempt to deal with the endogeneity issue, we adopt a two-stage Heckman (1979) procedure (not tabulated). In the first stage, we estimate the logistic regression by modeling the probability that a joint audit is chosen by including all exogenous variables from Models (1) and (2). We then compute the inverse Mills ratio $PRED(JAUDIT)$ for each observation and include it in the Tobin's Q regression model instead of variable $JAUDIT$. We find that the coefficient for the interaction term between $PRED(JAUDIT)$ and $ENTRENCHMENT$ is positive and significant at the 10 percent-level (estimate = 1.057, t-value 1.72). We conclude that the analyses from the two-stage procedure support Hypothesis 1 that higher quality auditing reduces the information risk of outside investors and mitigates the equity discount due to the entrenchment problem.

5.3. Corporate governance mechanisms and the stock market valuation of free cash flow

Table 7 presents the results of estimating Model (3) to test Hypothesis 2 regarding whether the monitoring incentives of board members due to their ownership interests in the firm are positively related to the stock market valuation of the firm's free cash flow. Column (1) of Table 7 reports the results without the interaction

²³ However, when evaluating the goodness of the model fit between random-effects and fixed-effects, we find that the Bayesian information criterion (BIC) is smaller for the random-effects version of the model, suggesting the use of random-intercept over firm-fixed effects. Furthermore, maximum likelihood methods do not compute the sums of squares. However, by calculating the residual and total sums of squares, we can report the adjusted R-square statistics to facilitate comparability between related studies.

variables so that it can be used as a benchmark for subsequent analyses. We gradually increase the number of interactions between different governance variables and the level of free cash flow because the correlations between interaction effects are high due to the common underlying variable *FCF*. For the two rightmost columns with the highest numbers of interaction variables, we also report the VIF (variance inflation factors) values in square brackets to help assess the severity of potential multicollinearity problems.

As is evident, the level of free cash flow is strongly positively related to stock returns (estimate = 0.690, t-value 5.31). In column (2) of Table 7, we extend the model by adding first-order interactions between the variables *ENTRENCHMENT* and *FCF* as well as between *INCENTIVES* and *FCF*. Estimated coefficients are consistent with Gompers et al. (2008), indicating that the value of free cash flow increases with the controlling owners' ownership of cash-flow rights (estimate = 1.857, t-value 2.74). The estimated coefficient on the first-order interaction between *ENTRENCHMENT* and *FCF* is negative but not significant at conventional levels (estimate = -1.349, t-value -1.01).

Consistent with Hypothesis 2, the estimated parameter for the interaction variable between *BOARDINCE* and *FCF* is significantly positive. In other words, the results indicate that the value of free cash flow increases with the portion of personal wealth that board members have invested in a firm. The estimated results in Table 7 may be interpreted such that when the incentives of corporate insiders are better aligned with those of outside shareholders, the outside investors anticipate less future wealth loss, thereby leading to a higher market valuation of free cash flow.

Auditor type appears to have *no* significant effect on the stock market valuation of free cash flow. This finding is consistent with the view that the auditor's task is *not* to judge the appropriateness of the organization's business activities, strategies or decisions made by the firm insiders but only to provide reasonable assurance that financial reports are fairly stated. Only in the rightmost column of Table 7 do the variance inflation factors indicate potential problems with multicollinearity (for *FCF*, $VIF = 16.04$ and for *FCFxBIG*, $VIF = 10.12$). In the rest of the reported models, all VIF values are lower than 6, suggesting that multicollinearity is not a problem.²⁴

(Insert Table 7 about here)

As a final test of whether the primary cause of entrenchment discounts is overinvestment costs and whether governance variables contribute to these costs, we examine cross-sectional differences in the dividend payout ratio.²⁵ The incentives of controlling owners to allow portfolio firms to pay large dividends is limited if they own few cash-flow rights and therefore receive only a very small fraction of dividends paid. Moreover, as we discussed in the Section 3, Swedish tax rules limit the incentives of controlling owners to allow portfolio firms to pay large dividends. However, their incentives to distribute excess cash as dividends arguably increase with the ownership of cash-flow rights. Similar reasoning also applies for the incentives of board members. Specifically, as the portion of board member personal wealth invested

²⁴ According to Belsley et al. (1980), collinearity is a potential problem in a regression when the condition number is above 20; and a severe problem if it is above 30.

²⁵ The results are qualitatively similar if we replace the dividend payout ratio with the ratio of dividends to total assets (i.e. common dividends divided by total assets).

in the firm increases, the higher should be their incentives for value-maximizing behavior.

In order to test whether this is the case, we regress the dividend payout ratio on different governance variables and a set of control variables. The control variables include: size (natural logarithm of total assets), leverage, growth (capital expenditures to sales), profitability (return on assets), and an indicator for the existence of a strong minority (recall that ten-percent ownership entitles shareholders to demand certain dividends distributed).

Table 8 reports the results of these analyses.²⁶ The explanatory power of the model is over 60 % (in column 2), suggesting that our dividend payout determinants, taken as whole, explain a significant portion of the variation in the dividend payout. Interestingly, the results show that the levels of cash-flow ownership of both the controlling owners and board members are significantly, positively related to the dividend payout ratio. Both effects are statistically significant at the 1 percent level. Together, the findings in Tables 7 and 8 indicate that corporate insider cash-flow ownership reduces the agency problem related to free cash flow. These findings suggest that as the cash-flow ownership of corporate insiders increases, corporate funds are less likely to be overinvested in projects with less-than-zero present value but rather are distributed as dividends.²⁷ Alan Greenspan has once pointed out, "unlike cash dividends, whose value is unambiguous, there is no unambiguously 'correct' value

²⁶ Note that in the analyses reported in Table 8, the sample size is reduced to 1,018 firm-year observations due to missing data for the dividend payout ratio in the Thomson Financial Worldscope dataset.

²⁷ The Jensen (1986, 1989) type of free cash flow problem is especially pronounced for firms with low growth opportunities (and high *FCF*). We do not divide our sample firms according to growth opportunities as for instance in Gul and Tsui (1998) and Gul (2001), but instead control for growth opportunities by including the ratio of capital expenditures to sales and random intercept in the regressions. Hence, our free cash flow test is not exact but a rough indication of the Jensen (1986, 1989) type of free cash flow problem.

of earnings" (Greenspan 2002, 3). This seems indeed to be the case, especially from the perspective of outside shareholders; i.e., sometimes a bird in the hand is worth two in the bush.²⁸

(Insert Table 8 about here)

5.4. Additional analyses

As additional analyses, we re-estimate all our reported models that include the variable *BOARDINCE* by replacing it with the percentage of total shares held by board members in the monitoring target (*BOARDPER*). Regarding the results reported in Table 5, the estimated coefficient for the variable *BOARDPER* is positive but just below conventional levels of significance (estimate = 3.037, Chi-square = 2.32). The inferences from the other joint audit determinants remain unchanged.

In the re-estimations of Table 7, we obtain results very similar to those reported. Specifically, the estimated coefficient for the first-order interaction between *BOARDPER* and *FCF* is significantly positive, suggesting that the value of free cash flow increases with board members share ownership in the monitoring target (estimate

²⁸ The incentives of controlling owners to distribute dividends is likely to be lowest when they have low ownership of cash-flow rights but at the same time holds high vote ownership, which is attained through control instruments. Under these circumstances, the great majority of the potential costs incurred from the controlling owner's decisions are borne by outside shareholders. In untabulated results, we extend the model reported in column (2) of Table 8 with two additional variables: an indicator variable with a value of one if the controlling owner's cash flow ownership belongs to the 1st quartile of its distribution and a first-order interaction variable between this indicator and our proxy for entrenchment. With this extension, we can potentially identify those cases in which the largest shareholders have the lowest incentives to pay large dividends. Consistent with this notion, we find that the coefficient for the interaction term is significantly negative (estimate = -0.321, t-value = -2.14), while the entrenchment variable itself remains insignificant. Accordingly, the results from this additional analysis suggest that the incentives of controlling owners to allow a firm to distribute larger dividends are lowest when they exert control over relatively few cash-flow rights. In this untabulated estimation, we find that all the other reported results remain qualitatively unchanged.

= 3.00, t-value 2.53). With one exception, the results for our other variables of interest remain unchanged: the coefficient for the first-order interaction between variables *ENTRENCHMENT* and *FCF* is now estimated as significantly negative (estimate = -2.315, t-value = -1.71).

Finally, the results regarding the dividend payout ratio reveal one notable difference. Specifically, when using the alternative definition, we find no significant relationship between the proportion of dividends distributed and board share ownership (estimate = 0.083, t-value = 1.03). The observed differences suggest that the incentive effects (and risk preferences) of the board members may depend on other characteristics of the board, like for instance, the board members' need for liquid cash. Clearly, much additional work is needed to enhance our understanding of the effectiveness of incentive-based remuneration for the board of directors.

6. Conclusions

Several studies report that the potential entrenchment problem arising from high ownership concentration and the separation of control rights from cash-flow rights leads to discounts in the stock market value of the firm (Morck, Schleifer, and Vishny 1988; McConnell and Servaes 1990; Claessens et al. 2002; Lins 2003; Cronqvist and Nilsson 2003; and Masulis et al., 2008). Except for the work of Fan and Wong (2005), prior studies have ignored the potential bonding and monitoring mechanisms that might mitigate the severity of these discounts. In this study, we employ a rich dataset of Swedish firms to explore whether board of directors and/or higher quality auditing mitigate the equity discounts arising from the entrenchment problem.

Our empirical findings can be summarized as follows. First, the empirical results suggest that board members' equity interest and the presence of a strong minority owner increase the likelihood of employing more stringent auditing, i.e., auditing above and beyond the legal minimum. The estimated positive relationships suggest that both boards with a vested interest and strong minority owners seek to protect the value of their investment by demanding more rigorous external monitoring. Second, we find that higher quality auditing mitigates equity discounts due to the entrenchment problem. Specifically, we find both statistically and economically significant equity discounts for clients of non-Big-4 auditors (the largest discount) and Big-4 auditors (the second largest discount), but we do *not* find any significant discounts for firms employing joint audits. Finally, we find that both the stock market valuation of free cash flow and the dividend payout ratio of a firm increase with major shareholders and board members ownership of cash flow rights. Collectively, the above mentioned positive relations suggest that as incentives between corporate insiders and outsiders are better aligned, the excess funds of the firm are more likely to be distributed as dividends rather than (over-)invested in projects with less-than-zero present value.

While our findings remain robust to a broad range of sensitivity analyses and research design choices, our study suffers from at least one limitation. In the absence of proper instruments, we are unable to determine whether the linkage is causal from the strength of monitoring to the (information risk) valuation of the firm or if it is, alternatively, driven by reverse causality. To illustrate, board members may retain higher ownership stakes if the firm is performing well, whereas good companies might be more willing to expose themselves to more rigorous auditing. However, it should be

conceded that virtually all empirical studies assessing the linkage between ownership and performance are susceptible to this concern.

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Table 1. Sample selection criteria and industry composition

Panel A: Sample selection criteria		Total						
Initial firm-year observations for years 2000-2006		1667						
1. Less banks and insurance companies (SIC codes 6000-6499)		91						
2. Less missing ownership data		282						
3. Less missing other data for the empirical models		123						
Final sample		1171						
Panel B: Industry composition		Number of observations	Percent of observations					
SIC code								
73 Business services		196	16.7					
87 Engineering and management services		91	7.8					
36 Electronic and other electric equipment		90	7.7					
38 Instruments and related products		78	6.7					
35 Industrial machinery and equipment		77	6.6					
65 Real estate		61	5.2					
37 Transportation equipment		60	5.1					
50 Wholesale trade – durable goods		43	3.7					
34 Fabricated metal products		42	3.6					
67 Holding and other investment offices		42	3.6					
26 Paper and allied products		34	2.9					
48 Communication		32	2.7					
24 Lumber and wood products		29	2.5					
28 Chemicals and allied products		22	1.9					
27 Printing and publishing		22	1.9					
Other ^d		253	21.6					
Total		1171						
Panel C: Distribution of observations by fiscal year								
Year	2000	2001	2002	2003	2004	2005	2006	Total
Number of observations	133	155	168	175	182	179	179	1171

Notes:

^d The industries represented in this group include the two-digit SIC codes: 8, 10, 13, 15, 16, 20, 21, 22, 23, 25, 28, 30, 33, 39, 44, 45, 47, 49, 51, 52, 55, 56, 57, 59, 79, and 82.

Table 2. Variable definitions.

Variable	Definition
<i>LOG Q</i>	Natural logarithm of Tobin's Q, which is the ratio of the market value of a firm to the replacement cost of its assets. We define Tobin's Q as the market value of equity plus the book value of debt divided by the book value of total assets.
<i>RET</i>	Annual raw stock return.
<i>INCENTIVES (%)</i>	Share of cash-flow rights held by the largest shareholder of the firm.
<i>ENTRENCHMENT (%)</i>	A continuous variable measuring the simple difference between the share of control rights and the share of cash-flow rights in the hands of the largest shareholder.
<i>OWNERSHIP OF VOTES (%)</i>	The share of voting rights held by the largest shareholder of the firm.
<i>BOARDINCE (%)</i>	The average market value of board member insider holdings divided by the value of average board member wealth (i.e., the market value of holdings in all insider and outsider stocks and the value of other wealth).
<i>BOARD MEMBER WEALTH (Millions SEK)</i>	The value of average board member wealth (i.e., the denominator of the variable <i>BOARDINCE</i>).
<i>BOARDPER (%)</i>	The percentage of the total shares held by all board members in the monitoring target.
<i>JAUDIT</i>	A dummy variable with a value of one if the client firm employs joint audit, otherwise zero.
<i>BIG</i>	A dummy variable with a value of one if the client firm employs a single audit firm that is a member of the Big-4 auditors, otherwise zero
<i>BLOCK</i>	A dummy variable with a value of one if the firm has an outside block holder unaffiliated with the largest shareholder owning ten percent or more of the voting rights, otherwise zero.
<i>PROFESSIONAL</i>	Number of board members in a given company who hold at least three directorships.
<i>LOGASSETS</i>	Natural logarithm of total assets.
<i>DEBT-TO-ASSETS</i>	Ratio of debt to total assets.
<i>ROA</i>	Return on assets.
<i>CAPEX/SALES</i>	Capital expenditures divided by sales.
<i>SALES/TOTAL ASSETS</i>	Sales divided by total assets.
<i>EQUITY</i>	Net proceeds from equity sales divided by lagged total market capitalization.
<i>FCF</i>	Cash flow from operations minus dividends on preferred shares minus dividends on ordinary shares minus capital expenditures divided by total assets.
<i>PAYOUT</i>	Common dividends divided by net income before preferred dividends.

Table 3. Descriptive statistics of audit related variables and ownership structure (N=1,171).

Variable	Mean	Std.	Min	25%	Median	75%	Max
<i>OWNERSHIP OF VOTES</i> (%)	33.53	21.97	0.20	15.50	28.95	47.20	93.50
<i>INCENTIVES</i> (%)	23.43	16.41	0.20	11.30	18.10	31.40	79.90
<i>ENTRENCHMENT</i> (%)	10.10	12.76	0	0	3.80	20.50	47.00
<i>BOARDINCE</i> (%)	20.07	14.80	0	8.40	18.38	28.27	81.52
<i>BOARDPER</i> (%)	8.18	15.34	0	0.12	1.24	8.34	89.68
<i>BOARD MEMBER WEALTH</i> (Millions SEK)	79.270	365.711	0	4.166	11.419	33.904	4,939.601
<i>LOG Q</i>	0.666	0.784	-1.747	0.140	0.618	1.165	4.330
<i>RET</i>	0.181	0.567	-0.900	-0.154	0.153	0.437	2.728
<i>BLOCK</i>	0.335	0.472	0	0	0	1	1
<i>PROFESSIONAL</i>	1.51	1.50	0	0	1	2	7
<i>JAUDIT</i>	0.114	0.319	0	0	0	0	1
<i>BIG</i> ^a	0.914	0.281	0	1	1	1	1

Notes:

OWNERSHIP OF VOTES is the share of voting rights held by the largest shareholder of the firm; *INCENTIVES* is the share of cash-flow rights held by the largest shareholder of the firm; *ENTRENCHMENT* is a continuous variable measuring the simple difference between the share of control rights and the share of cash-flow rights in the hands of the largest shareholder. *BOARDINCE* is the average market value of board member insider holdings divided by the value of average board member wealth (i.e., the market value of holdings in all insider and outsider stocks and the value of other wealth). *BOARDPER* is the percentage of the total shares held by all board members in the monitoring target. *LOG Q* is the natural logarithm of Tobin's Q, which is the ratio of the market value of a firm to the replacement cost of its assets. We define Tobin's Q as the market value of equity plus the book value of debt divided by the book value of total assets. *RET* is annual raw stock return. *BLOCK* is a dummy variable with a value of one if the firm has an outside block holder unaffiliated with the largest shareholder owning ten percent or more of the voting rights, otherwise zero. *PROFESSIONAL* is the number of board members in a given company who hold at least three directorships. *JAUDIT* is a dummy variable with a value of one if the client firm employs joint audit, otherwise zero. *BIG* is a dummy variable with a value of one if the client firm employs a single audit firm that is a member of the Big-4 auditors, otherwise zero. ^aConditional on the firm employing a single audit firm.

Table 4. Differences in the research variables between firms with control exceeding vs. non-exceeding ownership.

	Control exceeds ownership	Control does <i>not</i> exceed ownership	Difference in means
Variable	Mean	Mean	t-value
<i>OWNERSHIP OF VOTES (%)</i>	46.40	21.70	23.01***
<i>INCENTIVES (%)</i>	25.29	21.73	3.74***
<i>ENTRENCHMENT (%)</i>	21.10	0.00	—
<i>LOG Q</i>	0.50	0.82	7.04***
<i>RET</i>	0.20	0.16	1.28
<i>BOARDINCE (%)</i>	20.78	19.41	1.59
<i>BOARDPER (%)</i>	11.54	5.09	7.18***
<i>BLOCK</i>	0.39	0.29	3.75***
<i>PROFESSIONAL</i>	1.56	1.47	0.94
<i>LOGASSETS</i>	14.51	13.74	6.64***
<i>SALES/TOTAL ASSETS</i>	1.07	1.23	-2.72***
<i>CAPEX/SALES</i>	0.08	0.10	-1.04
<i>DEBT-TO-ASSETS</i>	0.21	0.17	3.94***
<i>EQUITY</i>	0.02	0.06	-3.91***
<i>ROA</i>	0.04	-0.04	6.02***
<i>JAUDIT</i>	0.16	0.07	4.71***
<i>BIG</i> ^a	0.90	0.92	-0.72
N	610	561	

Notes:

See Table 2 for variable definitions. Statistical significance at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and * respectively. The difference test is based on the t-statistic for difference in means. ^aConditional on the firm employing a single audit firm.

Table 5. Logistic regression results for the determinants of employing a joint audit

$$PROB(JAUDIT) = a + \beta_1 INCENTIVES + \beta_2 ENTRENCHMENT$$

$$+ \beta_3 BOARDINCE + v'Z + \text{annual fixed effects} + \text{industry fixed effects} \quad (1)$$

Variable	Predicted Sign	(1) All firms (χ^2 -values)	(2) Non-Big-4 clients excluded (χ^2 -values)
Intercept		-14.13*** (44.57)	-13.04*** (33.83)
<i>LOGASSET</i>	+	0.330** (5.85)	0.294** (4.17)
<i>DEBT-TO-ASSETS</i>	+	0.332 (0.04)	0.338 (0.05)
<i>EQUITY</i>	+	-0.208 (0.11)	-0.194 (0.10)
<i>ROA</i>	-	-0.870 (0.62)	-0.593 (0.26)
<i>ENTRENCHMENT</i>	+	2.664 (1.74)	2.379 (1.37)
<i>INCENTIVES</i>	-	-1.184 (0.32)	-1.631 (0.50)
<i>BOARDINCE</i>	?	3.054** (6.42)	3.157* (3.77)
<i>BLOCK</i>	?	0.966** (4.46)	0.947** (4.12)
Annual fixed effects?		Yes	Yes
Industry fixed effects?		Yes	Yes
N (# joint audits)		1171 (133)	1075 (133)
Likelihood ratio, χ^2		270.70***	250.63***
Nagelkerke R ²		40.0 %	39.5 %

Notes:

The table reports the results of estimating Model (1). χ^2 -values of the estimated parameters are reported in parentheses. See Table 2 for variable definitions; All test statistics are two-tailed. ***, **, and * Pr $\geq \chi^2$ denote the 1 percent, 5 percent, and 10 percent levels respectively. Standard errors are adjusted for clustering within firms (Petersen 2009).

Table 6. Analyses of the effects of entrenchment and corporate governance on Tobin's Q
$$LNQ = \beta_0 + \mu_i + \beta_1 INCENTIVES + \beta_2 ENTRENCHMENT + \beta_3 JAUDIT + \beta_4 BIG + \beta_5 ENTRENCHMENT \times JAUDIT + \beta_6 ENTRENCHMENT \times BIG + \nu X + \varepsilon \quad (2)$$

Variable	Predicted Sign	(1)	(2)	(3)
Intercept		2.515 *** (4.70)	3.036 *** (5.13)	5.429 *** (5.67)
<i>LOGASSETS</i>	-	-0.114 *** (-3.13)	-0.141 *** (-3.64)	-0.256 *** (-4.45)
<i>ROA</i>	+	0.219 (1.53)	0.247 * (1.71)	0.327 *** (2.60)
<i>DEBT-TO-ASSETS</i>	+	0.822 ** (2.47)	0.862 *** (2.65)	1.035 *** (4.69)
<i>SALES/TOTAL ASSETS</i>	+	0.152 ** (2.26)	0.160 *** (2.74)	0.196 *** (2.92)
<i>CAPEX/SALES</i>	+	0.074 (0.96)	0.070 (1.00)	0.103 (1.44)
<i>INCENTIVES</i>	+	-0.070 (-0.30)	-0.097 (-0.40)	0.003 (0.01)
<i>ENTRENCHMENT</i>	-	-0.618 * (-1.72)	-1.491 ** (-2.11)	-1.555 *** (-2.95)
<i>BLOCK</i>	?		-0.054 (-1.05)	-0.043 (-0.89)
<i>PROFESSIONAL</i>	?		0.039 * (1.94)	0.029 * (1.72)
<i>JAUDIT</i>	?		-0.283 (-1.56)	-0.259 (-1.59)
<i>JAUDIT x ENTRENCHMENT</i>	+		1.738 ** (1.97)	1.695 ** (2.42)
<i>BIG</i>	?		-0.187 (-1.13)	-0.171 (-1.37)
<i>BIG x ENTRENCHMENT</i>	+		0.965 (1.35)	1.032 ** (2.01)
Annual fixed effects?		yes	yes	yes
Industry fixed effects?		yes	yes	no
Random firm intercept?		yes	yes	no
Firm fixed effects?		no	no	yes
N (# joint audits)		1171 (133)	1171 (133)	1171 (133)
-2 log likelihood		1715.3	1781.2	1064.3
Adjusted R ²		74.2 %	74.5 %	71.3 %

Notes:

The table reports the results of estimating Model (2). See Table 2 for variable definitions; Statistical significance based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and *, respectively. Figures in parentheses are t-values based on standard errors adjusted for heteroskedasticity (White 1980) and firm-level clustering (Petersen 2009). For simplicity, results for the fixed effects are not reported.

Table 7. Analyses of the effects of free cash flow on market values
$$RET = \beta_0 + \mu_i + \beta_1 INCENTIVES + \beta_2 ENTRENCHMENT + \beta_3 BOARDINCE + \beta_4 FCF + \beta_5 INCENTIVES \times FCF + \beta_6 ENTRENCHMENT \times FCF + \beta_7 BOARDINCE \times FCF + \nu Y + \varepsilon . \quad (3)$$

Variable	Predicted Sign	(1) RET	(2) RET	(3) RET [VIF]	(4) RET [VIF]
Intercept		0.397 ^a (2.65)	0.415 ^a (2.82)	0.353 ^b (2.43)	0.326 ^b (2.20)
<i>LOGASSETS</i>	?	-0.007 (-0.65)	-0.008 (-0.81)	-0.006 (-0.62)	-0.007 (-0.66)
<i>DEBT-TO-ASSETS</i>	?	-0.079 (-0.80)	-0.011 (-0.11)	-0.008 (-0.08)	-0.002 (-0.02)
<i>CAPEX/SALES</i>	+	0.035 (0.77)	0.044 (1.03)	0.062 (1.44)	0.053 (1.21)
<i>INCENTIVES</i>	?	0.059 (0.64)	0.122 (1.22)	0.128 (1.26)	0.134 (1.30)
<i>ENTRENCHMENT</i>	?	0.111 (0.94)	0.074 (0.62)	0.073 (0.61)	0.071 (0.60)
<i>BOARDINCE</i>	?	-0.123 (-1.07)	-0.131 (-1.13)	-0.063 (-0.50)	-0.049 (-0.39)
<i>JAUDIT</i>	?	-0.030 (-0.40)	-0.050 (-0.68)	-0.047 (-0.66)	-0.005 (-0.07)
<i>BIG</i>	?	-0.018 (-0.31)	-0.036 (-0.60)	-0.030 (-0.52)	0.003 (0.05)
<i>FCF</i>	+	0.690^a (5.31)	0.502^a (4.45)	0.129 [5.27] (0.57)	-0.245 [16.04]
<i>FCF x ENTRENCHMENT</i>	-		-1.349 (-1.01)	-1.806 [1.53] (-1.45)	-2.247^c [1.66] (-1.79)
<i>FCF x INCENTIVES</i>	+		1.857^a (2.74)	2.204^a [2.28] (2.96)	2.478^a [2.48] (3.41)
<i>FCF x BOARDINCE</i>	+			1.569^b [3.55] (1.96)	1.615^b [3.56] (2.04)
<i>FCF x JAUDIT</i>	?				0.722 [1.17] (1.19)
<i>FCF x BIG</i>	?				0.375 [10.12] (1.44)
Annual fixed effects?		yes	yes	yes	yes
Industry fixed effects?		yes	yes	yes	yes
Random firm intercept?		yes	yes	yes	yes
N		1171	1171	1171	1171
-2 log likelihood		1542.4	1527.3	1516.7	1513.6
Adjusted R ²		28.2 %	29.0 %	29.5 %	29.5 %

Notes:

The table reports the results of estimating Model (3). See Table 2 for variable definitions; Statistical significance based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ^{a, b,}

and ^c respectively. Figures in parentheses are t-values based on standard errors adjusted for heteroskedasticity (White 1980) and firm-level clustering (Petersen 2009). Numbers in square brackets are variance inflation factors (VIF). For simplicity, results for the fixed effects are not reported.

Table 8. Analyses of the effects of corporate governance on dividend payout

$$Payout = \beta_0 + \mu_i + \beta_1 INCENTIVES + \beta_2 ENTRENCHMENT + \beta_3 BOARDINCE + \nu'W + \varepsilon .$$

Variable	Prediction	(1) Dividend Payout	(2) Dividend Payout
Intercept		-0.558 *** (-5.55)	-0.454 *** (-4.58)
<i>LOGASSETS</i>	+	0.045 *** (6.25)	0.038 *** (5.17)
<i>DEBT-TO-ASSETS</i>	-	-0.113 (-1.54)	0.017 (0.22)
<i>SALES/TOTAL ASSETS</i>	+	0.025 * (1.86)	0.022 * (1.71)
<i>CAPEX/SALES</i>	-	-0.032 (-1.12)	-0.016 (-0.45)
<i>ROA</i>	?	0.108 *** (2.87)	0.005 (0.22)
<i>BLOCK</i>	+	-0.009 (-0.45)	0.012 (0.69)
<i>BOARDINCE</i>	+	0.174 *** (2.67)	0.170 *** (2.87)
<i>INCENTIVES</i>	+	0.318 *** (3.95)	0.233 *** (3.81)
<i>ENTRENCHMENT</i>	-	0.085 (0.75)	0.085 (0.88)
Annual fixed effects?		yes	yes
Industry fixed effects?		yes	yes
Random firm intercept?		no	yes
N		1018	1018
-2 log likelihood		-370.6	-526.8
Adjusted R ²		35.2 %	62.5 %

Notes:

See Table 2 for variable definitions; Statistical significance based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and * respectively. Figures in parentheses are t-values based on standard errors adjusted for heteroskedasticity (White 1980) and firm-level clustering (Petersen 2009). For simplicity, results for the fixed effects are not reported.

APPENDIX 1

Pearson's correlation coefficients among selected variables

	<i>Entrenchment</i>	<i>Log Q</i>	<i>RET</i>	<i>Boardince</i>	<i>Jaudit</i>	<i>Big</i>	<i>Block</i>	<i>Professional</i>	<i>Logassets</i>	<i>Debt-to-assets</i>	<i>Equity</i>	<i>ROA</i>
<i>Incentives</i>	0.122 ***	-0.135 ***	0.071 **	-0.060 **	-0.062 **	0.013	-0.064 **	-0.025	0.002	0.089 ***	-0.121 ***	0.205 ***
<i>Entrenchment</i>		-0.180 ***	0.028	0.003	0.092 ***	0.016	-0.050 *	0.032	0.203 ***	0.138 ***	-0.095 ***	0.135 ***
<i>Log Q</i>			0.288 ***	0.181 ***	-0.113 ***	-0.063 **	-0.033	-0.082 ***	-0.189 ***	-0.200 ***	-0.015	-0.033
<i>RET</i>				-0.030	-0.022	0.031	0.046	-0.022	0.088 ***	0.051 *	0.023	0.355 ***
<i>Boardince</i>					0.011	-0.183 ***	0.044	-0.122 ***	-0.107 ***	-0.104 ***	-0.008	0.049 *
<i>Jaudit</i>						-0.120 ***	0.090 ***	0.080 ***	0.208 ***	0.106 ***	-0.038	0.026
<i>Big</i>							-0.103 ***	0.179 ***	0.250 ***	0.054 *	0.030	0.089 ***
<i>Block</i>								0.015	-0.018	0.024	-0.042	0.090 ***
<i>Professional</i>									0.565 ***	0.044	-0.086 ***	0.159 ***
<i>Logassets</i>										0.366 ***	-0.123 ***	0.403 ***
<i>Debt-to-assets</i>											-0.025	0.124 ***
<i>Equity</i>												-0.248 ***

Notes:

See Table 2 for variable definitions. Statistical significance based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and * respectively.