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Audit fees-audit quality relationship: Does employee board representation matter?

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Abstract

We examine the effect of employee board representation on audit fees and whether the interplay between audit fees and employee board representation has an impact on audit quality, as measured by discretionary accruals. Using a sample of 3,142 firm-year observations across seven European countries over the period of 2005-2019, we show that employee board representation is negatively associated with audit fees, and this association is primarily observed when the number of employee directors reaches two or more. In addition, we test the possible channels through which employee board representation affects audit fees and show that the effect is stronger in firms with weak corporate governance. We also document that audit committee effectiveness moderates the relationship. Finally, we show that the observed lower audit fees lead to an improvement in audit quality, probably due to a stronger control environment and reduced audit risk in the presence of employee directors. Our main results are unchanged when using alternative measures, additional controls, subsample analysis, alternative econometric techniques, and identification strategies.

Keywords: Employee directors; Audit fees; Audit quality

1. Introduction

Prior research has shown that employee board representation is related to positive financial outcomes, such as lower agency costs (Fauver & Fuerst, 2006), greater firm valuation and profitability (Gorton & Schmid, 2004; Ginglinger, Megginson, & Waxin, 2011), lower cost of debt, longer debt maturity, and fewer covenants (Lin, Schmid, & Xuan, 2018). Nevertheless, employee board representation studies around audit outcomes, particularly for audit fees, remain limited. Only a few studies have focused on the effect of employee board representation on audit quality, as reflected in discretionary accruals and real earnings management (Gleason, Kieback, & Thomsen, 2021; Overland & Samani, 2021). This paper aims to expand this stream of research by examining the impact employee board representation has on audit fees. This makes our analysis particularly valuable because audit fees have been identified as having divergent effects on a firm's earnings manipulation behaviour (Frankel, Johnson, & Nelson, 2002; Asthana & Boone, 2012; Choi, Kim, & Zang, 2010). Therefore, our paper can also provide fresh perspectives on the role of audit fees in earnings management when employee directors are present.

In addition, we build on existing research that has largely focused on the mere presence of employee directors on the board without considering the differential effects of the number of these directors on financial outcomes. This is significant because different European countries require different numbers of employee directors to be on the board (Conchon, 2011; Thomsen, Rose, & Kronbong, 2016).[1] Thus, the unique employee board representation regulations across European countries provide an exclusive setting to test the validity of the critical mass theory, which suggests that one employee director is a token, two employee directors are a presence, and three or more employee directors become a voice

[1] For instance, while German firms can elect for up to half of the supervisory board seats to consist of employees, Swedish firms can elect two-three employee directors, conditional on the firm size. Firms in countries such as Austria, Denmark and Norway can also elect one-third of the board seats or half of those elected by shareholders.

(Kristie, 2011). Consequently, we carry out an empirical analysis of cross-European countries' data to examine whether employee board representation is helpful in improving audit outcomes. We, therefore, investigate two unaddressed research questions. Does employee board representation affect audit fees? Does the interplay between audit fees and employee board representation have an impact on audit quality?

We argue, first, that according to resource dependence theory, employee board representation serves as a beneficial resource as they can use their firm-specific knowledge and insights to support the board decision-making process (Pfeffer & Salancik, 1978; Hillman & Dalziel, 2003). Their experience, spillover knowledge and insights to and from the board may contribute to the decisions aimed at strengthening the internal control systems and reducing agency problems (Lin et al., 2018).[2] By promoting stronger internal control systems, improving monitoring, and supporting risk-reducing policies (Overland & Samani, 2021), employee directors are likely to reduce the perceived risk of material misstatement and, consequently, lower audit fees. Second, since the employee directors are directly involved in day-to-day operations where risks or inefficiencies in the internal controls can be identified and addressed early, extensive external auditing may not be necessary as management are likely to avoid scrutiny from their peers by engaging in transparent financial reporting practices. If employee board representation "provides a powerful means of monitoring and reduces agency costs" (Fauver & Fuerst, 2006, p. 673), then one would expect lower audit fees (i.e., external monitoring costs) due to enhanced transparency and reduced information asymmetry. Therefore, we anticipate employee board representation to contribute to a stronger control environment and lower audit risk, which in turn reduces audit fees.

[2] Prior literature concurs that employee representation on the board reduces agency cost (Lin et al., 2018), enhances co-operation leading to better strategic decisions (Freeman & Lazear, 1995; Roberts & Steen, 2001), ensures fair distribution of resources (Furubotn, 1988), and improves firms competitive position (Allen, Carletti, & Marquez, 2007; Claessens & Ueda, 2008).

Using a large sample of 3,142 firm-year observations over the period of 2005-2019 from seven European countries, we find a significantly negative association between employee board representation and audit fees, and this association is primarily observed when the number of employee directors reaches two or more. These results are consistent with the critical mass theory, in that employee directors do not only utilise their firm-specific knowledge and insights to strengthen the internal control systems and lower audit fees, but also their effect increases with their number on the board. In an additional set of analyses, we document that the relationship between employee board representation and audit fees is more pronounced in firms with weak corporate governance, and audit committee effectiveness moderates the relationship. Our results are robust to alternative measures, additional controls, subsample analysis, alternative econometric specifications, and identification strategies, including propensity score matching, changes regression model, and the difference-in-differences approach.

Next, we are also particularly interested in the implications of employee board representation for the relationship between audit fees and audit quality, proxied by discretionary accruals. Despite a substantial body of literature, how audit fees affect discretionary accruals remains unsettled. Some researchers find a positive effect (Alali, 2011; Asthana & Boone, 2012), whereas others point out a negative effect (Frankel et al., 2002; Mitra, Deis, & Hossain, 2009; Eshleman & Guo, 2014) or no significant effect (Choi et al., 2010). These divergent views on the impact of audit fees on discretionary accruals warrant further insights into the underlying mechanism through which audit fees affect discretionary accruals. We have argued that the magnitude of audit fees in the presence of employee directors may signal a stronger control environment and reduced audit risk, which in turn leads to improved audit quality. In this novel analysis, we show that the observed lower audit

fees in the presence of employee directors lead to an improvement in audit quality, as measured by discretionary accruals.

This paper makes four distinct and novel contributions to the existing literature. To the best of our knowledge, this is the first research to investigate the association between employee board representation and audit fees. While only a few accounting studies have analysed the effect of employee board representation on earnings management (e.g., Gleason et al., 2021; Overland & Samani, 2021), we complement and extend these studies to audit fees. This is an important and early contribution to the accounting literature on how employee directors promote a stronger control environment for the reduction in audit risk and, consequently, audit fees. Second, we complement and enlarge prior research on the determinants of audit fees. Unlike past studies (Lai, Srinidhi, Gul, & Tsui, 2017; Nekhili, Gull, Chtioui, & Radhouane, 2020) that focused on the impact of gender-diverse boards on audit fees, we provide new empirical evidence of the impact of employee-diverse boards on audit fees. We thus add to the existing body of literature by showing a new determinant of audit fees. Our results have significant implications for policymakers. More precisely, regulators in countries yet to implement employee board representation policy should be encouraged by our results for their firms to consider having employee directors.

Third, even though employee board representation is legally mandated conditional on meeting certain thresholds, such as board size, firm size and the number of employees across the countries studied, we uniquely provide the first direct empirical test of the main prediction of critical mass theory by showing that the effect of employee board representation increases with their number on the board. This novel finding offers policy implications for regulators, corporate boards, and firms by providing evidence that employee directors can be effective monitors to improve audit outcomes, especially when they reach critical mass. Therefore, we conclude that, as a matter of policy, employee board representation has a

positive impact on audit-related outcomes, and the impact improves when the number of employees directors increases.

Finally, we complement and expand audit fees and audit quality studies (Frankel et al., 2002; Mitra et al., 2009; Choi et al., 2010; Asthana & Boone, 2012; Eshleman & Guo, 2014) by focusing on how the interplay between audit fees and employee board representation affects audit quality. This is important because it provides a deeper understanding of the mechanics through which the relationship between audit fees and audit quality is affected. To our knowledge, this is the first study to examine the role of employee directors in the relationship between audit fees and audit quality. Our results show that even though there are divergent effects of audit fees on discretionary accruals, the presence of employee directors negatively moderates the relationship between audit fees and discretionary accruals. The implication of this new evidence is that employee directors should not be ignored when analysing the interaction between audit fees and audit quality.

The remainder of the paper is structured as follows. The next section starts by reviewing the literature on audit fees and the effect of employee board representation to motivate our hypotheses. In section 3, we discuss the research design. Section 4 presents the empirical results, robustness, and identification analysis, while section 5 concludes the study.

2. Literature review and hypotheses development

In this section, we review the literature on audit fees and the effect of employee board representation on firm-level outcomes. We develop our hypotheses based on a synthesis of this literature.

In general, audit fees signify the cost of the auditor to provide audit services. This cost is subject to significant variation with the level of risk, complexity, size, internal control, and other firm-level characteristics of the audited firm (Cohen, Krishnamoorthy, & Wright, 2002;

Simunic & Stein, 1996). Auditors seek to reduce audit costs by balancing their resources and future legal liability. Additional audit effort from auditors minimizes the probability of liability losses from lawsuits (Carcello, Hollingsworth, Klein, & Neal, 2002). However, such an audit effort increases audit fees as auditors pass on additional costs to the client.

Extant literature (e.g., Hay, Knechel, & Wong, 2006; Nekhili et al., 2020) on audit fees reveals two perspectives, i.e., the demand-side and the supply-side. Audit fees are affected by both perspectives. According to the demand-side perspective, effective management is more likely to demand higher audit efforts from auditors, which may result in higher audit fees (Nekhili et al., 2020). Alternatively, the supply-side perspective suggests that auditor supply audit services while balancing their legal liability risk. Auditors consider the internal control systems that are likely to influence their assessment of the perceived risk of material misstatement. In case of less risk, the auditor needs to exert less effort and time to perform the audit, which negatively influences the audit fees (Hay et al., 2006; Yatim, Kent, & Clarkson, 2006). Past studies generally conclude that a stronger control environment leads to a reduction in audit risk and, consequently, lower audit fees (Simunic, 1980; Hay, Knechel, & Ling, 2008). This implies that audit fees are shaped and influenced by the effectiveness of internal controls.

2.1 Employee board representation

The theoretical literature on employee representation can be classified into two strands with divergent views. On the one hand, employee representation is detrimental to firms due to the sharing of control rights with employees rather than a single residual claimant (Alchian & Demsetz, 1972). Proponents of this view also argue that employee-managed firms are considered less competitive due to competing issues of adverse incentives and contracting when employees are serving managers as well (Jensen & Meckling, 1979).

This is particularly the case if employees get board seats through employment rights rather than based on investment, as workers will have reasons to lobby the board for higher pay and other rents at the expense of shareholders. Such a situation will complicate the board's decision-making, creating deadlock, obscuring a clear strategic vision, and reducing pledgeable income; ultimately making the development of a stakeholder society a more distant possibility (Ginglinger et al., 2011). Moreover, organisations lose competitive advantage if employee representation is mandated by law, as this signals that such representation is not for improving firm performance but to comply. Jensen and Meckling (1979) argue that employee-managed firms become less competitive due to a lack of equity capital owing to profit sharing with employees and control problems where firms may face difficulty in controlling managers who control employees. Different countries (e.g., Australia and the US) have conducted voluntary experiments with employee representation plans (see Patmore, 2007; Taras & Kaufmann, 2006). However, the importance of codetermination has received minimal attention since 1930.

In contrast, the literature presents beneficial outcomes of employee representation. According to resource dependence theory, employee representatives serve as useful resources for the board due to their firm-specific knowledge that may help strengthen the internal control systems. Employee representatives also provide insights to the board regarding tightening loopholes and thus strengthening board monitoring mechanisms. Recent literature presents a strong case for employee board representation that strengthens corporate governance, as employee, a key stakeholder, has a direct influence in corporate decision making. For instance, Allen et al. (2007) document that firms that are more employee-oriented (stakeholder-oriented) will prosper in competition compared to shareholder-oriented firms.

Claessens and Ueda (2008) also tend to concur with the positive impact of employee

board representation. Advocates of this view argue that the human capital potential of employees has been largely ignored when determining the influence of employee board representation. For instance, Aoki (1980), based on a game theoretical model, argues that employee representation on the board, where such employees have firm-specific skills, makes it a socially optimal outcome. Similarly, Furubotn (1988) concurs that mandatory employee board representation is more efficient in reducing transaction costs and distributing resources compared to a voluntary solution. Furthermore, employee representation serves as an information channel enhancing co-operation between the board and employees (Freeman & Lazear, 1995) that enables employees to influence strategic decisions (Roberts & Steen, 2001). Lastly, employee board representation is associated with firm policies and decisions that reduce the likelihood of default, as they will lose employment in such circumstances (Berk, Stanton, & Zechner, 2010).

Recently, research exploring the role of employee representation on the board as a governance mechanism has examined various outcomes. For example, employee representation on the board influences firm leverage (Lin et al., 2018), payout and performance (Gorton & Schmid, 2004; Ginglinger et al., 2011), and earnings management (Gleason et al., 2021; Overland & Samani, 2021). However, how employee representation on the board affects audit fees and whether the interplay between audit fees and employee board representation affects audit quality have been largely ignored in the existing literature.

2.2 Hypothesis development

Employee board representation has attracted a significant attention in relation to its impact on financial outcomes. While there are considerable studies on employee board representation and audit outcomes, the effect of employee board representation on audit fees is still limited. Past studies (Gleason et al., 2021; Overland & Samani, 2021) have shown that

employee board representation affects audit quality, as reflected in discretionary accruals and real activities earnings management. However, the precise effect of employee board representation on audit fees is yet to be determined.

We argue that employee board representation can possibly reduce audit fees by improving monitoring effectiveness. It can contribute to a stronger control environment, potentially reducing audit risk and, in turn, audit fees (Simunic, 1980; Hay et al., 2008). By providing a powerful means of monitoring (Fauver & Fuerst, 2006), employee directors are more likely to enhance transparency and reduce information asymmetry, leading to more efficient audits and potentially lower audit fees. In addition, boards with employee representation might be perceived as more stakeholder-aligned and ethical, increasing auditor confidence in financial disclosures. This could be a signal of stronger governance, and their presence could arguably facilitate improved audit preparedness, more efficient access to information, with a corresponding reduction in audit effort.

In other words, employee directors provide a powerful means of monitoring and thus are expected to reduce audit fees because they may contribute to a stronger control environment, which lowers audit risk and audit effort. We, therefore, expect firms with employee board representation to pay lower audit fees due to improved internal controls. Accordingly, we develop our first hypothesis as follows:

H1: Employee board representation is negatively associated with audit fees.

Whilst the above discussion indicates that employee board representation may have an influence on audit fees, we acknowledge that one employee director may not be sufficient to influence the decision-making around audit fees. In this context, Kanter (1977) contends that a minority group in management is considered as "token" (e.g., one employee

representative) and receives less attention (Sherrick, Hoewe, & Waddell, 2014). Hence, the token status reinforces that one employee representative is less likely to be heard on an equal footing on the board (Powell & Butterfield, 2002) and, as such, may have a limited impact on board decision-making when it comes to internal controls.

Given the risk of tokenism, employee board representation requires a critical mass on the board to influence decision-making around internal controls. Critical mass theory suggests that there is a threshold required to overcome the constraints of token status. Extant studies support the notion that the real influence on decision-making can be observed when there is a majority of such representatives on the board (Joecks, Pull, & Vetter, 2013; Jia & Zhang, 2013). Hence, critical mass theory predicts that employee board representation may become influential in internal controls alongside audit fees after reaching a certain threshold. Therefore, we posit our second hypothesis as follows:

H2: The effect of employee directors on audit fees increases with their number.

In our final hypothesis, we focus on whether the interplay between audit fees and employee board representation can have an impact on audit quality, as measured by discretionary accruals. Prior research has provided divergent views on the effect of audit fees particularly abnormal audit fees on discretionary accruals. Some point out that higher audit fees have a positive effect (Alali, 2011; Asthana & Boone, 2012), whereas others find a negative effect (Frankel et al., 2002; Mitra et al., 2009; Eshleman & Guo, 2014) or no significant effect when the abnormal audit fees are negative (Choi et al., 2010). However, we are especially interested in identifying the underlying mechanism behind these relationships. Arguably, the magnitude of audit fees in the presence of employee directors may signal monitoring effectiveness, potentially leading to improved audit quality. When the aim of audit effort, as reflected in audit fees, is to preserve audit quality, such quality is expected to

be higher in firms with employee board representation, potentially due to a stronger control environment and reduced audit risk.

As hypothesised earlier, our anticipation is that employee board representation is negatively associated with audit fees. If indeed the lower audit fees paid by audit clients to external auditors in the presence of employee board representation are due to a stronger control environment and reduced audit risk, then we would expect audit quality to improve. Thus, our third hypothesis is stated as follows:

H3: Employee board representation negatively moderates the relationship between audit fees and audit quality.

3. Research design

3.1 Sample selection and data sources

Our initial sample for this study is based on all Austrian, Danish, French, German, Hungarian, Norwegian, and Swedish firms listed on the STOXX Europe All Share Index over a fifteen-year period between 2005-2019. The chosen countries and the period for our study are influenced by the availability of data with respect to employee board representation. Unlike other countries, Austria, Denmark, France, Germany, Hungary, Norway, and Sweden have laws and regulations that allow employee representation on the board with data available over the corresponding period. We source our data from two databases: the Bloomberg database for the number of employees on the board as well as corporate governance and ownership data, and the Thomson Reuters Worldscope Refinitiv database for the corresponding financial data. We merge the data from Bloomberg and Thompson Reuters Worldscope Refinitiv databases, yielding a total of 8,565 firm-year observations. We deleted 1,575 firm-year observations that operate in the financial services industry owing to the peculiarities of the regulatory environment in which they operate. We also deleted 3,848 firm-year observations with incomplete data with respect to employees on the board,

corporate governance, ownership and financial data. To alleviate the concerns of outliers, we winsorise all continuous variables at the 1% and 99% levels, with the final sample consisting of 3,142 firm-year observations. Table 1 contains the sample selection procedure.

Table 2 shows the sample breakdown by country, which suggests that Sweden has the most observations (901), with Hungary having the least observations (176). France is the highest-ranked country based on average audit fees paid by audit clients ($28,564), with the audit clients in Germany paying the lowest average audit fees ($10,112.31). For the number of employee representatives on the board, Austria (4.938) and Germany (4.041) are the two top countries allocating more seats for these directors on average. On the other hand, Sweden (1.657) and France (0.224) are the two countries with the lowest number of board seats for employee representatives and pay the highest audit fees. This would suggest that audit clients in countries with the highest average number of employee representatives pay lower audit fees. However, at this point, we have not yet considered other factors that would otherwise affect audit fees. In subsection 3.4, we discuss these control variables.

[Insert Table 1 here]
[Insert Table 2 here]

3.2 Audit fees and audit quality

We employ audit fees paid by audit clients to external auditors as our dependent variable. In common with previous literature (e.g., Hay et al., 2006; Vermeer, Rama, & Raghunandan, 2008; Hay & Knechel, 2010; Sharma, Tanyi, & Litt, 2017; Owusu, Zalata, Omoteso, & Elamer, 2022), we define audit fees (*AFEE*) as the natural logarithm of the audit fees paid by the audit clients. To measure audit quality, following extant literature (e.g., Mitra et al., 2009; Asthana & Boone, 2012), we utilise the absolute value of discretionary accruals as a proxy for audit quality. We provide the calculation details of audit quality in subsection 3.6.

3.3 Employees on board variables

We follow existing literature (Fauver & Fuerst, 2006; Ginglinger et al., 2011; Lin et al., 2018; Gleason et al., 2021; Overland & Samani, 2021) and define employee representatives on board as an indicator variable set to one if a firm has at least one employee representative (*D_EMPREP*) on the board, and zero otherwise. We also employ the proportion of employee representatives (*P_EMPREP*) on the board defined as the number of employee representatives on board scaled by the number of board members, and the natural logarithm of the number of employee representatives (*L_EMPREP*) on the board as alternative measures to undertake robustness tests.

To test hypothesis 2 regarding the validity of the critical mass theory, we use three indicator variables, *D_EMPREP1*, *D_EMPREP2*, and *D_EMPREP3*, where each is an indicator variable set to one if the firm has one, two, and three or more employee representatives on board, respectively, and zero otherwise.

3.4 Control variables

To isolate the effect of employee representatives on the board on audit fees, we include several board and firm-level variables that have been documented by previous literature (Hay et al., 2006; Vermeer et al., 2008; Hay & Knechel, 2010; Ghafran & O'Sullivan, 2017; Sharma et al., 2017; Alhababsah & Yekini, 2021) to be related to audit fees. Specifically, we control for the number of directors on the board (*BoDSize*), percentage of independent directors on the board (*PctIndDir*), percentage of independent directors on the audit committee (*PctIndAC*), and percentage of female directors on the board (*PctFEMDir*) to capture board-level characteristics. We also include institutional ownership *(INSTOWN*), firm size (*SIZE*), leverage (*LEV*), return on assets (*ROA*), liquidity (*LIQ*), operating cash flow in total assets (*OCF*), inventory in total assets (*INVT*), account receivables in total assets

(*REC*), market capitalization (*MBV*), change in sales (*SALESG*), the natural logarithm of non-audit fees (*NAFEE*), loss (*LOSS*), and firm age (*FIRMAGE*) to capture the firm-level characteristics. Finally, we control for year, industry, and country fixed effects. Appendix 1 contains all the variable definitions.

3.5 Descriptive statistics

We provide our descriptive statistics for the full sample in Table 3. On average, the value of audit fees is $33,193. The average number of employee representatives (*EMPREP*) on the board is around 2, with a minimum of 0 and a maximum of 10 employee directors. This is expected and consistent with the different employee representation regulations in place across the sample European countries. On average, 76.8% of our sample firms have employee representatives (*D_EMPREP*) on board. We also show that, on average, 6.3%, 8.5%, and 61.6% of our sample firms have one employee representative (*D_EMPREP1*), two employee representatives (*D_EMPREP2*), and three or more employee representatives (*D_EMPREP3*) on board, respectively. Other related summary statistics contained in Table 3 are largely consistent with the literature.

In Table 4, we provide the correlation among the control variables. Prior research (Kennedy, 2008; Sharma et al., 2017; Owusu et al., 2022) has documented that a correlation coefficient larger than 0.80 and a variance inflation factor (VIF) greater than 10 may be a sign of the existence of multicollinearity. As Table 4 indicates, the highest correlation coefficient of 0.49 between the percentage of independent directors on the board (*PctIndDir*) and the percentage of independent directors on the audit committee (*PctIndAC*) is less than 0.80. We also calculate the VIFs for all the variables after estimating our primary regression models, and the highest value of 3.61 is substantially lower than the tolerance value of 10. The smaller correlation coefficients and VIFs suggest that multicollinearity is not an issue in

our reported results.

[Insert Table 3 here]
[Insert Table 4 here]

3.6 Empirical models

To test whether employee board representation affects audit fees (H1), and in common with previous audit fee literature (Hay et al., 2006; Vermeer et al., 2008; Hay & Knechel, 2010; Sharma et al., 2017), we use the following ordinary least squares (OLS) regression model as in equation (1):

$$AFEE_{i,t} = \alpha + \beta_1.D\_EMPREP_{i,t} + \beta_2.Z_{i,t} + \beta_3.Year\_FE_t + \beta_4.Industry\_FE_i + \beta_5.Country\_FE_i + \epsilon_{i,t} \quad (1)$$

where *AFEE* is our dependent variable capturing audit fees paid by audit clients to external auditors. Our test variable of interest, *D_EMPREP*, is the employee representatives on the board. *Z* is a vector of control variables capturing the elements of board and firm-level variables as defined in subsection 3.4 and in Appendix 1. *Year_FE*, *Industry_FE*, and *Country_FE* are year, industry, and country fixed effects, respectively.

To test whether the effect of employee board representation on audit fees increases with a higher number of such employees (H2), we expand equation (1) by adding *D_EMPREP1*, *D_EMPREP2*, and *D_EMPREP3* to capture the differential effect of employee representatives on the board and estimating the OLS regression using equation (2):

$$AFEE_{i,t} = \alpha + \beta_1.D\_EMPREP1_{i,t} + \beta_2.D\_EMPREP2_{i,t} + \beta_3.D\_EMPREP3_{i,t} + \beta_4.Z_{i,t} + \beta_5.Year\_FE_t + \beta_6.Industry\_FE_i + \beta_7.Country\_FE_i + \epsilon_{i,t} \quad (2)$$

where all variables except for the test variables of interest, *D_EMPREP1*, *D_EMPREP2*, and *D_EMPREP3*, which are indicator variables for one, two, and three or more employee representatives on board, respectively. These indicator variables are employed to test the validity of the critical mass theory in the context of the differential effect of the number of employee representatives on the board on audit fees.

To test whether firms with employee board representation and lower audit fees have higher audit quality (H3), we follow prior audit fees and audit quality literature (Mitra et al., 2009; Choi et al., 2010; Asthana & Boone, 2012) and utilise the absolute value of discretionary accruals as a proxy for audit quality. In common with Kothari, Leone and Wasley (2005), we utilise the following equation (3) to capture the performance-matched discretionary accruals:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_0 + \delta_1\left(\frac{1}{TA_{it-1}}\right) + \delta_2\left(\frac{\Delta SALES_{it} - \Delta AR_{it}}{TA_{it-1}}\right) + \delta_3\left(\frac{PPE_{it}}{TA_{it-1}}\right) + \delta_4 ROA_{it} + \varepsilon_{it} \quad (3)$$

Where *TACC* is the total accruals defined as net income before extraordinary items less operating cash flow, $\Delta SALES$ is the change in sales in year *t* from year *t-1*, ΔAR is the change in account receivables in year *t* from year *t-1*, *PPE* is the gross property, plant and equipment, *ROA* is the return on assets, *TA* is the total assets in year *t-1*. We estimate equation (3) by year for each two-digit industry SIC code and obtain our absolute value of performance-matched discretionary accruals (*PMDACC*) by deducting the predicted value from *TACC*. To test the association between audit fees (*AFEE*), employee representatives (*D_EMPREP*) on the board, and audit quality, we utilise the following OLS regression as specified in equation (4):

$$PMDACC_{i,t} = \alpha + \beta_1.AFEE_{i,t} + \beta_2.D\_EMPREP_{i,t} + \beta_3.AFEE \times D\_EMPREP_{i,t} + \beta_4.Z_{i,t} + \beta_5.Year\_FE_t + \beta_6.Industry\_FE_i + \beta_7.Country\_FE_i + \epsilon_{i,t} \quad (4)$$

where the dependent variable is *PMDACC*. All other variables are defined under equation (1). The main test variable of interest in equation (4) is the interaction between audit fees and employee board representation ($AFEE \times D\_EMPREP$).

4. Regression results

4.1 Employees on the board and audit fees

Table 5 reports the regression results of our hypotheses 1 and 2. In Model 1, we regress audit fees (*AFEE*) on the main test variable, *D_EMPREP*, without the board and firm-level control variables but with year, industry, and country fixed effects. In Model 2, we include the board and firm-level control variables as well as year, industry, and country fixed effects. We find the estimated coefficient on *D_EMPREP* in both model specifications to be significantly negative. The results show that employee board representation is associated with lower audit fees, suggesting that hypothesis 1 is supported. This decrease in audit fees is consistent with the existence of strong internal control systems and the auditor assessment of the lower risk of material misstatement, hence, less effort in undertaking the audit.

The coefficient estimates of the board and firm-level control variables are mostly consistent with previous literature. Consistent with prior research (Sharma et al., 2017; Ghafran & O'Sullivan, 2017; Alhababsah & Yekini, 2021), the coefficients of board size, percentage of independent directors, percentage of female directors, firm size, inventories, receivables, non-audit fees, and loss are significantly positive. Similarly, the negative sign and the significance level of the coefficients for the percentage of independent audit committee, institutional ownership, leverage, return on assets, liquidity, and operating cash

flow are largely in common with expectations.

Our results are also economically meaningful. For example, using the cross-sectional mean of audit fees (*AFEE*) in Table 3, employee board representation is associated with a decrease in audit fees from 1.6% (Model 2 = 0.244/15.309) to 4.0% (Model 1 = 0.608/15.309). The magnitude of the coefficient estimates changes when we include the control variables and the year, industry, and country fixed effects. These results show that firms are more likely to pay lower audit fees, potentially resulting from strong internal control systems and a lower risk of material misstatement in the presence of employee directors.

Model 3 of Table 5 reports the regression results of testing hypothesis 2. Our main objective is to test the differential effect of the critical mass of employee board representation on audit fees. We find the estimated coefficient on *D_EMPREP1* to be negative but non-significant. In contrast, the coefficient estimates on *D_EMPREP2* and *D_EMPREP3* are significantly negative. These results suggest that while one employee board representation (*D_EMPREP1*) has a non-significant impact on audit fees, the relationship improves in terms of the magnitude of the coefficient estimates and the statistical significance with two as well as three or more employees' board representation. Additionally, we undertake the difference in coefficient test, and the results (not tabulated) show that the coefficient estimate (-0.102) on *D_EMPREP1* is significantly different from that on *D_EMPREP2* (-0.135), and the coefficient estimate on *D_EMPREP2* is significantly different from that on *D_EMPREP3* (-0.200). Consistent with hypothesis 2, one employee board representative is not sufficient to undertake effective monitoring to influence the internal control systems and benefit from lower audit fees due to tokenism and the limited impact on board decision-making. Our results show that the magnitude of the negative association between employee board representation and audit fees increases with an increase in the number of employee directors

on the board, consistent with critical mass theory.

Considering that audit fees decrease for firms with employee directors on the board, especially when the number reaches two or more, one may argue that the relationship between the two may follow a non-linear pattern. Therefore, we test the non-linearity effect of employee directors on audit fees to determine whether there are potential costs of having too many employee directors on the board, and in our particular case, a maximum of 10, as shown in Table 2. In doing so, we re-estimate equation (1) by replacing *D_EMPREP* with the number of employee directors on the board (*EMPREP*) and the quadratic form of $EMPREP^2$. In Model 4 of Table 5, while we find the estimated coefficient on *EMPREP* to be significantly negative, the estimated coefficient on $EMPREP^2$ is positive but statistically non-significant. These results show that in the range of 0 to 10 employee directors on the board in our sample firms, the relationship between employee directors and audit fees is linear[3], implying that audit fees decrease when the number of employee directors on the board increases. The results further confirm our earlier results and the related hypotheses 1 and 2 that audit fees decrease for firms with employee director representation on the board, especially when the number of employee directors reaches two or more.

Taken together, our evidence suggests that employee board representation may improve internal control systems and lower the risk of material misstatement, thereby leading to lower audit fees. Our results are consistent with the supply-side perspective of audit fees. We conclude that employee board representation can help to reduce audit fees in general. However, our results indicate that firms need to have at least two employee directors if they are to benefit from lower audit fees.

[Insert Table 5 here]

[3] See also Figure 1 in Appendix 2 for the graphical presentation of non-linearity effect of employee director.

4.2 Robustness tests

In this section, we undertake a variety of robustness tests. First, to confirm whether our results are sensitive to the selection of employee board representation measures, we employ the proportion of employee representatives (*P_EMPREP*) and the natural logarithm of the number of employee representatives (*L_EMPREP*) on the board as alternative measures (Panel A). Moreover, one may argue that employee representatives on the board may take time to influence internal control systems and, consequently, audit fees. To remove the concern, we use one-year lagged employee representatives (D_EMPREP_{t-1}) in Panel A. Next, given that our main results may be impacted by omitted variables, we re-estimate equation (1) and control for auditor tenure (*AUDTenure*), defined as the number of years that the current auditor has served the firm, corporate governance quality (*GOVscore*), defined as the overall corporate governance score, and one-year lagged audit fees (Panel B), as these variables are likely to affect the audit fees paid by the audit clients to the external auditors. In addition, we confirm whether our results are sensitive to countries with a larger sample by re-estimating equation (1) for Swedish versus non-Swedish, French versus non-French, and German versus non-German firm-year observations (Panel C). Table 6 presents the regression results of the above sensitivity tests. We find evidence consistent with our main results across Panels A to C that employee board representation is associated with lower audit fees. This suggests that our main results are robust to alternative measures of employee board representation, additional control variables and subsample analysis.

[Insert Table 6 here]

4.3 Identification strategies

As in any corporate governance study, our study may be subject to endogeneity. The question is whether lower audit fees make it more likely for a firm to appoint employee directors. While employee board representation is legally mandated conditional on meeting

certain thresholds across the countries studied, we cannot completely rule out endogeneity concerns as not all firms (23.3%) in our sample have employee board representation. In addition, omitted variables may bias our results. In this section, we address endogeneity concerns utilising propensity score matching (PSM), changes regression model and difference-in-differences (DID) estimation.

First, we reduce the potential model misspecification by testing our main results on a matched sample (where the treatment group [control group] consists of firms with [without] employee directors) utilising the two-step propensity score matching (PSM) technique (Rosenbaum & Rubin, 1983; Lin et al., 2018; Overland & Samani, 2021). Utilising *D_EMPREP* as a dependent variable and the board and firm-level variables, as well as year, industry, and country fixed effects as controls in the first step of the PSM technique, we use a probit regression model to assess the likelihood of having employee representatives on the board. The results from Panel A (Model 1) of Table 7 show that several of the explanatory variables are statistically significant with a pseudo R^2 of 0.238. To ensure that our matched sample firms are sufficiently identical, we utilise the nearest neighbour matching technique with 1% maximum PSM difference. We check if our matching is successful by utilising two diagnostic tests. In test one, we re-estimate the probit regression model for the matched sample and present the results in Panel A (Model 2) of Table 7, which shows that the coefficients of the board and firm-level variables have become smaller and non-significant. In addition, the pseudo R^2 has substantially reduced from 0.238 in Model 1 to 0.036 in Model 2, suggesting that the matching process has been able to remove the observable differences across our sample firms. In the second diagnostic test, we test the differences in the mean of the pre-match and the post-match sample firms and report the results in Panel B of Table 7. While there is evidence of significant differences in most pre-match board and firm-level variables, the differences disappear in the post-matched variables. These results further

confirm that the PSM technique has successfully removed the observable differences in the matched sample. Panel A (Model 3) of Table 7 presents the regression results from re-estimating equation (1) for the matched sample and shows that *D_EMPREP* is significantly and negatively associated with *AFEE*. The presence of a consistently negative and statistically significant relationship in the matched sample increases our confidence that employee board representation reduces audit fees.

[Insert Table 7 here]

Second, consistent with prior research (e.g., Johnstone, Li, & Rupley, 2011; Huang, Raghunandan, Huang, & Chiou, 2015; Jiang & Son, 2015; Owusu et al., 2022), we utilise the changes regression model to alleviate the concerns of omitted variables bias. This approach also allows us to directly examine how changes in employee directors from the previous year to the current year correspond to changes in audit fees, allowing us to test a causal relationship between employee directors and audit fees. As in Huang et al. (2015), we specify and estimate the following audit fee changes regression model in equation (5):

$$\Delta AFEE_{i,t} = \alpha + \beta_1.\Delta D\_EMPREP_{i,t} + \beta_2.\Delta Z_{i,t} + \beta_3.Year\_FE_t + \beta_4.Industry\_FE_i + \beta_5.Country\_FE_i + \epsilon_{i,t} \quad (5)$$

where Δ*AFEE* and Δ*D_EMPREP* are changes in audit fees and employee directors between the current year and the previous year, respectively. In addition, since our variable of interest, Δ*D_EMPREP*, is an indicator variable that is set to one if a firm has at least one employee representative (*D_EMPREP*) on board and zero otherwise, we replace it in equation (5) with the changes in the number of employee directors on board, Δ*EMPREP*, as an alternative measure in the changes regression. Δ*Z* is a vector of changes in the control variables as defined in subsection 3.4 and in Appendix 1. The results from estimating equation (5) in

Models 1 and 2 of Table 8 show evidence consistent with those reported in Table 5, suggesting that our main conclusion is upheld and is not impacted by endogeneity issues.

[Insert Table 8 here]

Finally, we examine how audit fees changed around the introduction of mandatory employee board representation regulations in European countries. However, since only France among our sample European countries experienced such a regulatory change during our study period (i.e., 2005-2019), which according to Lafuente (2022), introduced Act 2013-504 of 14 June 2013 to mandate public listed companies with not less than 1,000 French employees or 5,000 worldwide employees to elect 1 or 2 employee directors depending on board size[4], we perform DID analysis around employee board representation regulations during our sample period. In doing so, we specify and estimate the following equation (6):

$$AFEE_{i,t} = \alpha + \beta_1.Treated_{i,t} + \beta_2.Post_{periodi,t} + \beta_3.Treated \times Post_{periodi,t} + \beta_4.Z_{i,t} + \beta_5.Year\_FE_t + \beta_6.Industry\_FE_i + \beta_7.Country\_FE_i + \epsilon_{i,t} \quad (6)$$

where all the variables are defined in subsection 3.4 and in Appendix 1 except *Treated* and $Post_{period}$. While *Treated* is set to one for the firms in the treated group with at least 1,000 French employees or 5,000 worldwide employees and have employee directors on the board, and zero for the control group, $Post_{period}$ is set to one after 2013 and zero before 2013.

Utilising French only sample, the results from estimating equation (6) are reported in Table 9. When we use the post 1-year period in Model 1, post 2 years in Model 2 and post 3 years in Model 3, we find consistent results that treated firms benefited from a reduction in audit fees after the introduction of the mandatory employee board representation regulation in

[4] It is important to highlight that while France first introduced mandatory employee board representation regulations for public listed firms in 2013, the rest of our sample countries introduced regulations earlier, including 1972 Joint-Stock Companies Act for Norway, 1973 Act 370 and Act 371 for Denmark, 1974 Labour Constitution Act for Austria, 1976 Federal Co-determination Act for Germany, 1976 Act 1976/351 for Sweden, and 1988 Business Association Act for Hungary (Conchon, 2011; Lafuente, 2022).

France. Although the magnitudes of the coefficients in Models 1-3 of Table 9 are higher, the results are in line with those reported in Model 2 of Table 5, confirming our main conclusion.

[Insert Table 9 here]

4.4 Possible channels

4.4.1 Employee directors and audit committee effectiveness

The effect of audit committee effectiveness proxied by audit committee independence, size and meeting frequency on audit fees is inconclusive (Abbott, Parker, Peters, & Raghunandan, 2003; Goodwin-Stewart & Kent, 2006; Vafeas & Waegelein, 2007; Hoitash & Hoitash, 2009). For example, while Zaman, Hudaib and Haniffa (2011) in their UK study report that audit committee independence, size, and meeting frequency increase audit fees, Ghafran and O'Sullivan (2017) find that audit committee independence and size have no impact on audit fees but report a positive association between meeting frequency and audit fees across UK firms. Considering that audit committee effectiveness is likely to complement the employee directors' monitoring in addressing internal control weaknesses and demand less time to complete the audit, we would expect audit committee effectiveness to moderate the relationship between employee board representation and audit fees.

To empirically test the role of audit committee effectiveness in the relationship between employee board representation and audit fees, we include an interaction term of *D_EMPREP* and audit committee independence (*PctIndAC*) and re-estimate equation (1). Similarly, we include the interaction terms of *D_EMPREP* and audit committee size (*ACSize*) as well as *D_EMPREP* and audit committee meeting frequency (*ACMeets*) in equation (1), respectively. In Models 1, 2 and 3 of Table 10, the results show that the coefficients of the interaction terms *D_EMPREP* × *PctIndAC* (-0.007), *D_EMPREP* × *ACSize* (-0.073) and

D_EMPREP × *ACSize* (-0.018) are negative and statistically significant at the 5% level or higher. These results suggest that audit committee effectiveness indeed complements employee directors' monitoring to improve the internal control systems, thereby demanding lower effort from the external auditors in line with the reduced audit fees.

[Insert Table 10 here]

4.4.2 Employee directors and board experience

If employee board representation has a decreasing effect on audit fees, their experience as board members is likely to have an effect on audit fees. Considering that the board's ability to supervise internal control systems to a greater degree depends on their experience, it is likely that the relationship between employee board representation and audit fees should be stronger in firms with more board experience than in firms with less board experience. We test our expectations in this section using the key proxies of board experience, including average board tenure (*ABoDTenure*) and average board age (*ABoDAge*). We re-estimate equation (1) and include the interaction term of *D_EMPREP* and *ABoDTenure* as well as the interaction term of *D_EMPREP* and *ABoDAge*, respectively.

In contrast to our expectation, we find insignificant differences when it comes to the role employee directors play in audit fees in firms with more experienced and less experienced boards. In Models 1 and 2 of Table 11, the coefficients of both the interaction terms *D_EMPREP* × *ABoDTenure* (0.023) and *D_EMPREP* × *ABoDAge* (-0.056) are non-significant, implying that board experience does not limit the role of employee directors. Regardless of the board experience, employee board representation can play a role and have a decreasing effect on audit fees.

[Insert Table 11 here]

4.4.3 Employee directors and corporate governance

Employee board representation is considered an important board monitoring mechanism in the improved governance quality of several European firms (Fauver & Fuerst, 2005). If employee board representation leads to effective board monitoring, its impact on audit fees is likely to be noticeable in firms with weak corporate governance. In this section, we examine the possible corporate governance channels through which employee board representation contributes to the decrease in audit fees. First, we employ the key proxy of the overall governance quality (*GOVscor*e) in our regression model and divide our sample into high and low subgroups using the median *GOVscore*. We re-estimate equation (1) for the two subgroups, and the results are reported in Models 1 and 2 of Table 12. We find that the coefficient of *D_EMPREP* for firms with low *GOVscore* is negative and statistically significant at the 5% level, while it is insignificant for high *GOVscore* firms. This evidence shows that employee board representation indeed has a decreasing effect on audit fees in firms with weak corporate governance.

Second, firms with board leadership independence are likely to benefit from effective monitoring, as the board chair can influence a firm's governance structure. If the board chair's influence can permeate through the firm, affecting board decisions, including those related to internal control systems and financial reporting, an independent board chair (*IndChair*) than a non-independent board chair (*non-IndChair*) may have stronger incentives to uphold the firm's value and reputation, thereby encouraging practices that may improve internal control systems and reduce the risk of material misstatement. We, thus, argue that the relationship between employee board representation and audit fees should be more noticeable in firms with non-independent board chairs than in firms with an independent board chair. To test this proposition, we include the board chair in our regression model and group our sample into firms with independent board chairs and firms without independent board chairs

(based on the indicator variable set to one if a firm has an independent board chair and zero otherwise). The results from re-estimating equation (1) are presented in Models 3 and 4 of Table 12. We find that the coefficients of *D_EMPREP* for firms with independent board chairs and non-independent board chairs are both negative and statistically significant at the 5% level or higher. Although the magnitude of the coefficient for firms with non-independent board chairs is greater than for firms with independent board chairs, supporting our expectation, the monitoring role of employee directors in the decrease in audit fees is not restricted by the board leadership independence. Thus, regardless of the independence of board leadership, employee directors can play a monitoring role and reduce audit fees.

Finally, to the extent that firms with two-tier board structure are likely to benefit from greater scrutiny and effective monitoring than firms with one-tier board structure where the lack of separation between decision management and decision control undermines independent monitoring (Tran, 2014; Block & Gerstner, 2016), we expect the effect of employee board representation on audit fees to be stronger in firms with one-tier board structure compared with the two-tier board structure firms. To test this conjecture, we undertake a comparative analysis around the effect of employee board representation on audit fees under a one-tier versus two-tier board structure. Specifically, we include an interaction term of *D_EMPREP* and board structure dummy (*D_TIER*) and re-estimate equation (1). In Model 5 of Table 12, we find that the coefficient of the interaction term is insignificant, suggesting that there are no differences in the role that employee directors play in audit fees across different board structures.

[Insert Table 12 here]

4.5 Audit fees, employees on board and audit quality

Proceeding to our third hypothesis, we have anticipated that the magnitude of audit fees in the presence of employee directors may signal a stronger control environment and

reduced audit risk, thereby leading to improved audit quality. The regression results from estimating equation (4) are reported in Model 1 of Table 13, which show that the coefficient estimate on *AFEE* is positively associated with *PMDACC*, suggesting that higher audit fees increase discretionary accruals. Our results in Model 1 of Table 13 also show that the coefficient estimate on *D_EMPREP* is significantly negatively associated with *PMDACC*, indicating that employee board monitoring decreases discretionary accruals. This evidence is in alignment with a recent study by Overland and Samani (2021), who report lower accruals manipulation in the presence of employee representation on the board. Importantly, the interaction between audit fees and employee representation on the board is significantly negative. In particular, the interaction term, $AFEE \times D\_EMPREP$, is significantly negatively associated with *PMDACC*, implying that decreased audit fees in the presence of employee board representation leads to an improvement in audit quality. This evidence is consistent with the argument that the magnitude of audit fees (i.e., lower audit fees in our case) in the presence of employee directors improves audit quality.

As a robustness test, and in common with Dechow, Sloan and Sweeney (1995), we re-estimate equation (3) by excluding *ROA* to capture modified Jones discretionary accruals (*MJMDACC*) as an alternative measure of *PMDACC* to proxy audit quality. In equation (4), we replace *PMDACC* with *MJMDACC* as our dependent variable and the regression results are reported in Model 2 of Table 13. We find evidence largely consistent with the results in Model 1 of Table 13. In addition, we follow prior research (Mitra et al., 2009; Choi et al., 2010; Asthana & Boone, 2012) and decompose our audit fees into below-normal audit fees (*B_AFEE*) and above-normal audit fees (*A_AFEE*) and interact each of them with employee representation on the board (i.e., $B\_AFEE \times D\_EMPREP$ and $A\_AFEE \times D\_EMPREP$). The results (not tabulated) from re-estimating equation (4) show a significant positive association between below and above-normal audit fees and absolute discretionary accruals

and significantly negative coefficient estimates for the interaction terms.

Overall, our results show that audit fees paid by audit clients to external auditors in the presence of employee board representation improve audit quality due to effective monitoring that may improve internal control systems and a lower risk of material misstatement. The explanation for this is that employee board monitoring may lead to strong internal control systems and a lower risk of material misstatement. This reduces auditors' perceived risk of material misstatement, resulting in lower audit fees and, in turn, improved audit quality.

[Insert Table 13 here]

5. Conclusion

In this paper, we document new evidence on the role of employee board representation and audit outcomes. Our objective is to analyse whether employee board representation affects audit fees and whether the critical mass of employee representation affects the relationship. We also examine whether the interplay between audit fees and employee board representation has an impact on audit quality.

Using a large sample of firms from 2005 to 2019 across seven European countries where employee board representation is mandated, our results are summarised as follows. First, we show that the presence of employee board representation is negatively associated with audit fees, and this association is primarily observed when the number of employee board representation reaches two or more, consistent with the critical mass theory. We also identify, in an additional set of analyses, the potential channels through which employee board representation may affect audit fees. Finally, we find strong evidence that lower audit fees lead to an improvement in audit quality for firms with employee board representation, probably due to improved internal controls. These results are robust to alternative measures, additional controls, subsample analysis, alternative econometric specifications, and

identification strategies, including PSM, changes regression model and DID approach.

Even though we have made every effort to address endogeneity, we acknowledge that we may not have been able to eliminate it completely with our identification strategies and several robustness tests. As with other association studies, inferences regarding the employee board monitoring role in audit outcomes should be made with some caution. However, we believe that the differences in employee board representation requirements within the multi-national setting can make our results more generalisable to other jurisdictions aspiring to allow employee board participation.

Overall, this paper contributes to the existing literature on the employee board monitoring role in corporate governance because it provides new insights and improves our understanding of how audit outcomes can be affected by employee board representation. An important policy implication of our findings is that corporate boards in other jurisdictions should be encouraged to allow employee board participation because firms can benefit from their knowledge spillover and insights in decision-making related to internal control systems and lower audit fees, alongside a corresponding improvement in audit quality. In addition, to the extent that some European countries mandate employee board representation, our findings are important and timely because we show that employee directors primarily become effective monitors when the number increases to two or more. Therefore, regulators, corporate boards and firms should be aware that employee directors can be effective monitoring mechanisms to improve auditing outcomes, especially when the number increases to two or more employee directors.

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Table 1: Sample selection from 2005-2019

	Firm Years
Total sample from STOXX All Share Index	8,565
(-) financial services firms	(1,575)
(-) firms with missing data	(3,848)
Final sample	**3,142**

This table contains the sample selection procedure.

Table 2: Sample breakdown by country

		Audit fees ($)			Number of employees on board		
	N	Mean	Min	Max	Mean	Min	Max
Austria	223	14,713	8,813	310,506	4.938	3.000	6.000
Denmark	355	15,436	7,950	610,000	2.014	0.000	5.000
France	569	28,564	8,000	2,019,000	0.224	0.000	4.000
Germany	465	10,112	7,850	581,000	4.041	0.000	10.000
Hungary	176	14,815	19,000	728,000	3.071	2.000	5.000
Norway	453	16,190	16,500	362,070	1.740	0.000	7.000
Sweden	901	23,697	11,824	725,000	1.657	0.000	9.000

Note: This table provides the sample breakdown by country.

Table 3: Descriptive statistics

	N	Mean	SD	Min	Q1	Median	Q3	Max
AuditFees ($)	3142	33,193	78,756	7,850	11,300	25,228	144,401	2,019,000
AFEE	3142	15.309	1.625	10.597	14.078	15.425	16.483	24.313
EMPREP	3142	1.717	2.145	0.000	0.000	1.000	3.000	10.000
D_EMPREP	3142	0.768	0.408	0.000	1.000	1.000	1.000	1.000
D_EMPREP1	3142	0.063	0.148	0.000	0.000	0.000	0.000	1.000
D_EMPREP2	3142	0.085	0.183	0.000	0.000	0.000	0.000	1.000
D_EMPREP3	3142	0.616	.0409	0.000	1.000	1.000	1.000	1.000
BoDSize	3142	10.574	3.772	3.000	8.000	10.000	12.000	22.000
PctIndDir	3142	59.987	22.333	0.000	44.444	58.333	75.000	100.000
PctIndAC	3142	74.183	27.385	0.000	60.000	75.000	100.000	100.000
PctFEMDir	3142	26.949	14.599	0.000	16.667	27.273	37.500	70.000
INTSOWN	3142	0.584	0.493	0.000	0.000	1.000	1.000	1.000
SIZE	3142	16.428	1.659	10.619	15.390	16.432	17.522	22.334
LEV	3142	0.227	0.157	0.000	0.111	0.214	0.322	1.006
ROA	3142	0.056	0.092	-0.713	0.025	0.049	0.081	0.632
LIQ	3142	1.722	1.581	0.125	1.030	1.356	1.878	22.198
OCF	3142	0.098	0.095	-0.680	0.056	0.089	0.132	0.649
INVT	3142	0.107	0.105	0.000	0.015	0.090	0.159	0.721
REC	3142	0.164	0.096	0.000	0.095	0.147	0.216	0.619
NAFEE	3142	14.049	1.885	8.006	12.651	13.911	15.425	22.401
LOSS	3142	0.113	0.316	0.000	0.000	0.000	0.000	1.000
FIRMAGE	3142	3.140	1.082	0.000	2.398	3.178	4.078	5.602

Note: This table contains descriptive statistics for the full sample. Variables are winsorised to deal with outliers. Appendix 1 contains the variable definitions.

Table 4: Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) BoDSize	1.00														
(2) PctIndDir	-0.27***	1.00													
(3) PctIndAC	-0.20***	0.49***	1.00												
(4) PctFEMDir	-0.11***	0.02	0.12***	1.00											
(5) INTSOWN	-0.04**	0.03*	-0.01	0.03**	1.00										
(6) SIZE	0.36***	-0.04***	0.04**	0.14***	-0.00	1.00									
(7) LEV	-0.02	0.02	-0.01	0.05***	0.05***	0.24***	1.00								
(8) ROA	-0.10***	-0.02	0.01	0.01	-0.04	0.10***	-0.06***	1.00							
(9) LIQ	-0.24***	0.16***	0.11***	-0.03	-0.02	-0.21***	-0.21***	-0.03*	1.00						
(10) OCF	-0.09***	0.01	0.01	-0.02	-0.01	0.10***	-0.07***	0.91***	-0.06***	1.00					
(11) INVT	0.04***	-0.05***	-0.02	-0.04**	0.03***	-0.07***	-0.19***	0.07***	-0.00	0.03**	1.00				
(12) REC	0.12***	-0.10***	-0.10***	-0.03**	0.05***	-0.13***	-0.36***	0.08***	-0.12***	0.07***	0.16***	1.00			
(13) NAFEE	0.15***	-0.11***	-0.03	0.09***	0.07***	0.55***	0.01	0.07***	-0.13***	0.06***	0.05***	0.04**	1.00		
(14) LOSS	-0.01	0.05***	-0.01	-0.03*	-0.01	-0.14***	0.08***	-0.36***	0.13***	-0.24***	-0.07***	-0.10***	-0.04***	1.00	
(15) FIRMAGE	0.12***	-0.15***	-0.04**	0.06***	-0.06***	0.23***	-0.10***	0.07***	-0.06***	0.06***	0.11***	0.04***	0.25***	-0.11***	1.00

Note: This table contains the correlation coefficients of the control variables. Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 5: Employees on the board and audit fees

Variable	(1) OLS AFEE	(2) OLS AFEE	(3) OLS AFEE	(4) Quadratic AFEE
D_EMPREP	-0.608***	-0.244***	-	-
	(-11.88)	(-5.26)	-	-
D_EMPREP1	-	-	-0.102	-
	-	-	(-0.90)	-
D_EMPREP2	-	-	-0.135**	-
	-	-	(-2.11)	-
D_EMPREP3	-	-	-0.200***	-
	-	-	(-4.09)	-
EMPREP	-	-	-	-0.089***
	-	-	-	(-3.19)
$EMPREP^2$	-	-	-	0.002
	-	-	-	(0.44)
BoDSize	-	0.026***	0.020***	0.027***
	-	(4.42)	(2.58)	(2.88)
PctIndDir	-	0.001*	0.002**	0.002**
	-	(1.86)	(2.32)	(2.15)
PctIndAC	-	-0.002**	-0.009***	-0.005**
	-	(-2.17)	(-5.65)	(-2.25)
PctFEMDir	-	0.014***	0.002***	0.008***
	-	(10.12)	(3.03)	(3.90)
INTSOWN	-	-0.093**	-0.081**	-0.082**
	-	(-2.33)	(-2.18)	(-2.05)
SIZE	-	0.375***	0.328***	0.443***
	-	(16.39)	(15.16)	(13.51)
LEV	-	-0.317**	-0.284**	-0.178**
	-	(-2.39)	(-2.33)	(-1.97)
ROA	-	-0.267*	-0.179	-1.032*
	-	(-1.69)	(-0.46)	(-1.77)
LIQ	-	-0.058***	-0.062***	-0.080***
	-	(-4.83)	(-5.98)	(-4.15)
OCF	-	-0.566*	-0.441**	-0.347**
	-	(-1.68)	(-2.35)	(-2.09)
INVT	-	0.401**	0.460***	0.714***
	-	(2.24)	(2.84)	(2.78)
REC	-	1.792***	1.671***	2.355***
	-	(7.27)	(7.27)	(7.49)
NAFEE	-	0.412***	0.416***	0.372***
	-	(21.79)	(19.95)	(13.48)
LOSS	-	0.038**	0.037**	0.059**
	-	(2.47)	(2.48)	(2.46)
FIRMAGE	-	0.027	0.011	0.033
	-	(1.29)	(0.56)	(1.14)
Constant	14.054***	3.342***	3.395***	2.404***
	(31.04)	(11.23)	(12.00)	(5.00)
Year_FE	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes
Country_FE	Yes	Yes	Yes	Yes
Observations	3142	3142	3142	3142
Adjusted R^2	0.273	0.751	0.793	0.722
F-statistic	71.144	186.772	233.355	92.028

Note: This table contains the regression results of audit fee analyses. The OLS and quadratic regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 6 Robustness Analyses

Panel A: Alternative proxies of employees on board

	(1)	(2)	(3)
Variable	AFEE	AFEE	AFEE
D_EMPREP_{t-1}	-0.235***	-	-
	(-5.04)	-	-
P_EMPREP	-	-0.683***	-
	-	(-4.45)	-
L_EMPREP	-	-	-0.160***
	-	-	(-3.82)
BoDSize	0.025***	0.016**	0.019**
	(4.37)	(2.12)	(2.55)
PctIndDir	0.001**	0.002**	0.002***
	(1.98)	(2.40)	(2.59)
PctIndAC	-0.002**	-0.016***	-0.015***
	(-2.16)	(-9.18)	(-9.01)
PctFEMDir	0.014***	0.003***	0.003***
	(9.96)	(2.91)	(2.99)
INTSOWN	-0.092**	-0.086**	-0.085**
	(-2.30)	(-2.32)	(-2.29)
SIZE	0.377***	0.394***	0.391***
	(16.47)	(13.12)	(13.06)
LEV	-0.321**	-0.555***	-0.520***
	(-2.41)	(-3.04)	(-2.84)
ROA	-0.253*	-0.286*	-0.308*
	(-1.65)	(-1.67)	(-1.69)
LIQ	-0.058***	-0.072***	-0.071***
	(-4.85)	(-5.60)	(-5.50)
OCF	-0.582*	-0.504*	-0.516*
	(-1.73)	(-1.65)	(-1.68)
INVT	0.389**	0.026**	0.039**
	(2.18)	(2.11)	(2.16)
REC	1.826***	1.337***	1.360***
	(7.44)	(4.01)	(4.07)
NAFEE	0.410***	0.444***	0.443***
	(21.62)	(18.49)	(18.45)
LOSS	0.033**	0.166*	0.170*
	(2.41)	(1.67)	(1.72)
FIRMAGE	0.028	0.004	0.005
	(1.33)	(0.15)	(0.17)
Constant	3.411***	2.697***	2.685***
	(11.20)	(7.37)	(7.19)
Year_FE	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes
Country_FE	Yes	Yes	Yes
Observations	2930	3142	3142
Adjusted R^2	0.752	0.761	0.761
F-statistic	187.400	239.059	238.536

Panel B: Additional controls

Variable	(1) AFEE	(2) AFEE	(3) AFEE	(4) AFEE
D_EMPREP	-0.274***	-0.189***	-0.070***	-0.168****
	(-3.27)	(-4.22)	(-2.74)	(-5.75)
BoDSize	0.027**	0.028**	0.026***	0.014*
	(2.23)	(2.40)	(2.64)	(1.90)
PctIndDir	0.008***	0.001**	0.001***	0.001****
	(4.14)	(2.05)	(2.68)	(2.76)
PctIndAC	-0.005***	-0.002**	-0.001***	-0.001***
	(-3.78)	(-2.25)	(-2.59)	(-2.63)
PctFEMDir	0.010***	0.012***	0.003***	0.001**
	(4.31)	(8.31)	(3.34)	(2.30)
INTSOWN	-0.121*	-0.075*	-0.084**	-0.079**
	(-1.89)	(-1.94)	(-2.20)	(-2.32)
SIZE	0.365***	0.338***	0.046**	0.029*
	(10.74)	(14.80)	(2.34)	(1.67)
LEV	-0.203**	-0.175**	-0.176**	-0.099**
	(-2.12)	(-2.37)	(-2.24)	(-1.95)
ROA	-0.916	-0.247	-0.056	-0.185
	(-1.39)	(-0.64)	(-0.34)	(-0.68)
LIQ	-0.017**	-0.052***	-0.014**	-0.022**
	(-2.07)	(-4.43)	(-2.40)	(-2.52)
OCF	-1.576***	-0.571*	-0.180	-0.419
	(-2.76)	(-1.72)	(-1.30)	(-1.41)
INVT	0.401**	0.418**	0.082**	-0.059
	(2.24)	(2.36)	(1.99)	(-0.46)
REC	1.674***	1.933***	0.224*	0.106
	(3.88)	(8.03)	(1.79)	(0.48)
NAFEE	0.383***	0.417***	0.083***	0.045***
	(12.16)	(23.03)	(4.22)	(2.73)
LOSS	0.340***	0.012**	0.020*	0.082*
	(2.69)	(2.15)	(1.67)	(1.82)
FIRMAGE	0.044	-0.021	0.003	0.021
	(1.20)	(-1.06)	(0.29)	(1.50)
AUDTenure	-0.004	-	-	-0.002
	(-1.31)	-	-	(-1.55)
GOVscore	-	-0.024***	-	-0.021***
	-	(-12.50)	-	(-8.55)
$AFEE_{t-1}$	-	-	0.832***	0.903***
	-	-	(18.61)	(43.15)
Constant	2.655***	3.143***	0.611***	0.644***
	(6.21)	(10.73)	(3.38)	(3.02)
Year_FE	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes
Country_FE	Yes	Yes	Yes	Yes
Observations	3142	3142	2930	2930
Adjusted R^2	0.777	0.770	0.944	0.958
F-statistic	88.11	228.67	345.76	652.858

Panel C: Cross-country analysis

	(1) Swedenonly	(2) exSweden	(3) Franceonly	(4) exFrance	(5) Germanyonly	(6) exGermany
D_EMPREP	-0.052*	-0.131***	-0.356**	-0.011**	-0.083*	-0.144***
	(-1.94)	(-2.87)	(-2.20)	(-2.22)	(-1.68)	(-2.64)
BoDSize	-0.008	0.020**	0.060**	-0.001	0.019*	0.030**
	(-0.68)	(2.20)	(2.33)	(-0.07)	(1.69)	(2.30)
PctIndDir	0.002	0.003***	-0.001	0.002**	0.005***	-0.001
	(1.16)	(2.78)	(-0.14)	(2.40)	(3.14)	(-0.51)
PctIndAC	-0.005**	-0.010***	-0.028***	-0.009***	-0.007**	-0.008***
	(-2.49)	(-5.08)	(-3.58)	(-5.97)	(-2.21)	(-4.95)
PctFEMDir	0.001	0.002***	0.006**	0.001*	0.002*	0.002*
	(1.38)	(2.72)	(2.19)	(1.83)	(1.88)	(1.91)
PctIndAC	0.005**	0.010***	0.028***	0.009***	0.007**	0.008***
	(2.49)	(5.08)	(3.58)	(5.97)	(2.21)	(4.95)
INSTOWN	-0.015	-0.092*	-0.336***	-0.029	-0.221***	-0.042**
	(-0.32)	(-1.95)	(-3.35)	(-0.78)	(-2.93)	(-2.00)
SIZE	0.558***	0.297***	0.569***	0.308***	0.233***	0.378***
	(19.41)	(11.44)	(6.12)	(15.80)	(4.60)	(15.95)
LEV	-0.228	-0.407**	-0.013	-0.412***	-0.531*	-0.207
	(-1.37)	(-2.49)	(-0.03)	(-3.45)	(-1.66)	(-1.63)
ROA	-1.898***	0.223	-3.556**	-0.476	-2.657***	0.132
	(-4.02)	(0.49)	(-2.29)	(-1.28)	(-2.73)	(0.36)
LIQ	0.026	-0.075***	0.044	-0.061***	-0.081***	-0.049***
	(1.53)	(-5.71)	(1.58)	(-5.82)	(-2.87)	(-4.62)
OCF	-0.853**	-0.716*	-1.611	-0.238	0.898	-0.731**
	(-2.10)	(-1.79)	(-1.49)	(-0.75)	(1.22)	(-2.39)
INVT	-0.058	0.229*	-0.702	0.563***	-0.195	0.214**
	(-0.35)	(1.88)	(-1.04)	(3.41)	(-0.50)	(2.25)
REC	1.761***	1.526***	0.666	1.891***	2.286***	1.802***
	(6.20)	(5.03)	(0.95)	(9.21)	(4.14)	(6.85)
NAFEE	0.229***	0.444***	0.142	0.485***	0.395***	0.425***
	(8.82)	(17.54)	(1.19)	(23.79)	(9.31)	(18.12)
LOSS	-0.045	0.046**	0.092**	0.004	-0.198	0.029**
	(-0.45)	(2.51)	(2.48)	(0.05)	(-1.24)	(2.34)
FIRMAGE	0.025	0.024	-0.091**	0.057***	0.100**	-0.019
	(0.88)	(0.92)	(-1.99)	(2.73)	(2.37)	(-0.79)
Constant	3.169***	3.661***	4.543***	2.467***	5.540***	2.388***
	(7.83)	(9.51)	(4.94)	(9.15)	(7.37)	(8.17)
Year_FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes	Yes	Yes
Country_FE	No	Yes	No	Yes	No	Yes
Observations	901	2241	569	2573	465	2677
Adjusted R^2	0.881	0.748	0.653	0.737	0.750	0.801
F-statistic	198.558	112.399	134.759	254.339	96.188	201.794

Note: This table contains the regression results of robustness analyses using alternative and lagged proxies for employee board representation (Panel A), inclusion of additional control variables (Panel B), and cross-country analysis. The OLS regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 7: Propensity score matching
Panel A: Pre-match and post-match regressions

	(1)	(2)	(3)
	Pre-match probit	Post-match probit	Post-match OLS
Variable	D_EMPREP	D_EMPREP	AFEE
D_EMPREP	-	-	-0.294***
	-	-	(-5.02)
BoDSize	0.180***	-0.003	0.064***
	(8.93)	(-0.17)	(5.75)
PctIndDir	0.005**	0.002	0.006***
	(2.04)	(1.18)	(3.51)
PctIndAC	0.008**	0.002	-0.007***
	(2.32)	(0.49)	(-2.92)
PctFEMDir	-0.012	-0.003	0.001**
	(-1.44)	(-0.40)	(2.48)
INTSOWN	-0.043	-0.002	-0.065**
	(-0.53)	(-0.04)	(-1.99)
SIZE	0.261***	0.019	0.391***
	(6.41)	(0.43)	(12.01)
LEV	0.575**	0.163	-0.092**
	(2.37)	(0.49)	(-2.43)
ROA	0.478	1.101	-1.046*
	(0.71)	(1.14)	(-1.67)
LIQ	-0.076	-0.002	-0.115***
	(-1.54)	(-0.10)	(-3.44)
OCF	-1.278**	-0.647	-1.046**
	(-2.16)	(-0.88)	(-2.25)
INVT	1.760***	0.089	0.831***
	(3.41)	(0.18)	(2.90)
REC	2.188***	-0.895	1.716***
	(4.92)	(-1.59)	(4.40)
NAFEE	-0.063**	0.040	0.383***
	(-2.10)	(1.36)	(15.95)
LOSS	0.385**	-0.021	0.326**
	(2.55)	(-0.11)	(2.34)
FIRMAGE	-0.089**	-0.021	0.063
	(-2.30)	(-0.43)	(1.58)
Constant	4.518***	0.145	2.276***
	(6.84)	(0.21)	(5.61)
Year_FE	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes
Country_FE	Yes	Yes	Yes
Observations	3142	1356	1356
Adjusted R^2	-	-	0.696
Pseudo R^2	0.238	0.036	-
F-statistic	-	-	132.434

Panel B: Pre-match and post-matched sample evaluation

Variables	Pre-match sample			Post-match sample		
	Treatment group D_EMPREP = 1 N=2413 Mean	Control group D_EMPREP = 0 N=729 Mean	Mean differences	Treatment group D_EMPREP = 1 N= 678 Mean	Control group D_EMPREP = 0 N= 678 Mean	Mean differences
BoDSize	11.010	9.985	1.025***	9.993	10.009	-0.016
PctIndDir	59.253	59.307	-0.054	60.113	61.493	-1.38
PctIndAC	73.853	77.820	-3.967***	78.826	78.157	0.669
PctFEMDir	23.885	26.022	-2.137***	28.448	28.604	-0.156
INTSOWN	0.622	0.513	0.109***	0.572	0.565	0.007
SIZE	15.349	16.961	-1.612***	16.892	16.888	0.004
LEV	0.251	0.268	-0.017**	0.243	0.242	0.001
ROA	0.053	0.041	0.012*	0.073	0.069	0.004
LIQ	1.947	1.459	0.488***	1.490	1.548	-0.058
OCF	0.092	0.078	0.014*	0.120	0.110	0.01
INVT	0.111	0.077	0.034***	0.081	0.082	-0.001
REC	0.172	0.128	0.044***	0.134	0.142	-0.008
NAFEE	13.542	14.094	-0.552***	14.350	14.263	0.087
LOSS	0.121	0.082	0.039***	0.060	0.078	-0.018
FIRMAGE	2.893	3.241	-0.348***	3.267	3.241	0.026

Note: This table contains the results of the propensity score matching analyses, where pre-match and post-match regressions are in Panel A, and the test for differences in pre-match and post-matched sample evaluation is in Panel B. The OLS regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 8: Changes regression model

Variable	(1) AFEE	(2) AFEE
ΔD_EMPREP	-0.051***	-
	(-2.70)	-
ΔEMPREP	-	-0.037**
	-	(-2.35)
ΔBoDSize	0.014**	0.015**
	(2.39)	(2.48)
ΔPctIndDir	0.001*	0.001*
	(1.79)	(1.78)
ΔPctIndAC	-0.001*	-0.002**
	(-1.66)	(-2.12)
ΔPctFEMDir	0.011***	0.013***
	(4.77)	(6.16)
ΔINTSOWN	-0.054**	-0.066**
	(-2.21)	(-2.57)
ΔSIZE	0.136**	0.080**
	(2.33)	(2.10)
ΔLEV	-0.137**	-0.135**
	(-2.29)	(-2.15)
ΔROA	-0.314*	-0.314**
	(-1.92)	(-2.08)
ΔLIQ	-0.014**	-0.010**
	(-2.27)	(-2.52)
ΔOCF	-0.233*	-0.165*
	(-1.67)	(-1.87)
ΔINVT	0.198*	0.151*
	(1.85)	(1.73)
ΔREC	0.156**	0.170**
	(2.56)	(2.24)
ΔNAFEE	0.088*	0.062*
	(1.74)	(1.95)
ΔLOSS	0.023**	0.026**
	(2.05)	(2.31)
ΔFIRMAGE	0.050	0.052
	(0.48)	(0.16)
Constant	0.212**	0.237**
	(2.12)	(2.36)
Year, Industry and Country FE	Yes	Yes
Observations	2733	2733
Adjusted R^2	0.074	0.053
F-statistic	11.746	11.375

Note: This table contains the results of the changes regression model. The changes regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains all other variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 9: Difference-in differences analysis – France only

Variable	(1) AFEE	(2) AFEE	(3) AFEE
Treated	1.077***	0.962***	0.724***
	(5.88)	(6.64)	(5.94)
$Post_{1year}$	-0.244	-	-
	(-1.57)	-	-
Treated × $Post_{1year}$	-0.782***	-	-
	(-4.11)	-	-
$Post_{2years}$	-	-0.222	-
	-	(-1.43)	-
Treated × $Post_{2years}$	-	-0.749***	-
	-	(-4.87)	-
$Post_{3year}$	-	-	-0.220
	-	-	(-1.42)
Treated × $Post_{3year}$	-	-	-0.527***
	-	-	(-3.84)
BoDSize	0.014**	0.014**	0.014**
	(2.28)	(2.32)	(2.26)
PctIndDir	0.001	0.001	0.001
	(1.21)	(1.18)	(1.24)
PctIndAC	-0.002**	-0.002**	-0.002**
	(-2.33)	(-2.31)	(-2.40)
PctFEMDir	0.013***	0.013***	0.013***
	(8.43)	(8.54)	(8.46)
INTSOWN	-0.085**	-0.081**	-0.085**
	(-2.13)	(-2.05)	(-2.14)
SIZE	0.382***	0.379***	0.381***
	(16.64)	(16.54)	(16.60)
LEV	-0.340***	-0.333**	-0.326**
	(-2.60)	(-2.55)	(-2.49)
ROA	-0.297	-0.316	-0.328
	(-0.78)	(-0.82)	(-0.85)
LIQ	-0.055***	-0.055***	-0.055***
	(-4.68)	(-4.65)	(-4.59)
OCF	-0.439	-0.421	-0.403
	(-1.33)	(-1.27)	(-1.21)
INVT	0.391**	0.403**	0.403**
	(2.20)	(2.29)	(2.28)
REC	1.641***	1.628***	1.625***
	(6.72)	(6.68)	(6.64)
NAFEE	0.429***	0.432***	0.430***
	(21.76)	(22.02)	(21.89)
LOSS	-0.037**	-0.032**	-0.030**
	(-2.47)	(-2.40)	(-2.38)
FIRMAGE	0.030	0.030	0.030
	(1.47)	(1.49)	(1.46)
Constant	2.913***	2.906***	2.905***
	(9.78)	(9.74)	(9.73)
Year, Industry and Country FE	Yes	Yes	Yes
Observations	443	412	380
Adjusted R^2	0.645	0.645	0.644
F-statistic	36.721	39.822	36.692

Note: This table contains the difference-in-differences estimation results. Appendix 1 contains all variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 10: Employees directors and audit committee effectiveness

Variable	(1) AFEE	(2) AFEE	(3) AFEE
D_EMPREP	-0.450***	-0.221**	-0.183***
	(-2.92)	(-2.18)	(-2.65)
PctIndAC	0.004**	-	-
	(2.16)	-	-
D_EMPREP × PctIndAC	-0.007***	-	-
	(-3.68)	-	-
ACSize	-	0.010	-
	-	(0.36)	-
D_EMPREP × ACSize	-	-0.073**	-
	-	(-2.51)	-
ACMeets	-	-	0.003
	-	-	(0.12)
D_EMPREP × ACMeets	-	-	-0.018***
	-	-	(-2.74)
BoDSize	0.013*	0.037***	0.014**
	(1.69)	(5.60)	(2.10)
PctIndDir	0.002**	0.002**	0.002*
	(2.11)	(2.37)	(1.76)
PctFEMDir	0.009***	0.013***	0.010***
	(5.81)	(9.61)	(5.28)
INTSOWN	-0.078**	-0.088**	-0.039
	(-2.14)	(-2.23)	(-0.81)
SIZE	0.348***	0.373***	0.432***
	(16.81)	(16.26)	(14.39)
LEV	-0.363***	-0.317**	-0.241
	(-3.05)	(-2.39)	(-1.58)
ROA	-0.182	-0.222	-0.671
	(-0.47)	(-0.58)	(-1.36)
LIQ	-0.062***	-0.060***	-0.092***
	(-5.97)	(-5.02)	(-5.72)
OCF	-0.389	-0.658**	-0.287
	(-1.19)	(-1.97)	(-0.66)
INVT	0.404**	0.350*	0.405*
	(2.50)	(1.96)	(1.90)
REC	1.659***	1.776***	2.102***
	(7.11)	(7.27)	(7.11)
NAFEE	0.415***	0.408***	0.353***
	(19.92)	(21.65)	(14.71)
LOSS	0.024	-0.040	-0.119
	(0.32)	(-0.50)	(-1.15)
FIRMAGE	0.013	0.031	0.029
	(0.66)	(1.47)	(1.04)
Constant	2.611***	3.212***	3.086***
	(9.13)	(10.15)	(7.87)
Year_FE	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes
Country_FE	Yes	Yes	Yes
Observations	3142	3142	3142
Adjusted R^2	0.793	0.755	0.711
F-statistic	236.766	182.847	102.738

Note: This table contains the regression results of employees on board, audit committee effectiveness and audit fees. The OLS regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 11: Employees directors and board experience

Variable	(1) AFEE	(2) AFEE
D_EMPREP	-0.091**	-0.219***
	(-2.45)	(-3.36)
ABoDTenure	-0.042**	-
	(-2.01)	-
D_EMPREP × ABoDTenure	0.023	-
	(0.89)	-
ABoDAge	-	0.032***
	-	(3.61)
D_EMPREP × ABoDAge	-	-0.056
	-	(-0.86)
BoDSize	0.045***	0.058***
	(2.96)	(7.10)
PctIndDir	0.004**	-0.001
	(2.14)	(-0.53)
PctIndAC	-0.002**	-0.002
	(-2.50)	(-1.63)
PctFEMDir	0.010***	0.014***
	(3.43)	(7.31)
INTSOWN	-0.099	-0.094**
	(-1.55)	(-1.97)
SIZE	0.345***	0.277***
	(9.78)	(9.33)
LEV	-0.157*	-0.464***
	(-1.79)	(-2.67)
ROA	-0.126	-0.313*
	(-0.18)	(-1.68)
LIQ	-0.113***	-0.078***
	(-4.65)	(-5.66)
OCF	-0.119	-1.082***
	(-0.21)	(-2.78)
INVT	0.188	0.270
	(0.43)	(1.20)
REC	2.418***	1.411***
	(7.13)	(4.93)
NAFEE	0.405***	0.418***
	(13.68)	(17.38)
LOSS	0.202*	0.087*
	(1.77)	(1.88)
FIRMAGE	0.069	-0.021
	(1.55)	(-0.83)
Constant	3.890***	1.661***
	(8.14)	(2.74)
Year_FE	Yes	Yes
Industry_FE	Yes	Yes
Country_FE	Yes	Yes
Observations	3142	3142
Adjusted R^2	0.775	0.761
F-statistic	97.701	106.325

Note: This table contains the regression results of employees on board, board experience and audit fees. The OLS regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 12: Employees directors and corporate governance

	GOVscore		Board Chair		
	High	Low	IndChair	Non-IndChair	AFEE
Variable	(1)	(2)	(3)	(4)	(5)
D_EMPREP	-0.101	-0.164**	-0.173**	-0.235***	-0.150**
	(-1.52)	(-2.51)	(-2.23)	(-3.70)	(-2.23)
D_TIER	-	-	-	-	-0.074
	-	-	-	-	(-0.57)
D_EMPREP × D_TIER	-	-	-	-	-0.097
	-	-	-	-	(-0.61)
BoDSize	0.033***	0.022*	0.002	0.053***	0.024**
	(4.06)	(1.95)	(0.21)	(4.79)	(2.14)
PctIndDir	0.002	0.003**	-0.002	0.001	0.004**
	(1.60)	(2.02)	(-1.00)	(0.42)	(2.24)
PctIndAC	-0.002**	-0.004***	-0.001	-0.002	-0.004***
	(-2.45)	(-3.04)	(-1.45)	(-1.64)	(-3.12)
PctFEMDir	0.009***	0.005**	0.009***	0.013***	0.005**
	(4.28)	(2.50)	(4.02)	(5.62)	(2.54)
INTSOWN	-0.214***	0.013	-0.090*	-0.001	-0.017**
	(-4.02)	(0.26)	(-1.75)	(-0.01)	(-2.34)
SIZE	0.260***	0.391***	0.369***	0.437***	0.386***
	(8.46)	(13.25)	(13.88)	(10.05)	(13.17)
LEV	-0.380**	-0.122	-0.046	-0.574**	-0.143*
	(-2.16)	(-0.79)	(-0.27)	(-2.56)	(-1.92)
ROA	-1.246***	1.076*	-0.170	0.961	-1.128***
	(-2.66)	(1.86)	(-0.35)	(1.51)	(2.92)
LIQ	-0.089***	-0.020	-0.054***	-0.046*	-0.020
	(-6.83)	(-1.01)	(-4.03)	(-1.82)	(-1.04)
OCF	-0.118	-0.782*	0.093	-1.886***	-0.773*
	(-0.27)	(-1.87)	(0.24)	(-3.40)	(-1.86)
INVT	0.492**	0.169	0.478**	0.244	0.228
	(2.02)	(0.80)	(2.15)	(0.75)	(1.06)
REC	2.144***	1.211***	1.359***	1.700***	1.219***
	(7.64)	(3.52)	(4.77)	(4.57)	(3.60)
NAFEE	0.444***	0.364***	0.467***	0.292***	0.369***
	(16.75)	(11.74)	(15.83)	(9.09)	(12.01)
LOSS	-0.123	0.083	0.300***	-0.117	0.103*
	(-1.23)	(0.71)	(2.75)	(-1.00)	(1.88)
FIRMAGE	0.074***	-0.044	0.012	0.016	-0.040
	(2.71)	(-1.57)	(0.44)	(0.45)	(-1.43)
Constant	4.136***	3.060***	2.310***	3.967***	3.142***
	(10.06)	(7.60)	(5.95)	(6.71)	(7.61)
Year_FE	Yes	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes	Yes
Country_FE	Yes	Yes	Yes	Yes	Yes
Observations	1562	1580	1576	1566	3142
Adjusted R^2	0.792	0.770	0.830	0.722	0.771
F-statistic	127.540	131.723	155.387	90.891	125.838

Note: This table contains the regression results of employee directors, corporate governance and audit fees. The OLS regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Table 13: Employees on board, audit fees and audit quality

Variable	(1) PMDACC	(2) MJMDACC
AFEE	0.016**	0.017**
	(2.08)	(2.26)
D_EMPREP	-0.083***	-0.092***
	(-2.82)	(-3.03)
AFEE × D_EMPREP	-0.058***	-0.064***
	(-2.68)	(-2.91)
BoDSize	0.013**	0.011**
	(2.24)	(2.13)
PctIndDir	0.005	0.008
	(0.68)	(0.54)
PctIndAC	-0.018**	-0.021***
	(-2.46)	(-2.64)
PctFEMDir	-0.012**	-0.014**
	(-2.17)	(-2.07)
SIZE	-0.003***	-0.003**
	(-2.61)	(-2.26)
LEV	-0.019*	-0.011**
	(-1.66)	(-1.80)
ROA	-0.104**	-0.120***
	(-2.50)	(-2.59)
LIQ	0.002**	0.002**
	(2.32)	(1.97)
OCF	0.060**	0.067**
	(2.36)	(2.41)
MBV	0.001**	0.001**
	(2.28)	(2.40)
SALESG	-0.002	-0.001
	(-0.81)	(-0.51)
INSTOWN	-0.001**	-0.001*
	(-1.97)	(-1.95)
LOSS	0.026**	0.027**
	(2.03)	(2.14)
FIRMAGE	0.002	0.002
	(1.29)	(1.48)
NAFEE	0.002**	0.003**
	(2.43)	(2.57)
Constant	0.160***	0.152***
	(3.03)	(2.88)
Year_FE	Yes	Yes
Industry_FE	Yes	Yes
Country_FE	Yes	Yes
Observations	2984	2984
Adjusted R^2	0.121	0.122
F-statistic	15.066	14.624

Note: This table contains the regression results of employees on board, audit fees and audit quality. The OLS regression models are estimated with dual clustered robust standard errors (both firm and year). Appendix 1 contains the variable definitions. ***, **, * denote significance at the 1%, 5% and 10% levels.

Appendix 1: Variable definitions.

Variable	Definition
AFEE	The natural logarithm of audit fees paid by the audit clients
EMPREP	The number of employee representatives on the board
D_EMPREP	The indicator variable set to one if a firm has at least one employee representative on the board and zero otherwise
P_EMPREP	The number of employee representatives on the board scaled by the number of board members
L_EMPREP	The natural logarithm of the number of employee representatives on the board
D_EMPREP1	The indicator variable set to one if a firm has one employee representative on the board and zero otherwise
D_EMPREP2	The indicator variable set to one if a firm has two employee representatives on the board and zero otherwise
D_EMPREP3	The indicator variable set to one if a firm has three or more employee representatives on the board and zero otherwise
BoDSize	The number of directors serving on the board
PctIndDir	The number of independent directors scaled by the number of board members
PctIndAC	The number of independent audit committee members scaled by the number of audit committee members
PctFEMDir	The number of female directors scaled by the number of board members
INTSOWN	The indicator variable set to one if the institutional shareholding of a firm is greater than the median and zero otherwise
SIZE	The natural logarithm of the total assets
LEV	Total debt scaled by the sum of total debt plus common equity
ROA	Net income scaled by total assets
LIQ	Current assets scaled by current liabilities
OCF	Cash and cash equivalent scaled by total assets
INVT	Inventory scaled by total assets
REC	Receivables scaled by total assets
MBV	Market capitalization scaled by the book value of common equity
SALESG	The percentage change in sales from the previous year
NAFEE	The natural logarithm of non-audit fees paid by the audit clients
LOSS	The indicator variable set to one if the firm had reported losses and 0 otherwise
FIRMAGE	The natural logarithm of the number of years from the date of incorporation
AUDTENURE	The number of years that the current auditor has served the firm
GOVscore	Corporate governance score downloaded from Thompson Reuters Worldscope Refinitiv database
Year_FE	Year fixed effects indicator variables
Industry_FE	Industry fixed effects indicator variables
Country_FE	Country fixed effects indicator variables

Appendix 2: Non-linearity effect of Employee directors on audit fees