Reputation capital of directorships and demand for audit quality

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Reputation capital of directorships and demand for audit quality

Abstract

This study examines whether boards of directors use external auditing to protect their reputation capital. We hypothesize and find that audit quality increases with the level of directors' reputation capital. More specifically, using ten-year panel data on Finnish listed companies, we find that our measures of reputation capital based on the number of directorships that directors possess and their compensation are positively associated with various proxies for audit quality. We also find that the observed reputation effect on audit fees is stronger in companies with an audit committee, and that reputation capital matters in auditor choice in those companies in particular. In combination, our results add to the literature on the reputation capital of those in charge of corporate governance.

Keywords: audit quality, reputation capital, audit fees, auditor choice, abnormal accruals

JEL Classification Codes: M42, M41, M10

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> *In our times, reputation has become the most important corporate value.*
> (Alan Greenspan, 2001)[1].

1. Introduction

Prior research shows that the demand for audit quality increases with the level of agency problems between a firm and the outside providers of funds (e.g. Fama, 1980). A great body of research focuses on the relationship between the *management* and providers of capital (e.g. DeFond, 1992; Francis & Wilson, 1988; Pittman & Fortin, 2004; Willenborg, 1999). However, less attention has been paid to the underlying driver of that demand, namely, the reputation concerns of the board of *directors* who are ultimately in charge of the governance practices implemented by the firm. We argue that directors use external auditing to protect their own reputation capital, and that the demand for audit quality increases with directors' reputation capital.

We test our hypotheses by examining whether audit quality as measured by audit fees, a firm's choice of individual auditor in-charge, and the financial reporting quality of the firm is related to directors' reputation capital as measured by the number of their directorships in different firms and directors' compensation from all of their directorships. In our analyses, we use data on listed companies in Finland over the sample period from 2007 to 2016. We use Finnish data for two reasons. First, audit reports have been signed by individual auditors for a long period of time in Finland. This enables us to identify the individual auditor in charge of each audit engagement and to identify client portfolios in our auditor choice analyses. Second, as in many other continental European countries, litigation risk is relatively low in Finland, thereby helping us to interpret our

[1] Cited in Klewes and Wreschniok (2009).

results of analyzing audit fees. In low litigation risk countries, a high level of audit fees for a firm is more likely to reflect greater audit effort rather than a risk premium required by an auditor as compensation for the high litigation risk.

Our results support the hypothesis that the demand for audit quality increases with the reputation capital of the board of directors. In particular, we find consistent evidence that audit fees increase with directors' reputation capital, and that boards with higher reputation capital choose auditors with larger client portfolios. We also find that this reputational capital effect on audit fees is stronger in companies with an audit committee, and that reputation capital matters in auditor choice in those companies in particular. Regarding financial reporting quality, we find some evidence to support our hypothesis for income-increasing abnormal accruals, but not for income-decreasing accruals.

We contribute to the literature on corporate governance and the demand for audit quality (Carcello, Hermanson, Neal & Riley Jr., 2002; Abbott, Parker, Peters, & Raghunandan, 2003; Hay, Knechel & Ling, 2008; Knechel & Willekens, 2006). Specifically, our results on directors' use of external auditing to protect their own reputation capital enhance the understanding of the role of auditing in the corporate governance mix, and of the demand for audit quality in general. We also add to the literature on reputation capital in the context of corporate governance. Finally, our study is of interest to all those involved in corporate governance—not only to directors themselves but also to policymakers, auditors, and investors.

The remainder of the paper is organized as follows. In the next section, we develop our hypothesis. Section 3 explains our empirical proxies for audit quality and directors' reputation capital, and describes the models used in our analyses. Section 4 describes our institutional setting

and data. Section 5 reports our results. Finally, we conclude the paper by discussing the findings, contribution, limitations, and implications of the study.

2. Directors' reputation capital and demand for audit quality

Corporate reputation is a valuable intangible asset (Dowling, 2006), helping the firm to perform better. This view is supported by Roberts & Dowling, (2002), who found that firms with good reputations are better able to sustain their profitability over time. In their analyses, they correlated the reputation scores of companies in surveys by Fortune magazine with their financial performance. Using a similar approach, Schwaiger, Raithel, & Schloderer, (2009) found that companies with a high reputation have better stock market performance than other firms. Consistent with this, Filbeck & Preece, (2003) found that the stock market reacts more positively to announcements when the firm is listed as one of Fortune's 100 best companies to work for. Also, firms with good reputation have better access to institutional loans (Diamond, 1991) than firms without it. In essence, firms are incentivized to 'manage' their reputation (Gotsi & Wilson, 2001; Gray & Balmer, 1998).

Corporate reputation can, however, easily be destroyed. Good illustrations of this are the notorious cases of Enron and WorldCom in early 2000, followed by the case of Lehman Brothers a few years later. Reputation is an intangible asset similar to a brand name. Leaning on the idea that the brand name of a firm works as collateral (Klein & Leffler, 1981), we argue that reputation capital, being similar to a brand name, also serves as collateral that is lost if 'promises are not kept'.

The adverse impact from damaged reputation is not limited to the firms themselves, but also affects the individuals associated with the firm. Fich & Shivdasani, (2007) found a decline in the number of directorships held by the directors of firms that faced a lawsuit due to alleged financial

fraud. To avoid an adverse impact from bad news, directors are found to resign from the board when they foresee that the firm will perform poorly in the future (Fahlenbrach, Low, & Stulz, 2010), or if it is too late, they may try to hide their involvement as the directors of firms facing adverse events such as litigation or bankruptcy (Gow, Wahid, & Yu, 2018).

What could directors do to protect their reputation capital? We argue that directors could use external auditors to improve the quality of internal controls and financial reporting of the firm to lower the risk of misstatements in financial reporting and the risk of fraud, thereby protecting their own reputations as trustworthy and vigilant monitors of the firm. Consistent with our argument, meta-analysis of audit fee research (Hay, 2013) provides evidence that audit fees are positively associated with internal control and with corporate governance, linking quality of corporate governance to demand for audit quality. Particularly, board characteristics such as independence, diligence, and expertise are found to be positively associated to audit fees (Carcello et al., 2002). As financial reporting quality is a joint product of the preparer of the reports and the auditor (DeFond & Zhang, 2014; Francis, 2004), studies linking the quality of financial reporting quality and reputation can be interpreted as providing at least indirect support for our argument. For example, Cao, Myers, & Omer (2012) found that companies with a better reputation are less likely to misstate their financial statements and more likely to produce higher quality financial reports. In addition, Francis, Huang, Rajhopal, & Zang (2008) found that firms with more reputable CEOs are associated with better earnings quality.

Modeling a firm as a single decision-maker, the firm would choose a combination of a board of directors, internal controls, and external auditing that would be optimal for the costs and benefits of those monitoring mechanisms (Anderson, Francis, & Stokes, 1993; Cohen, Krishnamoorthy, & Wright, 2004). However, this line of thinking fails to acknowledge one critical characteristic of

directors. Namely, unlike the managers and employees of the firm, directors of the board may work with more than one firm. This notion has important implications in our study, bearing in mind that it is the board of directors that is responsible for the internal controls and corporate governance of the firm. With multiple directorships, a director's reputation capital is not associated with just one firm, but with several, originating from the network of the firms they serve instead of from one single firm. Therefore, bad news regarding one firm has an adverse impact on the reputation capital as a whole of the director associated with several firms. This view is supported by Fich and Shivdasani (2007), who found a decline in the number of directorships held by the directors of firms that faced a lawsuit due to alleged financial fraud. Given this, the board of directors cannot be regarded as a single decision-maker, but as a group of individuals with varying levels of reputation capital accumulated from several other firms. As each individual director bears the full cost of damage to their own reputation capital, but does not bear the full cost of monitoring the firm (Hay et al., 2008; Knechel & Willekens, 2006), each individual director's optimum level of costs and benefits differs from that of the other directors on the board, and also from that of the firm. This creates an incentive for an individual director with high reputation capital originating from multiple directorships to invest more in external auditing than a director with less reputation capital at stake, or more than would be optimal from the firm's perspective. Put differently, the reputation capital of each board of directors consists of the sum of the reputation capital of all the individual directors. Consequently, the demand for audit quality increases with the sum of reputation capital of the individual directors. This leads to our hypothesis:

Hypothesis: The reputation capital of the board of directors is positively associated with the demand for audit quality.

3. Method and variable definitions

3.1. *Regression model*

We use the following regression model to test the association between the reputation capital of a board of directors and the demand for audit quality:

$$\begin{aligned} &Audit\ Quality = \alpha + \beta_1 Reputation\ Capital + \beta_2 SIZE + \beta_3 SQRSUBS + \beta_4 INVREC + \\ &\beta_5 EQUITY + \beta_6 LOSS + \beta_7 GROWTH + \beta_8 ROA + \beta_9 P/B + \beta_{10} OCF + \beta_{11} LAGWCA + \\ &\beta_{12} DUAL + \beta_{13} ACCEXP + \beta_{14} ACEXIST + \beta_{15} BOARD\ AGE + \beta_{16} SERIES + \\ &\beta_{17} OWNERSHIP + year\ fixed\ effects + Industry\ fixed\ effects + \\ &audit\ firm\ fixed\ effects + \varepsilon \end{aligned} \quad (1)$$

We use three different dependent variables to capture different aspects of audit quality (DeFond & Zhang, 2014), i.e. audit fees, choice of audit partner, and abnormal working capital accruals. Similarly, we use three variables to capture the aspects of the reputation capital of board members, i.e. total number of directorships, average number of directorships, and board compensation. For consistency, we use the same set of control variables in our analyses to control for the factors that might affect audit quality.

3.2. Audit quality proxies

Audit fees: Following the literature that uses input-based audit quality measures to study the demand side of audit quality, we use audit fees as our first measure of audit quality (DeFond & Zhang, 2014). In a competitive market, the fee premium captures incremental quality above an average supplier. As a proxy for audit quality, the audit fee has some desirable characteristics, but also some limitations (DeFond & Zhang, 2014). The major strength of using the audit fee is that,

as a continuous variable, it captures subtle variations in quality, not limited to a narrow subset of companies. Moreover, as documented by Caramanis & Lennox (2008), the audit effort, which is the main component of the audit fee, and earnings management are inversely related, providing a link between audit effort and financial reporting quality. Regarding limitations, the audit fee is still only an indirect measure of audit effort as other factors are also reflected in the fee. For instance, the audit fee might capture a heightened risk for the auditor.[2] All in all, the audit fee is one of the most common measures of audit quality in prior archival studies (Simnett, Carson, & Vanstraelen, 2016). Following these prior studies, we use a natural logarithm of the audit fee (*LNAUDFEE*) as a dependent variable in our fee analyses.

Auditor choice: Our second proxy for the demand for audit quality is the choice of the individual audit partner (i.e. auditor in-charge of the engagement). As the choice of the audit partner does not reflect the auditor's risk premium for audit risk in the same way that audit fees would, using it as another measure of audit quality increases the robustness of our analyses. Prior research shows that audit quality varies not only between audit firms, but also between individual auditors (Gul, Wu & Yang, 2013, Kallunki, Kallunki, Niemi, & Nilsson, 2019) even within the same firm (Cameran, Campa, & Francis, 2017; Carey & Simnett, 2006; Taylor, 2011). Applying DeAngelo's (1981) well-known model, we create a measure of perceived auditor quality in which auditors with larger client portfolios are perceived as higher quality auditors, as the greater 'quasi rents' (future net cash flows) from their portfolios serve as collateral against opportunistic behavior. More specifically, using all Finnish companies (both publicly listed and privately held) that have total assets in excess of five million euros (5,396 firm-year observations), we calculate a

[2] Chiu, Teoh, & Tian, (2013) document how earnings management spreads between firms via shared directorships. Thus, multiple directorships might capture a higher risk for some auditors, which might be reflected in higher audit risks and fees. In our setting with a relatively low litigation risk, this is, however, unlikely.

client portfolio for each individual audit partner in our sample, based on the sum of audit fees charged by the audit partner in a given year[3]. As a dependent variable (*LNAUDCHOICE*), we use the natural logarithm of total audit fees charged by the partner due to its distributional properties (to meet the assumptions of OLS).

Financial reporting quality: Our third proxy for audit quality is the client's financial reporting quality. Financial reporting quality is linked to audit quality because higher quality audits constrain earnings management more (Caramanis & Lennox, 2008; DeFond & Zhang, 2014). Following prior non-US studies (Carey & Simnett, 2006; Francis, Richard, & Vanstraelen, 2009; Francis & Wang, 2008; Ittonen, Johnstone, & Myllymäki, 2015; Maijoor & Vanstraelen, 2006; Zerni, Haapamäki, Järvinen, & Niemi, 2012), we use the working capital abnormal accruals model (DeFond & Park, 2001) instead of the Jones (1991) model. The DeFond and Park (2001) model is more applicable to settings with small samples as it does not require abnormal accruals estimated by industry years, which the Jones (1991) model does.

DeFond and Park (2001) model abnormal working capital accruals as follows:

$$ABWCA_{it} = WCA_{it} - [(\frac{WCA_{it-1}}{Sales_{it-1}}) \times Sales_{it}] \quad (2)$$

where *ABWCA* is the abnormal part of working capital accruals (WCA), which is defined as the difference between actual *WCA* and expected *WCA*. We calculate *WCA* as current assets (minus cash and cash equivalents) minus current liabilities (minus short term debt). We scale *ABWCA* with one-year lagged total assets. The absolute values of abnormal working capital accruals

[3] The perceived quality of the auditor, that is, their reputation, is likely to increase with the size of audited assets, not with the number of clients. This is because larger and more prestigious clients are more important for the perceived quality of the auditor, and therefore the sum of audited assets that weights the number of clients with their importance (size) to the auditor is likely a more accurate measure of auditor quality than the mere number of clients.

|*ABWCA*| are used to capture both income-increasing and income-decreasing *ABWCA*. The larger the |*ABWCA*|, the lower the actual audit quality is.

3.3. Reputation capital proxies

We use three separate variables as a '*Reputation Capital'* variable in equation (1), as explained below.

Multiple directorships: Prior research argues that the number of directorships held by a director translates into their reputation as a vigilant monitor (Bugeja, Rosa & Lee, 2009). As such, directors with multiple directorships are regarded as more competent and are therefore viewed more favorably in directorship markets (Shivdasani, 1993). They are seen to meet their responsibilities more effectively, resulting in a reduction of agency costs to their respective firms (Jiraporn, Kim, & Davidson, 2008). Furthermore, directors gain contacts, visibility, and prestige when they have multiple directorships (Kaplan & Reishus, 1990). Carcello et al. (2002) find that expertise of the board, measured as the average number of outside directorships held in other firms by non-affiliated directors is positively related to audit fees. Building on these studies, we use the number of directorships that a director has to measure their reputation capital. We construct two different measures of multiple directorships. The first measure is based on the number of *outside* board seats held by the board of directors of the firm. To illustrate this, if the firm has five board members, of which two members have one outside board seat each and one member has three outside board seats, the total number of outside board seats is five. We use the natural logarithm of the total number of outside board seats as our test variable (*LNMULTIPLE*). As the number of outside board seats is likely correlated with the size of the board, we create another measure that should not be affected by board size to supplement *LNMULTIPLE*. The second measure of reputation capital of the board of directors is the average number of outside board seats per board of directors

(*AVGMULTIPLE*). We expect both measures of multiple directorships to be positively associated with audit fee and auditor choice, and negatively associated with the absolute value of abnormal working capital accruals, indicating higher financial reporting quality.

Board compensation: Directors may not be concerned about their number of positions *per se*, but ultimately about the financial benefits they receive from their positions. These financial benefits may arise from their salary compensation, equity holdings, and restricted stock and stock option awards (Yermack, 2004). We argue that directors are ultimately incentivized by the future expected cash-flows from the directorships they hold. As the future expected cash-flows are unobservable, we use realized, that is, reported compensation for a given year. More specifically, we construct our compensation-based measure of reputation capital as the natural logarithm of total board compensation reported in the financial statements in year *t* plus the compensation earned by each director from their *other* directorships in other companies (*LNBCOMP*). All board-related compensation, including options and salaries, is included in our measure of combined total compensation. However, we exclude compensation from tasks other than governance, such as consultancy work, from the directors' compensation.[4] We expect a positive association between board compensation and audit fee and auditor choice, and a negative association with the absolute value of abnormal working capital accruals.

3.4. Control variables

We use a large set of variables to control for client firm characteristics that may have an effect on our proxies for the demand for audit quality. For consistency, we include the same set of controls in all our analyses (audit fee, auditor choice, and abnormal working capital accruals). All

[4] In footnotes to the financial statements, the reported amounts for 'salary for other assignment' are excluded, as they are not directly related to the salary for board membership.

the variables are defined in Table 1. Following prior research, we control for the client's size, complexity, inherent risks, and financial performance (Hay, Knechel, & Wong, 2006). We expect audit fee (*LNAUDFEE*) to be positively associated with the client's size (the natural logarithm of total assets, *SIZE*), complexity (the square root of the number of subsidiaries, *SQRSUBS*), and high inherent risk assets (the sum of inventories and receivables divided by total assets, *INVREC*), because large, complex, and riskier audits require more audit effort. Regarding inherent risks, we also control for firm solvency using equity divided by total assets (*EQUITY*), and we expect this to be negatively related to audit fee since being more solvent translates into lower audit risk. Further, we control for loss-making by adding to our model a dummy variable (*LOSS*) that gets a value of 1 if a firm's net income is negative, and that is otherwise 0. We expect *LOSS* to be positively associated with audit fee, as loss-making increases audit risk. Growth (measured as the percentage change in sales from the previous year, *GROWTH*) captures another aspect of inherent risk, and we expect this to be positively associated with audit fee as well. Good financial performance, on the other hand, should be reflected in lower risk and hence a lower fee. We control for the client's financial performance using net income divided by total assets (*ROA*), price-to-book ratio (*P/B*), and operating cash-flow divided by total assets (*OCF*). Similarly, we expect that better accrual quality is related to lower risk and hence less audit effort. Following prior studies (Zerni, Haapamäki, Järvinen & Niemi, 2012; Ittonen, Johnstone & Myllymäki, 2015), we use lagged working capital accruals (*LAGWCA*) to control for that.

We also control for important corporate governance characteristics relevant to our study. Following prior studies, we control for the board's independence from the top management, its financial expertise, and whether the company has established an audit committee (Abbott et al., 2003; Carcello et al., 2002; Hay, 2013). Regarding the board's independence from the

management, we control for this by adding a dummy that takes the value of 1 when the CEO of the firm is also a member of the board (*DUAL*)[5]. From an agency theory perspective, having the CEO as a member of the board may reduce the board's monitoring effectiveness (Finkelstein & D'Aveni, 1994). However, Finkelstein and D'Aveni (1994) note that this duality may also strengthen leadership, leading to better performance. Therefore, due to these two contradictory arguments (Krause, Semadeni & Cannella, 2014) and the mixed results found in prior research (Hay, 2013), we do not predict a sign for *DUAL*. To control for the financial expertise of board members, we augment our model with a dummy that indicates when a board member has prior experience either as a chief financial officer or as an authorized public accountant (*ACCEXP*). We expect a positive association with audit fee because board members who are financial experts should be better at working with the auditor in improving audit quality, requiring additional effort from the auditor. For the existence of an audit committee, we add an indicator variable to the models. As explained in more detail in subsection 4.1, the board of directors may set up an audit committee to assist it in monitoring the company's financial statement reporting process and related issues, including auditing. We do not predict a sign for audit committee existence (*ACEXIST*) due to mixed results (Abbott et al., 2003; Hay et al., 2008).

We also control for the age of board members and the ownership structure of the company. To control for the age of the directors, we use the average of age of the board members (*BOARD AGE*). Previous research shows that younger and newer board members are more likely to demand more audit effort (Lai, Srinidhi, Gul & Tsui, 2017). Therefore, we expect a negative relation between *BOARD AGE* and audit fee. Ownership structure might also have an effect on the demand for audit quality. We control for ownership effects in two ways. First, in Finland, companies are

[5] It should be noted that, unlike in prior studies that have examined the dual role of the CEO as the chairman of the board, in Finland, the CEO cannot be the chairman of the board, only a member of the board.

allowed to issue more than one series of share. We control for this with a dummy variable taking a value of 1 if a firm has only one series of shares, and 0 otherwise (*SERIES*). Due to lack of research, we do not predict the sign of *SERIES.* Second, shareholders with large amounts of their wealth invested in a company have heightened incentives to monitor the management. Consistent with this, O'Sullivan (2000) found a positive association between ownership concentration and audit fee, suggesting that major shareholders prefer more extensive auditing. We define *OWNERSHIP* as the percentage of shares held by the three largest shareholders, and we predict a positive association between *OWNERSHIP* and audit fee. Finally, we control for the fixed effects of year, industry, and audit firm.

Regarding our second dependent variable, auditor choice (*LNAUDCHOICE*), we expect it to be positively associated with client size (*SIZE*), number of subsidiaries (*SQRSUB*), high risk assets (*INVREC*), and growth (*GROWTH*), as large and complex firms, as well as growing ones, are more likely to choose a high-quality auditor (Knechel, Niemi, & Sundgren, 2008). For client performance, we expect a positive association between auditor choice and *ROA, P/B,* and *OCF*, but a negative association between auditor choice and loss-making (*LOSS*), as better performing firms might hire a better auditor. Prior literature suggests that firms with weaker internal corporate governance tend to hire a low-quality auditor, and vice versa (Lin & Liu 2009). Consequently, we expect *DUAL* and *OWNERSHIP* to be negatively associated with auditor choice, and audit committee existence (*ACEXIST*), and board accounting expertise (*ACCEXP*) to be positively associated with auditor choice. Due to lack of research, we do not predict the sign of *SERIES.* We expect a negative association between director age (*BOARD AGE*) and auditor choice (*LNAUDCHOICE*), as younger directors are more likely to demand high-quality auditing (Lai et al., 2017). Similarly, we expect a negative association between lagged working capital accruals

(*LAGWCA*) and auditor choice (*LNAUDCHOICE*), as a better-quality auditor restrains earnings management.

Regarding our third dependent variable, accruals quality (|*ABWCA*|), we expect it to be negatively associated with client size (*SIZE*), because large companies tend to have more stable operations (DeFond & Zhang, 2014; Ittonen et al., 2015; Zerni et al., 2012). We expect a positive association between |*ABWCA*| and the number of subsidiaries (*SQRSUBS*) and risky assets (*INVREC*), because complex and risky firms have more incentive to manipulate earnings. We do not predict a sign for *EQUITY* due to mixed results (Francis & Wang, 2008; Zerni et al., 2012). We expect a positive sign for *LOSS*, *GROWTH*, and *P/B*, but a negative sign for *ROA* and *OCF*, as less profitable and growing firms have more incentive to manage their earnings than more profitable, well-established companies. Our variable of lagged working capital accruals (*LAGWCA*) controls for a reversal of accruals, and hence we expect it to be negatively associated with |*ABWCA*| (Zerni et al., 2012). For *DUAL*, *SERIES*, and *OWNERSHIP*, we do not predict a sign. Regarding the characteristics of the board, we expect the financial expertise of board (*ACCEXP*) and the existence of an audit committee (*ACEXIST*) to be negatively associated with |*ABWCA*|, as better monitoring mechanisms should lead to less earnings management. Finally, we expect director age (*BOARD AGE*) to be positively associated with |*ABWCA*| (Huang, Rose-Green, & Lee, 2012).

INSERT TABLE 1 HERE

4. Institutional setting and data

4.1. Corporate governance and auditing in Finland

In Finland, as in the other Nordic countries, the institutional setting is characterized as follows: (1) the legal system is based on code law, (2) litigation risk is relatively low, and (3) ownership is concentrated (Lekvall et al., 2014; Thomsen, 2016). Regulation of corporate governance consists of legally binding rules and recommendations on good corporate governance in Finland. The legal rules are mainly stipulated in the Company Law and the Securities Market Act, supplemented by the Helsinki Stock Exchange rules and the rules issued by the Financial Supervisory Authority. Recommendations are mainly provided by the Corporate Governance Code (Finnish Corporate Governance Code, 2015[6]). Regarding financial reporting and auditing, the rules on the former are specified in the Accounting Act and the Company Law, whereas the principles of auditing are specified in the Auditing Act. The directives of the European Union on auditing are also implemented through the Auditing Act.[7] In Finland, audits shall be conducted in accordance with International Standards on Auditing (ISAs).

According to the Company Law, the board of directors is in charge of the corporate governance of the company: it has legal liability for the operations of the company, including control of the firm's accounts and finances, as well as oversight of the firm's administration of operations, as directed by the managing director. The board of directors also approves the strategic objectives and the principles of risk management for the firm. The composition of the board of directors should reflect the firm's requirements, as set by its operations and business model, being adequately diverse and independent of the management [8].

According to the Company Law, the shareholders nominate the board of directors at the annual general meeting. Similarly, the number of directors and their compensation are decided by the

[6] https://cgfinland.fi/wp-content/uploads/sites/39/2018/04/hallinnointikoodi-2015eng.pdf
[7] Finland has been a member of the EU since 1995.
[8] Recommendation number 10 in the corporate governance code 2015. http://cgfinland.fi/en/recommendations/the-finnish-corporate-governance-code/

shareholders at the annual general meeting. Usually the compensation is decided before the election of the directors (Lekvall et al., 2014). Compared to other European countries, the level of director compensation in the Nordic countries is relatively modest (Lekvall et al., 2014). The compensation of directors is salary-based, and often directors have an option to purchase shares in the company. An important rule regarding the independence of the board is that the chief executive officer (CEO) cannot serve as the chairman of the board, except for rare circumstances related to the specific nature of the business or the ownership structure of the company.[9] This is because the board hires and fires the CEO.

The board may decide to form an audit committee to help the board in monitoring the company's financial statement reporting, internal control and risk management, and the audit of financial statements, including the assessment of the independence of the auditor. The board selects the members of the audit committee from among themselves. However, if the board decides to form an audit committee, it has to ensure that the members of the audit committee have sufficient expertise and experience for the responsibilities of the audit committee, and that the majority of them must be independent of the company (Finnish Corporate Governance Code, 2015[10]). It is noteworthy that even if the board decides to form an audit committee, the whole board still remains legally liable for all the monitoring responsibilities of the board.

4.2. Data and descriptive statistics

Data sources. Our data consists of firms listed on Nasdaq OMX Helsinki, Finland. Our initial panel of companies from 2007 to 2016 yields 1,249 firm-year observations. We exclude firms that

[9] Recommendation number 20 in the corporate governance code 2015. http://cgfinland.fi/en/recommendations/the-finnish-corporate-governance-code/

[10] Recommendation number 16 in the corporate governance code 2015. http://cgfinland.fi/en/recommendations/the-finnish-corporate-governance-code/

do not have the calendar year as their fiscal year. We require this to ensure that all companies are subject to similar market conditions. In addition, financial firms (SIC codes 60-67), due to their different accounting practices, and firms reporting in a currency other than euros (e.g. Swedish crown) are excluded (173 firm-year observations).[11] We also exclude firms with missing data (136 firm-year observations), yielding 940 firm-year observations (120 unique firms) as our final sample. For our final sample of 940 firm-years, we hand-collected information on audit fees, auditor names, and companies' boards of directors from various publicly available sources, primarily from annual reports and firms' web pages.

Table 2 Panel A presents the industry breakdown of the final sample firms in accordance with the Standard Industrial Classifications (SIC) codes, of which business services (17.66%), industrial machinery and equipment (9.57%), electronic and electric equipment (9.47%), paper and allied products (6.70%), and printing and publishing (6.06%) are the most prevalent industries in the sample. Table 2 Panel B reports the summary of the final sample by year, indicating an increase in the number of firm-year observations across the years, from 78 observations in 2007 to 100 in 2016. Table 2 Panel C reports our sample by audit firm. As Panel C shows, the upper end of the Finnish audit market is highly concentrated: a great majority of the listed firms are audited by Big 4 accounting firms, with PWC being dominant (36.8%), followed by KPMG (30.6%). Only 2.6% of the firm-years in our sample are audited by accounting firms other than the Big 4.

INSERT TABLE 2 HERE

Descriptive statistics. Table 3 presents the descriptive statistics of all the variables used in our regression models. The mean (median) of our first dependent variable, audit fee (*AUDFEE*), is 744,000 (185,000) euros, with 33.1 million euros being the maximum fee. As the distribution of

[11] Financial firms are included in the calculations of multiple directorships.

AUDFEE is highly skewed to the right, we follow prior studies and use the natural logarithm of audit fee (*LNAUDFEE*) in our analyses. The mean (median) of the natural logarithm of audit fee (*LNAUDFEE*) is 12.32 (12.12). Our second dependent variable, auditor choice (*LNAUDCHOICE*), measured as the log of audit fees charged by the audit partner in a given year, has a mean (median) value of 13.45 (13.46). Mean (median) total audit fees charged by the audit partner in a given year (*PARFEES*) are 2,237 (698) thousand euros. *PARFEES* is skewed to the right, but after taking its natural logarithm, the distribution is much less skewed. Our third dependent variable, the absolute value of abnormal working capital accruals (|*ABWCA*|), has a mean (median) value of 0.052 (0.031).

Turning to our three test variables, Table 3 shows a relatively large variation in their values. First, the median value of multiple directorships (*MULTIPLE*) is two, meaning that a median company's board has two outside directorships. The minimum value of *MULTIPLE* is zero, meaning that none of the directors have a directorship on another board. Out of our sample of 940 firm-year observations, 205 firm-years are such cases where none of the directors of the firm have a seat on another board. The maximum value of *MULTIPLE* (940 sample size) is nine. The mean (median) of the natural logarithm of multiple directorships (*LNMULTIPLE*), the test variable used in our analyses, is 1.066 (1.098). Our second test variable, average multiple directorships (*AVGMULTIPLE*), has a mean (median) of 0.403 (0.333). The third test variable, the combined compensation of board members (*BCOMP*), including compensation earned from other directorships, is 414,300 euros on average, with the median compensation being 324,500 euros. The maximum compensation is 1,872,000 euros. The mean (median) value of the natural logarithm of compensation (*LNBCOMP*), the test variable used in our analyses, is 12.609 (12.690).

Regarding our control variables, the mean (median) value of the client's size, measured as total assets (*ASSETS*) is 1,722 (182) million euros, indicating that the distribution of the variable is highly skewed to right. After taking a natural logarithm of the variable *SIZE*, the mean (19.393) and median (19.017) are much closer to each other, indicating that the distribution is clearly less skewed to right. The mean (median) value of the square root of subsidiaries (*SQRSUBS*) is 5.054 (4.123). This means that an average firm has about 26 subsidiaries. The mean (median) of risky assets, which is the sum of inventories and receivables divided by total assets (*INVREC*), is 0.330 (0.318). On average, companies have relatively good solvency, as shown by the mean and median values of equity ratio (*EQUITY*) (0.444 and 0.440, respectively). However, as shown by the mean value of *LOSS*, the companies made losses in 28% of the firm-years. Regarding other variables related to inherent risks, the mean (median) of growth (*GROWTH*) is 4.0% (2.1%). The mean (median) of the firm's return on assets (*ROA*) is 0.019 (0.037), and the mean (median) of (*P/B*) is 2.183 (1.655). The mean (median) operating cash flow to total assets (*OCF*) is 0.074 (0.074), and the mean (median) of working capital accruals in previous years (*LAGWCA*) is 0.097 (0.087). Regarding corporate governance variables, the mean value of duality (*DUAL*) shows that in 15% of the firm-years, the CEO was a member of the board. This ratio is somewhat higher than we expected, given the recommendation of the Corporate Governance Code that the chief executive officer (CEO) should not serve as the chairman of the board. However, it should be noted that this is not against the recommendation, as the Code is silent about the CEO being a *member* of the board. The mean value of *ACCEXP* is 0.485, which shows that almost half of the firms have an accounting expert as a member of the board. In more than half of the firm-years (56.8%), companies have an audit committee (*ACEXIST*). The existence of audit committees has increased over the years (untabulated). The mean (median) value of *BOARD AGE* is 54.61 (54.66).

Considering that *BOARD AGE* is calculated as the mean of the age of members of the board, the large range is quite surprising: the minimum value of average board age is only 41 years, while the maximum average age is as high as 70 years old. Not surprisingly, a great majority of companies have only one series of shares, as shown by the mean value (0.768) of the *SERIES* dummy. As described in section 4.1, ownership in Finland is relatively concentrated, as shown by the mean (0.357) and median (0.336) values of *OWNERSHIP* (the percentage of shares held by the three largest shareholders).

INSERT TABLE 3 HERE

Table 4 presents Pearson (Spearman) correlations below (above) the diagonal for the selected variables. As Table 4 shows, our test variables *LNMULTIPLE, AVGMULTIPLE,* and *LNBCOMP* correlate positively with our dependent variables audit fee (*LNAUDFEE*) and auditor choice (*LNAUDCHOICE*), and negatively with the absolute value of abnormal working capital accruals |*ABWCA*|, providing initial support for our hypothesis that the reputation capital of directorships is positively associated with the demand for audit quality.

Bold italicized values show significance at a 1 percent level, and italicized only values are significant at a 5 percent level. The majority of the correlations are significant. As can be seen in Table 4, the Pearson correlation between our test variable *LNBCOMP* and our independent variable *SIZE* is quite high (0.785). This is not, however, surprising, as larger companies, in general, pay their directors higher salaries than smaller firms. To assess if multicollinearity is a problem, we calculate variance inflator factors (VIFs) for all the variables used in our regression models (not tabulated). All the VIFs are below the critical value of 10 except for our control variable *SIZE*, which has a VIF value of 10.19 in the models in which we use board compensation (*LNBCOMP*) as our test variable. To further analyze whether multicollinearity affects our results,

we replace our continuous variable *SIZE* with a set of dummies for the deciles of client size. Using this alternative approach to control for client size, VIFs are below the critical value of 10 (the highest being 9.52 in decile 10 and 7.85 in decile 9). More importantly, using this alternative way to control for client size does not change our regression results regarding our test variables, except in the accrual model (Model 3), where board compensation (*LNBCOMP*) lacks statistical significance (p=0.111). Based on these results (untabulated), we conclude that multicollinearity should not be a serious problem in our study.

INSERT TABLE 4 HERE

5. Results

5.1. Reputation capital of directorships and audit fees

Table 5 presents the results from our audit fee analyses for the three *Reputation capital* (test) variables: *LNMULTIPLE*, the natural logarithm of multiple directorships (Model 1); *AVGMULTIPLE*, the average number of multiple directorships (Model 2); and *LNBCOMP*, the combined compensation of the board members (Model 3). All the significance levels for regression coefficients are reported as two-tailed p-values, regardless of whether a variable has an expected sign or not. As described above, our models have a large set of control variables, including controls for year, industry (2-digit SIC code), and audit firm fixed effects. It can be seen in Table 5 that the explanatory power is quite high (adjusted R^2 for all three models is about 86%), and is comparable with prior studies, providing confidence that omitted correlated variables should not be a serious problem in our fee models. All the variables are defined in Table 1.

The results from Model 1 show a positive and significant coefficient for *LNMULTIPLE*, the natural logarithm of multiple directorships, (β=0.051; p=0.049), supporting our hypothesis that the reputation capital of directorships is positively associated with the demand for audit quality. More

specifically, a one percent increase in *LNMULTIPLE* increases the audit fee by 0.051%. The results from Model 2 are similar to those from Model 1. The estimated coefficient for the average of multiple directorships (*AVGMULTIPLE*) is positive and highly significant (β= 0.119; p=0.011). Finally, Model 3 shows that the coefficient for combined board compensation (*LNBCOMP*) is positive and highly significant (β=0.142; p=0.000). This means that a one percent increase in *LNBCOMP* increases the audit fee by 0.142%. Overall, the results from our three models provide consistent evidence supporting our hypothesis that reputation capital of directorships increases the demand for audit quality.

Regarding the control variables, Table 5 shows that the signs of the coefficients across the models are consistent. More specifically, as expected, the coefficients for the client's size (*SIZE*), complexity (*SQRSUBS*), inherent risk (*INVREC*), and series of share (*SERIES*) are positive, and those of *ROA*, *P/B*, *EQUITY*, *DUAL*, and *LAGWCA* are negative in all the model specifications. Of these control variables, the results regarding *DUAL* are the most interesting. Consistent with the agency argument that when the board is less independent in terms of the dual role of the CEO as a member of the board, audit fees are lower. Contrary to our expectations, we find that *LOSS* and *GROWTH* are negatively and *BOARD AGE* is positively associated with audit fees. In our fee model, *LOSS* and *GROWTH* are assumed to capture the riskiness of the client, and are therefore expected to be positively associated with audit fees. However, loss-making and growth also reduce cash flows, increasing the pressures to reduce costs, including audit fees. In our low litigation risk setting, it may be that the latter effect dominates. For *BOARD AGE*, it seems, contrary to Lai et al. (2017), that more experienced boards, not younger ones, demand more auditing. Finally, it is noteworthy that the corporate governance variables most closely related to auditing—the existence

of an audit committee (*ACEXIST*) and the financial expertise of the board (*ACCEXP*)—lack statistical significance.

INSERT TABLE 5 HERE

5.2. Reputation capital of directorships and auditor choice

Table 6 presents the results from our auditor choice analyses, in which the dependent variable is *LNAUDCHOICE*, which is the natural logarithm of the audit fees charged by the audit partner in year *t*, and the three test variables are *LNMULTIPLE*, the natural logarithm of multiple directorships (Model 1); *AVGMULTIPLE,* the average of multiple directorships (Model 2); and *LNBCOMP*, the combined compensation of the board members (Model 3). As in the audit fee analyses, we control for a large set of client characteristics and year, industry, and audit firm fixed effects. Table 1 defines all the variables used in these models.

As can be seen in Table 6, the coefficients of all three test variables (*LNMULTIPLE*, β=0.304; p=0.000), (*AVGMULTIPLE,* β=0.566; p=0.000), and (*LNBCOMP,* β=0.297; p=0.000) are positive, providing consistent evidence for our hypothesis that the reputation capital of directorships is positively associated with the demand for audit quality. More specifically, a one percent increase in *LNMULTIPLE* (*LNBCOMP*) increases the audit partner's client portfolio (measured as audit fees charged) by 0.304% (0.297%). Regarding control variables, we find significant positive associations between the client's size (*SIZE*) and complexity (*SQRSUBS*), suggesting that larger firms tend to choose audit partners who are market leaders. It is also noteworthy that investment in corporate governance, in terms of having an audit committee *(ACEXIST),* is positively associated with choosing a market-leader audit partner in all the models. As expected, CEO duality (*DUAL*), (*LAGWCA*), and (*OWNERSHIP*) are negatively associated with auditor choice. Contrary to our expectations, we find that firm profitability (*ROA*) and market

value (*P/B*) are negatively associated with *LNAUDCHOICE*, and board age (*BOARD AGE*) is positively associated with *LNAUDCHOICE*. As with audit fees (Table 5), it seems, contrary to Lai et al. (2017), that more experienced boards are more concerned than younger ones with audit quality. Regarding *ROA* and *P/B*, we have no explanation for the negative signs of their coefficients.

INSERT TABLE 6 HERE

5.3. Reputation capital of directorships and financial reporting quality

Table 7 shows the results from our accruals quality analyses for our three test variables: *LNMULTIPLE*, the natural logarithm of multiple directorships (Model 1); *AVGMULTIPLE*, the average of multiple directorships (Model 2); and *LNBCOMP*, the combined compensation of the members of the board (Model 3). As described in Section 3, we employ the DeFond & Park (2001) model of the absolute value of abnormal working capital accruals (|*ABWCA*|) as a dependent variable in our accruals quality analyses.

Consistent with our hypothesis that the reputation capital of directorships is positively associated with the demand for audit quality, the estimated coefficients for *LNMULTIPLE* (β=-0.006; p=0.079) and *AVGMULTIPLE* (β=-0.012; p=0.071) are negative and statistically significant at a 10% level. For *LNBCOMP*, the coefficient is not statistically significant even at a 10% level (β=-0.007; p=0.115). As a negative sign means that the absolute values of abnormal working capital accruals (|*ABWCA*|) decrease when *LNMULTIPLE* and *AVGMULTIPLE* increase, these results provide weak evidence (p<0.10) that multiple directorships are associated with higher accruals quality.

In general, the signs of the control variables are consistent across the three models. For example, the coefficients for *EQUITY* and *OCF* are significantly negative in all the model

specifications, whereas the coefficients for *GROWTH, LAGWCA* and *OWNERSHIP* are positive and significant. However, the positive sign of *LAGWCA* is contrary to our expectations.

Table 7 shows the results for the whole sample, using both income-increasing and income-decreasing abnormal accruals. In addition, we analyze subsamples of income-increasing and income-decreasing absolute abnormal accruals separately (not tabulated). The results from the subsample of income-increasing abnormal working capital accruals (i.e. *ABWCA* >0) show no significant association between our multiple directorships measures (*LNMULTIPLE* and *AVGMULTIPLE*) and income-increasing abnormal accruals. However, for *LNBCOMP*, the combined compensation of the members of the board, a negative (β=-0.015) and statistically significant (p=0.025) coefficient, indicates that lower income-increasing abnormal accruals are associated with higher board compensation. For income-decreasing abnormal accruals (i.e. *ABWCA*<0), all three test variables lack statistical significance in our two-tail *t*-tests. Combined, however, our results provide some, albeit weak and limited evidence that higher reputation capital of directorships restricts income-increasing earnings management, but not income-decreasing earning management. As the level of statistical significance of our results is weak and some findings are limited to only some proxies for reputation capital, caution is warranted in interpretation of the results.

INSERT TABLE 7 HERE

5.4. Additional tests

We conduct several additional tests to gain further understanding of the nature of the relationship between the directors' reputation capital and demand for audit quality, and to check the sensitivity of our main results to different model specifications. First, we examine whether the effect of directors' reputation on the demand for auditing is conditional on having an audit

committee. As described in section 4.1 on the Finnish setting, the board of directors may decide to form an audit committee consisting of board members to help the board in its monitoring responsibilities, including those related to the audit of financial statements. However, even if the company has an audit committee, the whole board still remains legally liable for its responsibilities. Nevertheless, it may be that the effect of directors' reputation might interact with the effect of having an audit committee. To analyze this, we augment our models by an interaction variable in which we interact board compensation (*LNBCOMP*) with the existence of an audit committee (*ACEXIST*). We follow Afshartous and Preston (2011) and mean center the continuous variable board compensation (*LNBCOMP*) to facilitate the interpretation of the results.

INSERT TABLE 8 HERE

Table 8 reports the results for our three proxies for demand for audit quality in Models 1–3. For audit fees (Model 1), we find that the coefficients of both board compensation (*LNBCOMP*) and the interaction of board compensation with the existence of an audit committee (*LNBCOMP x ACEXIST*) have positive signs. This indicates that board compensation has an effect on audit fees in general, but the effect is stronger for those boards that have decided to form an audit committee. Regarding the selection of auditors (*LNAUDCHOICE*), the results from Model 2 show that the existence of an audit committee (*ACEXIST*) has a positive coefficient, consistent with main results reported in Table 6. Interestingly, the interaction variable (*LNBCOMP x ACEXIST*) also has a positive coefficient, while the coefficient of board compensation (*LNBCOMP*) is no longer significant. This means that board compensation is positively associated with choosing an auditor with a larger client portfolio, but only in companies with an audit committee. Regarding abnormal working capital accruals (Model 3), the results for our variables of interest remain insignificant.

For our other two proxies for reputation capital, we find no clear differences between companies with and without an audit committee.

Next, we further examine the relationship between our measure of auditor choice (*LNAUDCHOICE*) and the proxies for reputation capital using two approaches: quantile regression analysis and ordered logistic regression. This is warranted as we know little about the shape of this relationship because of a lack of previous research. Quantile regression analysis provides us with estimates of the conditional median and other quantiles of auditor choice, instead of the conditional mean estimated using OLS. In other words, this analysis shows if and how the coefficients of our reputation capital proxies differ for different levels of the dependent variable (*LNAUDCHOICE*). Our results (untabulated) show that the coefficients of the proxies for reputation capital are somewhat lower for higher levels of the dependent variable. However, when compared to conditional means from OLS estimates, the coefficients are not significantly different[12].

In our alternative approach, we use ordered logistic regression to see if our results hold if we remove the effect of weighting auditor size with the sum of the audit fees they earned from their client portfolio. In our ordered logistic regression, we give each audit partner a score on a scale of 1 to 5, based on the 20th percentile of the fees they earned from their client portfolio for year *t*. Again, the results (untabulated) for *LNMULTIPLE, AVGMULTIPLE* and *LNBCOMP* remain, as the coefficients are positive and statistically significant (β=0.518, p=0.000; β=1.030, p=0.000; β=0.480, p=0.008, respectively). All in all, as our additional analyses yield similar results on auditor choice, we conclude that the findings from our auditor choice analyses are not sensitive to any specific definition of auditor choice.

[12] However, the coefficient for board compensation (*LNBCOMP*) at the 75th percentile is no longer significant (untabulated).

Third, we examine the nature of the relationship between the number of directorships and demand for audit quality. We focus on the linearity of the relationship, as having too many directorships might affect the director's capacity. Optimally, we would test this by replacing the continuous variable (*LNMULTIPLE*) with a set of dummies for different levels of multiple directorships (*MULTIPLE*). However, as there are only 12 observations in the highest level of multiple directorships (9) and 19 observations in the second highest category (8), the power of the test would suffer from the very low number of multiple directorships in the highest categories of *MULTIPLE*. Therefore, instead of this approach, we study the potential adverse effect of having a high number of directorships in two other ways. First, using univariate analyses, we find that our dependent variables (*LNAUDFEE* and *LNAUDCHOICE*) increase monotonically with *MULTIPLE*. Second, we estimate the models using quantile regression analysis. The comparison of the results from quantile regression analysis and OLS show no statistically significant differences. These additional tests (untabulated) show no evidence of an adverse effect of 'busyness' on demand for audit quality.

Finally, we examine two different model specifications related to our control variables. First, as described earlier, to address the potential for multicollinearity arising from a high correlation between client size (*SIZE*) and our compensation measure (*LNBCOMP*), we replaced our continuous size variable with a set of size dummies that are less correlated with the compensation measure. Second, we removed lagged abnormal working capital accruals (*LAGWCA*) from the model. For both these two alternative model specifications, our results regarding the variables of main interest remain the same. Thus, we conclude that the relationship between reputation capital and the demand for audit quality is consistent in our sample, and that the findings are neither

sensitive to the distributional properties of our dependent variables nor to the high number of directorships.

6. Conclusion

Over the years, a good reputation has become increasingly important not only for corporations but also for those in charge of their governance—the board of directors. In general, a good reputation helps a firm to perform better, simultaneously benefitting the directors that are associated with the firm (Roberts & Dowling, 2002; Schwaiger, Raithel, & Schloderer, 2009; Filbeck & Preece, 2003). Similarly, negative consequences from a damaged reputation are not limited to the firm itself, but also affect their directors (Fich & Shivdasani, 2007). This creates an incentive for the directors to protect their firm's reputation, as in doing so, they also protect their own reputation capital.

A great body of research provides us with consistent evidence suggesting that the demand for audit quality increases with agency problems between the firm and the outside providers of funds (Fama, 1980). However, we have little research on the reputation concerns of directors as a driver of that demand. In this paper, we investigate the relationship between audit quality and the reputation capital of the board of directors. In doing so, we add to the literature on 'internal' demand for audit quality (Carcello et al., 2002; Abbott et al., 2003; Hay et al., 2008; Knechel & Willekens, 2006), linking it to the directors' incentive to protect their own reputation capital. We also add to the literature on company and top management reputation (Cao et al., 2012; Cianci & Kaplan, 2010; Francis et al., 2008; Milbourn, 2003) and on the role of auditing as a part of the corporate governance 'mosaic' in general (Cohen et al., 2004; Hay, 2013).

Building on related studies on corporate governance and demand for auditing (Hay et al., 2008; Knechel & Willekens, 2006), we hypothesize and find evidence that the demand for audit quality increases with the directors' reputation capital. More specifically, we find, after controlling for other relevant factors, that companies that have directors with multiple directorships pay higher fees to their auditors and choose better-known auditors, measured as the size of the auditor's client portfolios (DeAngelo, 1981). Using directors' compensation as a measure of their reputation capital yields similar findings. Regarding financial reporting quality, our analyses of abnormal accruals provide some, albeit weak support for our hypothesis.

Our results have some practical implications. Most importantly, the concern of many investors that multiple directorships impair a director's ability to effectively monitor the management (Ferris, Jagannathan, & Pritchard, 2003) is not supported by our findings. To the contrary, our findings suggest that directors serving on multiple boards ask for more monitoring from external auditors, ultimately benefitting investors and others providing finance to the company. Therefore, our results do *not* support a proposition by some critics (e.g. the Council of Institutional Investors, 1998) that, to ensure directors' ability to do their duties, the number of directorships that a person can hold should be limited.

The results in this study are subject to some limitations common to other archival studies in the area. First, we only test for association, not causality. Second, some of our variables may be determined endogenously. Finally, it is possible that our proxies for reputation capital, or those for demand for audit quality, capture something other than the concepts they are intended to capture. To mitigate the potential problems arising from these limitations, we employ multiple test variables and dependent variables, capturing different aspects of our concepts of main interest. In addition, we have conducted additional tests using alternative variable definitions and model

specifications. While this increases the credibility of our evidence, we cannot completely rule out alternative explanations, due to the inherent limitations of the study. These limitations provide opportunities for future research.

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Table 1. Variable definitions.

Variable	Definition
Proxies for demand for audit quality	
LNAUDFEE	The natural logarithm of the audit fee *(in €000s)* paid to the audit firm.
LNAUDCHOICE	The choice of audit partner based on the size of their client portfolio, measured as the natural logarithm of the sum of total audit fees *(in €000s)* audited by the audit partner in a given year. The calculation is based on audit fees paid by all Finnish companies that have total assets in excess of 5 million euros.
|ABWCA|	The absolute value of abnormal working capital accruals (WCA) calculated as actual WCA minus expected WCA, based on the model by DeFond and Park (2001).
Reputation capital proxies	
LNMULTIPLE	The natural logarithm of one plus total number of directorships held in all the listed companies by the board of directors.
AVGMULTIPLE	The average number of directorships calculated as the total number of directorships held in all listed companies by the board of directors divided by board size.
LNBCOMP	The natural logarithm of the sum of board compensation *(in €000s)* and the compensation earned from board seats held in other listed companies.
Control variables	
SIZE	The natural logarithm of total assets *(in €M)*.
SQRSUBS	The square root of the number of subsidiaries.
INVREC	The sum of inventories and receivables divided by total assets.
EQUITY	Equity divided by total assets.
LOSS	Dummy variable taking one if net income is negative, zero otherwise.
GROWTH	The percentage change in sales from the previous year.
ROA	Return on assets.
P/B	Price-to-book ratio.
OCF	Operating cash flow divided by total assets.
LAGWCA	Lagged working capital accruals divided by lagged total assets.
DUAL	Dummy variable taking one if a firm's CEO is a member of the board, zero otherwise.
ACCEXP	Dummy variable taking one if the board member of a firm has working experience either as a chief financial officer or as an authorized public accountant (CPA).
ACEXIST	Dummy variable taking one if the firm has an audit committee, zero otherwise.
BOARD AGE	The average age of the board of directors in the firm.
SERIES	Dummy variable taking one if a firm has only one series of shares, zero otherwise.
OWNERSHIP	Percentage of shares held by the largest three shareholders.
YEAR	Year fixed effects (2007-2016).
INDUSTRY	Two-digit SIC industry classification.
AUDITFIRM	Audit firm fixed effects (EY, KPMG, PWC, Deloitte and non-Big Four).

Table 2. Summary of the sample.
Panel A: By industry

Two-digit SIC code	Industry description	Frequency	%
07	Agricultural services	10	1.06
10	Metal, mining	14	1.49
12	Coal mining	03	0.32
15	General building contractors	27	2.87
16	Heavy construction	10	1.06
20	Food & kindred products	20	2.13
23	Apparel & other textile products	12	1.28
25	Furniture & fixtures	08	0.85
26	Paper & allied products	63	6.70
27	Printing & publishing	57	6.06
28	Chemical & allied products	28	2.98
30	Rubber & miscellaneous plastics products	20	2.13
33	Primary metal industries	37	3.94
34	Fabricated metal products	45	4.79
35	Industrial machinery & equipment	90	9.57
36	Electronic & electric equipment	89	9.47
38	Instruments & related products	30	3.19
39	Miscellaneous manufacturing industries	10	1.06
40	Railroad transportation	09	0.96
44	Water transportation	06	0.64
45	Transportation by air	10	1.06
48	Communications	10	1.06
49	Electric, gas, & sanitary services	10	1.06
50	Wholesale trade – durable goods	10	1.06
51	Wholesale trade – nondurable goods	45	4.79
53	General merchandise stores	11	1.17
54	Food stores	10	1.06

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58	Eating & drinking places	06	0.64
73	Business services	166	17.66
80	Health services	09	0.96
87	Engineering & management services	55	5.85
89	Services, not elsewhere classified	10	1.06
Total		940	100

Panel B: By year

Year	Frequency	%
2007	78	8.3
2008	86	9.1
2009	87	9.3
2010	96	10.2
2011	93	9.9
2012	97	10.3
2013	100	10.6
2014	100	10.6
2015	103	11.0
2016	100	10.6
Total	940	100

Panel C: By audit firm

Audit firm	Frequency	%
KPMG	288	30.6
PWC	346	36.8
EY	243	25.9
Deloitte	39	4.1
Non-Big4	24	2.6
Total	940	100

Note: Our initial sample consists of 1,249 firm-year observations from 2007 to 2016. We exclude financial firms and Swedish firms listed on the Helsinki Stock Exchange, yielding a sample of 1072 firm-year observations. We also exclude firm-years with missing observations, resulting in a final sample of 940 firm-year observations. Data on the number of subsidiaries variable for the years 2007 and 2008 is missing for many companies. As the number of subsidiaries is relatively stable over the sample years, we have used the mean substitution method to fill the missing values to avoid further reducing the sample size. We use the next available year value for five missing observations on the board age variable. For Nokia, the number of subsidiaries was not available for our research period, except for year 2015. Therefore, we used the number of subsidiaries in 2015 for other years for Nokia.

Table 3. Descriptive statistics

Variable	Mean	Std.	Min	25%	Median	75%	Max
LNAUDFEE	12.32	1.362	9.852	11.25	12.12	13.35	15.65
AUDFEE (in €000s)	743.84	2291.6	14.00	77.00	185.0	627.5	33,100
LNAUDCHOICE	13.45	1.622	10.13	12.24	13.46	14.65	16.89
PARFEES (in €000s)	2236.59	4110.54	24.97	206.50	698.32	2304.00	33,800
|ABWCA|	0.052	0.066	0.000	0.012	0.031	0.063	0.377
LNMULTIPLE	1.066	0.693	0.000	0.693	1.098	1.609	2.302
AVGMULTIPLE	0.403	0.343	0.000	0.142	0.333	0.625	1.800
MULTIPLE	2.611	2.240	0.000	1.000	2.000	4.000	9.000
LNBCOMP	12.609	0.852	10.102	12.070	12.690	13.206	14.443
BCOMP (in €000s)	414.3	348.6	24.60	174.60	324.5	543.55	1872.0
SIZE (lnASSETS)	19.393	1.975	15.615	17.818	19.017	20.993	23.859
ASSETS(in €M)	1722	4600	3.73	54.72	181.54	1309.0	44,901
SQRSUBS	5.054	2.981	1.414	3.000	4.123	6.403	14.866
INVREC	0.330	0.169	0.008	0.205	0.318	0.447	0.889
EQUITY	0.444	0.172	-0.100	0.351	0.440	0.540	0.855
LOSS	0.280	0.449	0	0	0	1	1
GROWTH	0.040	0.247	-0.609	-0.061	0.021	0.123	1.197
ROA	0.019	0.111	-0.509	-0.012	0.037	0.075	0.275
P/B	2.183	1.791	0.000	1.020	1.655	2.783	9.53
OCF	0.074	0.097	-0.298	0.026	0.074	0.132	0.303
LAGWCA	0.097	0.165	-0.289	-0.002	0.087	0.189	0.629
DUAL	0.150	0.357	0	0	0	0	1
ACCEXP	0.485	0.500	0	0	0	1	1
ACEXIST	0.568	0.496	0	0	1	1	1
BOARD AGE	54.61	4.311	41	51.83	54.66	57.42	70
SERIES	0.768	0.422	0	1	1	1	1
OWNERSHIP	0.357	0.183	0.013	0.211	0.336	0.478	0.841

Notes: The sample includes 940 firm-year observations from 2007 to 2016 for all variables except auditor choice. To construct the auditor choice variable, we use all Finnish companies, both publicly listed and privately held, that have total assets excess of 5 million euros (5,396 firm-year observations). We winsorize all continuous variables at the 1% and 99% levels. All the variables are defined in Table 1.

Table 4. Correlations of selected variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1.LNAUDFEE		***0.665***	***-0.203***	***0.458***	***0.348***	***0.789***	***0.884***	***0.196***	***0.532***	***0.370***	***-0.210***
2.LNAUDCHOICE	***0.689***		***-0.162***	***0.414***	***0.342***	***0.595***	***0.588***	***0.146***	***0.486***	***0.263***	***-0.218***
3.|ABWCA|	***-0.191***	***-0.161***		***-0.125***	***-0.092***	***-0.212***	***-0.249***	-0.012	***-0.130***	***-0.132***	***0.134***
4.LNMULTIPLE	***0.450***	***0.432***	***-0.167***		***0.971***	***0.672***	***0.469***	***0.195***	***0.346***	***0.108***	***-0.131***
5.AVGMULTIPLE	***0.291***	***0.323***	***-0.123***	***0.913***		***0.556***	***0.344***	***0.175***	***0.257***	0.038	***-0.108***
6.LNBCOMP	***0.763***	***0.600***	***-0.220***	***0.666***	***0.505***		***0.812***	***0.257***	***0.597***	***0.283***	***-0.197***
7.SIZE	***0.894***	***0.607***	***-0.225***	***0.461***	***0.268***	***0.785***		***0.223***	***0.561***	***0.377***	***-0.232***
8.ACCEXP	***0.204***	***0.154***	0.010	***0.200***	***0.162***	***0.243***	***0.214***		***0.238***	***0.077***	***-0.100***
9.ACEXIST	***0.534***	***0.485***	***-0.143***	***0.359***	***0.221***	***0.580***	***0.563***	***0.232***		***0.198***	***-0.122***
10. BOARD AGE	***0.358***	***0.246***	*-0.065*	***0.101***	0.016	***0.246***	***0.359***	0.053	***0.180***		***-0.111***
11.OWNERSHIP	***-0.263***	***-0.262***	***0.136***	***-0.170***	***-0.121***	***-0.280***	***-0.253***	*-0.089*	***-0.137***	***-0.135***	

Notes: Pearson (Spearman) correlations are below (above) the diagonal. Correlations significant at the 0.05 level are in *italics*. Correlations significant at the 0.01 level are in ***bold and italics***. We only report the correlations of main interest due to space limitations. All the variables are defined in Table 1.

Table 5: Regression results of reputation capital of directorships and audit fee

Variable	Exp sign	Model 1 LNAUDFEE Coeff. *(t-value)*	Model 2 LNAUDFEE Coeff. *(t-value)*	Model 3 LNAUDFEE Coeff. *(t-value)*
LNMULTIPLE	+	0.051** (1.97)		
AVGMULTIPLE	+		0.119*** (2.54)	
LNBCOMP	+			0.142*** (4.40)
SIZE	+	0.470*** (23.56)	0.473*** (24.10)	0.433*** (19.73)
SQRSUBS	+	0.141*** (12.77)	0.140*** (12.71)	0.136*** (12.49)
INVREC	+	0.564*** (3.49)	0.560*** (3.46)	0.540*** (3.37)
EQUITY	-	-0.274*** (-2.47)	-0.276** (-2.49)	-0.253** (-2.31)
LOSS	+	-0.085* (-1.78)	-0.082* (-1.72)	-0.092* (-1.94)
GROWTH	+	-0.207*** (-3.20)	-0.203*** (-3.14)	-0.173*** (-2.67)
ROA	-	-0.638*** (-2.69)	-0.642*** (-2.70)	-0.629*** (-2.67)
P/B	-	-0.036*** (-3.58)	-0.035*** (-3.56)	-0.038*** (-3.82)
OCF	-	-0.128 (-0.60)	-0.125 (-0.59)	-0.120 (-0.57)
LAGWCA	-	-0.318** (-2.24)	-0.319** (-2.21)	-0.276* (-1.92)
DUAL	+/-	-0.115*** (-2.53)	-0.111** (-2.45)	-0.010** (-2.28)
ACCEXP	+	-0.019 (-0.58)	-0.020 (-0.63)	-0.018 (-0.57)
ACEXIST	+/-	-0.003 (-0.07)	-0.000 (-0.01)	-0.018 (-0.41)
BOARD AGE	-	0.008** (2.03)	0.008** (2.08)	0.008** (2.15)
SERIES	+/-	0.254*** (5.60)	0.251*** (5.58)	0.262*** (5.90)
OWNERSHIP	+	-0.054 (-0.56)	-0.054 (-0.56)	-0.017 (-0.17)

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Constant	1.867***	1.797***	0.851*
	(4.51)	(4.38)	(1.87)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Audit firm fixed effects	Yes	Yes	Yes
Adj. R-square	0.864	0.865	0.866
N	940	940	940

Notes: The sample includes 940 firm-year observations from 2007 to 2016. We exclude financial firms and Swedish firms listed on the Helsinki Stock Exchange. We winsorize all continuous variables at the 1% and 99% levels. *t*-statistics are in parentheses. The following symbols indicate significant results: *=<0.10; **=<0.05; ***=<0.001, with probability levels two-tailed. For brevity, results for fixed effects are not reported. All the variables are defined in Table 1.

Table 6: Regression results of reputation capital of directorships and auditor choice

Variable	Exp sign	Model 1 LNAUDCHOICE Coeff. *(t-value)*	Model 2 LNAUDCHOICE Coeff. *(t-value)*	Model 3 LNAUDCHOICE Coeff. *(t-value)*
LNMULTIPLE	+	0.304*** (4.46)		
AVGMULTIPLE	+		0.566*** (4.59)	
LNBCOMP	+			0.297*** (3.44)
SIZE	+	0.181*** (3.45)	0.205*** (3.96)	0.132** (2.25)
SQRSUBS	+	0.162*** (5.60)	0.159*** (5.49)	0.156*** (5.34)
INVREC	+	0.700 (1.64)	0.704 (1.65)	0.756* (1.77)
EQUITY	+	-0.067 (-0.23)	-0.039 (-0.13)	0.092 (0.31)
LOSS	-	0.081 (0.65)	0.091 (0.72)	0.051 (0.40)
GROWTH	+	-0.003 (-0.02)	0.008 (0.05)	0.044 (0.25)
ROA	+	-1.320** (-2.11)	-1.341** (-2.14)	-1.329** (2.11)
P/B	+	-0.057** (-2.21)	-0.056** (-2.14)	-0.060** (-2.27)
OCF	+	0.455 (0.81)	0.447 (0.80)	0.399 (0.71)
LAGWCA	-	-0.713* (-1.87)	-0.744* (-1.95)	-0.712* (-1.85)
DUAL	-	-0.353*** (-2.96)	-0.339*** (-2.84)	-0.340*** (-2.83)
ACCEXP	+	-0.066 (-0.78)	-0.067 (-0.79)	-0.040 (-0.47)
ACEXIST	+	0.278** (2.36)	0.296*** (2.54)	0.265** (2.25)
BOARD AGE	-	0.037*** (3.50)	0.037*** (3.57)	0.037*** (3.52)
SERIES	+/-	0.346*** (2.90)	0.352*** (2.96)	0.412*** (3.47)
OWNERSHIP	-	-0.597** (-2.32)	-0.607** (-2.36)	-0.558** (-2.15)

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Constant	5.670***	5.217***	3.145***
	(5.20)	(4.83)	(2.58)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Audit firm fixed effects	Yes	Yes	Yes
Adj. R-square	0.430	0.431	0.425
N	940	940	940

Notes: The sample includes 940 firm-year observations from 2007 to 2016. We exclude financial firms and Swedish firms listed on the Helsinki Stock Exchange. We winsorize all continuous variables at the 1% and 99% levels. t-statistics are in parentheses. The following symbols indicate significant results: *=<0.10; **=<0.05; ***=<0.001, with probability levels two-tailed. For brevity, results for fixed effects are not reported. All the variables are defined in Table 1. To construct the auditor choice variable, we use both publicly listed and privately held Finnish firms that have total assets excess of 5 million euros. The auditor choice variable sample consists of 5396 firm-year observations.

Table 7: Regression results of reputation capital of directorships and abnormal working capital accruals

Variable	Exp sign	Model 1 |ABWCA| Coeff. *(t-value)*	Model 2 |ABWCA| Coeff. *(t-value)*	Model 3 |ABWCA| Coeff. *(t-value)*
LNMULTIPLE	-	-0.006* (-1.76)		
AVGMULTIPLE	-		-0.012* (-1.81)	
LNBCOMP	-			-0.007 (-1.58)
SIZE	-	-0.004 (-1.49)	-0.005* (-1.70)	-0.003 (-0.91)
SQRSUBS	+	-0.001 (-0.43)	-0.001 (-0.39)	-0.001 (-0.33)
INVREC	+	-0.032 (-1.42)	-0.032 (-1.42)	-0.033 (-1.45)
EQUITY	+/-	-0.066*** (-4.18)	-0.066*** (-4.23)	-0.069*** (-4.42)
LOSS	+	-0.009 (-1.31)	-0.009 (-1.34)	-0.008 (-1.22)
GROWTH	+	0.059*** (6.43)	0.058*** (6.40)	0.057*** (6.23)
ROA	-	-0.021 (-0.62)	-0.020 (-0.61)	-0.021 (-0.62)
P/B	+	0.002 (1.20)	0.002 (1.18)	0.002 (1.25)
OCF	-	-0.104*** (-3.45)	-0.104*** (-3.45)	-0.103*** (-3.42)
LAGWCA	-	0.036* (1.77)	0.037* (1.80)	0.036* (1.74)
DUAL	+/-	-0.010 (-1.51)	-0.010 (-1.55)	-0.010 (-1.57)
ACCEXP	-	0.007 (1.49)	0.007 (1.50)	0.006 (1.39)
ACEXIST	-	-0.009 (-1.51)	-0.010 (-1.57)	-0.009 (-1.44)
BOARD AGE	+	-0.000 (-0.21)	-0.000 (-0.24)	-0.000 (-0.23)
SERIES	+/-	-0.008 (-1.29)	-0.008 (-1.31)	-0.010 (-1.52)
OWNERSHIP	+/-	0.033** (2.36)	0.033** (2.38)	0.031** (2.27)

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Constant	0.146***	0.156***	0.201***
	(2.50)	(2.69)	(3.17)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Audit firm fixed effects	Yes	Yes	Yes
Adj. R-square	0.170	0.170	0.169
N	940	940	940

Notes: The sample includes 940 firm-year observations from 2007 to 2016. We exclude financial firms and Swedish firms listed on the Helsinki Stock Exchange. We winsorize all continuous variables at the 1% and 99% levels. *t*-statistics are in parentheses. The following symbols indicate significant results: *=<0.10; **=<0.05; ***=<0.001, with probability levels two-tailed. For brevity, results for fixed effects are not reported. All the variables are defined in Table 1.

Table 8: Regression results of the reputation capital of audit committees and board compensation

Variable	Model 1 LNAUDFEE Coeff. *(t-value)*	Model 2 LNAUDCHOICE Coeff. *(t-value)*	Model 3 |ABWCA| Coeff. *(t-value)*
LNBCOMP	0.097***	0.110	-0.010*
	(2.56)	(1.08)	(-1.81)
ACEXIST	-0.002	0.333***	-0.008
	(-0.04)	(2.81)	(-1.27)
LNBCOMP x ACEXIST	0.111**	0.469***	0.006
	(2.19)	(3.46)	(0.89)
SIZE	0.430***	0.120**	-0.003
	(19.61)	(2.06)	(-0.97)
SQRSUBS	0.131***	0.130***	-0.001
	(11.58)	(4.34)	(-0.54)
INVREC	0.523***	0.706	-0.034
	(3.30)	(1.66)	(-1.48)
EQUITY	-0.242**	0.137	-0.068***
	(-2.22)	(0.47)	(-4.38)
LOSS	-0.095**	0.035	-0.008
	(-2.02)	(0.28)	(-1.25)
GROWTH	-0.160**	0.099	0.058***
	(-2.46)	(0.58)	(6.29)
ROA	-0.637***	-1.360**	-0.021
	(-2.71)	(-2.18)	(-0.63)
P/B	-0.040***	-0.072***	0.002
	(-4.08)	(-2.71)	(1.12)
OCF	-0.105	0.462	-0.102***
	(-0.50)	(0.83)	(-3.39)
LAGWCA	-0.280*	-0.728*	0.035*
	(-1.95)	(-1.91)	(1.73)
DUAL	-0.122**	-0.421***	-0.011*
	(-2.66)	(-3.46)	(-1.71)
ACCEXP	-0.016	-0.033	0.006
	(-0.52)	(-0.39)	(1.41)
BOARD AGE	0.008**	0.036***	-0.000
	(2.07)	(3.40)	(-0.26)
SERIES	0.259***	0.399***	-0.010
	(5.84)	(3.38)	(-1.55)
OWNERSHIP	-0.024	-0.587**	0.031**
	(-0.25)	(-2.27)	(2.23)

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Constant	2.738***	7.277***	11.943*
	(6.02)	(6.02)	(1.84)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Audit firm fixed effects	Yes	Yes	Yes
Adj. R-square	0.867	0.433	0.170
N	940	940	940

Notes: The sample includes 940 firm-year observations from 2007 to 2016. We exclude financial firms and Swedish firms listed on the Helsinki Stock Exchange. We follow Afshartous and Preston (2011) and mean center the continuous variable board compensation (LNBCOMP). We winsorize all continuous variables at the 1% and 99% levels. *t*-statistics are in parentheses. The following symbols indicate significant results: *=<0.10; **=<0.05; ***=<0.001, with probability levels two-tailed. For brevity, results for fixed effects are not reported. All the variables are defined in Table 1.