BOARD ETHICS AND AUDITOR CHOICE – INTERNATIONAL EVIDENCE

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ABSTRACT

This study examines whether firms' auditor choice relates reflects the strength of board ethics. Using a large sample of firms 132,853 firm year observations from forty-six countries around the globe. and controlling for a number of firm- and country-level factors, we find that firms in countries where "high board ethical values" prevail are more likely to hire a Big 4 auditor. We also find that the relation between board ethical values and auditor choice is mitigated by the firm's board size. These results establish an indirect link between board ethics and financial reporting quality through the firm's choice of auditor.

Key words: *Ethics, board ethics, auditor quality, board size, corporate ethics.*

JEL classification: F23; G15; M41.

Board Ethics and Auditor Choice – International Evidence

1. Introduction

Deep public concern over ethical and financial misconduct by the senior management and directors of major companies led to the passage of the historic Sarbanes-Oxley Act 2002 redefining the roles and responsibilities of corporations and those who serve them. The evidence of management rent seeking behaviour and manipulation of accounting numbers raised many questions about the values of those at the helm of organizations as well as the system of accountability and transparency that exists in the corporate world. The Securities and Exchange Commission has since made significant changes in the oversight function of public companies. They have also asked public companies to disclose the fundamental values by which they operate, and by which the conduct of executives is measured.

Senior management and directors are challenged to examine the "tone at the top" of their organizations, and to emphasize ethics and integrity in business decisions making processes. Many are aware that the collapse of Enron was preceded by the ill-advised decision of the company's directors to specifically waive provisions of the company's code of ethics. That decision allowed Enron's chief financial officer to benefit from transactions involving the company. [The Special Investigation Committee of the Board of Directors of Enron Corp (Feb. 1, 2002)]. The precise facts of the directors' decisions, reported extensively in the media (but only after the fact), led to proposed reforms by the New York Stock Exchange that were modified and incorporated in Section 406 of Sarbanes-Oxley Act 2002. This Section requires public companies to disclose whether they have a code of ethics and also to disclose any waivers of the code for certain members of senior management. The Commission

adopted specific rules implementing these requirements in January 2003. [Release No. 33-8177 (Jan. 23, 2003), Release No. 34-47262 (Jan. 27, 2003),]. The Commission approved significant reforms by the NYSE and NASDAQ that, among other things, specifically require companies listed on a markets to have codes of ethics applicable to all employees, senior management, and directors. [Release No. 34-48745 (Nov. 4, 2003].

This paper contributes to the literature on corporate ethics focussing, in particular, on 'board ethics' and we explore the relationship between board ethics and firms' choice of external auditor. Prior research on the determinants of auditor choice provides convincing evidence that, on average, audit quality increases with auditor size (DeAngelo 1981; Datar et al. 1991; DeFond and Jiambalvo 1993; Craswell et al. 1995; Francis and Wang 2008; Hope et al. 2008). High-quality audits serve as useful corporate governance mechanism by reducing information asymmetries and agency conflicts between the firm and its stockholders (Jensen and Meckling 1976; Palmrose 1984; Watts and Zimmerman 1986; Francis and Wilson 1988; Craswell et al. 1995; Francis and Wang 2008; Hope et al. 2008). As a consequence, high-quality audits lend credibility to accounting information by improving the precision of accounting information (Simunic and Stein, 1987; Becker et al. 1998; Hope et al. 2008).

No prior study examines whether board ethics relates to firms' auditor choice. Instead, to understand the association between board ethics and financial reporting, prior research has focused primarily on the association between culture and the quality of firm disclosure (Jaggi and Low 2000; Hope 2003_a and Hope et al. 2008). A country's disclosure requirements can change over time due to legal requirements such as the implementation of International Financial Reporting Standards. In addition, firm-level disclosure scores are often available for only a limited number of firms

from a particular period which further reduces the power of tests (Doupnik and Tsakumis 2004; Hope et al. 2008). By examining the relation between board ethics and auditor choice, instead of disclosure levels, we can test the role of board ethics on auditor choice using a large number of recent firm-level observations from around the world. As such, our study extends and complements the accounting literature that examines the association between corporate governance and firms' auditor choice decision.

Since board ethical values have been shown to influence management behaviour and given that auditing can play an important role in resolving agency conflicts (Schneider 1987; Fogarty's 1992; Roy 1998; Borkowski and Ugras 1998; MacDaniel et al. 2001; and Elias 2002), we hypothesize that managers' auditor choices relate to the strength of board ethical values. We construct a novel measure of board ethical values based on the World Economic Forum (2009) corporate ethics factors and employ a large sample of 132,853 firm-year observations from 46 countries. We find that firms are more likely to hire a Big 5/4[1] auditor if they operate in high board ethical value environments.

We also examine whether the effect of board ethical values on firms' auditor choice is enhanced if the board is larger. As the body that governs the firm, the board of directors' has a fiduciary duty "to ensure that a company is run in the ling-term interests of the owners, the shareholders" (Monks and Minow 2004). The board fulfils two functions: monitoring management and providing expert advice. Both functions imply that the board plays a role in the auditor choice decision (MacAvoy and Millstein 1999). As a firm's operations become more geographically dispersed, local managers' corporate ethical values are more likely to be influenced by a variety of

[1] Hereafter 'Big 4'.

factors (board size, board independence, non-local managers, foreign governments and regulations, greater shareholder base, and foreign lenders). Our evidence shows that the positive association between board ethics and auditor choice is mitigated by the firms' board size. Our results are robust to controlling for both country-level factors (e.g. investor protection and capital market development) and a number of firm-level factors.

This study contributes to the literature in several ways. Most importantly, this is the first study to relate board ethics values to firms' auditor choice. Since our sample is (unusually) large both in terms of number of firms and countries covered, our results are representative of a large number of firms and many countries around the world. Furthermore, as our empirical tests control for other institutional factors (e.g. investor protection) and we still find a strong association between the board ethics dimension of corporate ethics and firms' auditor size, we conclude that the effects of corporate ethics on management's audit quality choice is not subsumed by other factors discussed in the literature (e.g. related to the investor protection). Finally, this study contributes to the literature on determinants of auditor choice by identifying board ethics as an important country-level determinant.

The rest of the paper is organized as follows. Section 2 begins with a theoretical framework that outlines the expected influences on the auditor choice decision. Then, our hypotheses are developed on the basis of this conceptual framework. Section 3 describes the measures for the dependent, independent and control variables and the sample selection procedure. Section 4 presents our empirical results. Section 5 provides the conclusion.

2. Theoretical Framework and hypothesis development

A code of ethics outlines a set of fundamental principles. These principles can be used both as the basis for operational requirements (things one must do) and operational prohibitions (things one must not do). Typically, a code of ethics is founded on a set of core principles or values and is not designed for expedience.[2] Those subject to the code are expected to understand, internalize, and apply the examples in situations the code does not specifically address. Organizations expect that the principles, once communicated and illustrated, will apply in every case, and that failure to apply the principles can be a cause for disciplinary action.

Regulators internationally and a number of academic studies (Verschoor 1998; Webley and Moore 2003) have suggested that a commitment by corporate management to follow an ethical code of conduct confers a variety of benefits for their decision making processes. For example, Verschoor (1998) found that large public companies that were publicly committed to following a code of ethical corporate conduct as part of their internal control strategy, had higher performance in both financial and non-financial terms.

A code of ethics and ethical values are important elements of the internal control process of public companies (Statement of Auditing Standards (SAS) No. 78).[3] The failure of a company (and its senior management) to observe the values published in its code of ethics is not, in itself, a violation of the federal securities laws. However, the recent SEC actions may trigger the requirement to disclose the fundamental business values by which the senior management of companies operate. More importantly, failure to observe the values set forth in the code may lead to

[2] In contrast to a code of ethics, a code of conduct usually lists required behaviours, the violation of which would result in disciplinary action.

[3] Statement of Auditing Standards (SAS) No. 78, issued by the AICPA Auditing Standards Board, requires external auditors to perform procedures to understand a company's internal control environment, including integrity and ethical values. The Statement notes that the culture of an organization, including its ethical values, can affect the strength of all other internal controls.

violations of the SEC law (Pitman and Navran 2003). The effectiveness of an ethics program and the culture of an organization should be a matter of concern to the Board of Directors. In a widely-cited decision, the Delaware Chancery Court has suggested that directors who fail to assure that their companies have effective compliance programs may have violated their fiduciary duties (Del. Ch. 1996). SEC Chairman Donaldson stated that "the most important thing that a Board of Directors should do is to determine the elements that must be embedded in the company's moral DNA . It should be the foundation on which the board builds a corporate culture based on a philosophy of high ethical standards and accountability." (SEC Chairman, William H. Donaldson, 2003).

The demand for auditing arises from the auditor's monitoring role in the principle-agent relationship. An agency relationship is a contract under which one or more principals engage an agent to perform some services on the principal's behalf and delegate some decision-making authority to the agent (Jensen and Meckling 1976). Because principals cannot directly monitor agents behaviour, agents have the incentives and opportunity to engage in activities that benefit the agent at the expense of principles. In order to minimize such divergences, the principal can establish monitoring systems. The financial statement audit is a monitoring mechanism that helps reduce information asymmetry and protects the interest of principals, specifically, stockholders, by providing reasonable assurance that management financial statements are free from material misstatements (Watts and Zimmerman 1986, Dang 2008; Hope et al. 2008). However the effectiveness of the audit varies with the quality of the auditor (Becker et al. 1998).

Following DeAngelo's (1981) argument that the size of audit firms is positively associated with audit quality, many studies use size (vs. other) as the audit quality proxy. Many audit quality studies indicate that when audit firm size is used as an indicator of audit quality, higher audit quality is associated with less material omissions or misstatements in the financial statements.

External audits play a vital role in financial reporting credibility by providing an opinion whether the financial statements confirm with generally accepted accounting principles present a true and fair view (Hope et al. 2008; Francis and Wang 2008; Abdel-Khalik and Solomon 1988). The ability to detect material error in the financial statement is a function of auditor competence, while the propensity to correct or reveal the material error is a function of auditor independence from the client (Khurana and Raman 2004).

Auditing is a valuable form of monitoring used by firms to reduce agency costs with debt holders and shareholders (Jensen and Meckling 1976; Watts and Zimmerman 1986; Hope et al. 2008). However, not all audit firms have the same level of knowledge and expertise and hence demand for auditing varies based on the quality of the auditors. It is assumed that there is some kind of observable economic effect, which results from the employment of an audit firm with an average reputation.

DeAngelo (1981) notes that, in order to assess audit quality, readers of the financial statements will have to make three judgements: (i) whether the amount and nature of audit work undertaken is appropriate for the particular client company; (ii) how technically competent the audit staff are to undertake the work properly; and (iii) how independent the audit firm is and hence how likely it is to report any unadjusted errors or omissions that it finds. To make these judgements the readers needs to see the audit working papers and to interview the key personnel involved in the audit

(Moizer 1997). Since this is impossible, an indirect way of assessing audit quality is whether auditors have been sued for failing to detect and/or report material misstatements. Thus, high quality auditors will be less willing to accept questionable accounting practices because if they do so, and later an audit failure is suspected, their reputational capital will suffer.

Consistent with the above arguments, Beatty (1989) argues that the Big 4 have sought to differentiate themselves from other auditors by investing more in reputational capital and are viewed as providing higher-quality audits based on their perceived competence and independence. Big 4 auditors are perceived to be competent given their heavy spending on auditor training facilities and programs and to be independent by virtue of their size and large portfolio of clients.

DeAngelo (1981) and Datar et al. (1991) further argue that large and more prestigious public accounting firms concerned about protecting their investment in reputation capital have greater incentives than other auditors to supply a high-quality audit. In addition, Craswell et al. (1995) notes that, although all audit firms must comply with minimum professional standards, the largest firms voluntarily invest in higher levels of expertise and have incentives to provide higher-quality audits to protect their reputations. Overall, these studies generally suggest that audit quality is positively related to audit firm size[4].

While managers have an incentive to share information with outsiders and reduce information asymmetry, poor board ethical values might conflict with such incentives. To the auditor, the poor ethical values of a client can translate into higher audit risk as the likelihood of the client withholding material information increases. In

[4] A number of studies document that Big 4 auditors provide higher-quality audits (e.g. that they constrain earnings management and/or have a positive influence on firm disclosure). Please refer to DeFond and Jiambalvo (1993), Craswell et al. (1995), Francis and Krishnan (1999), Reynolds and Francis (2000), Hope (2003b), and Khurana and Raman (2004) for further evidence and references.

view of the prior studies which show an effect of national culture on managerial decisions in various contexts (Ralston et al. 1997; Guiso et al. 2006), we predict that high-quality auditors will be more likely to accept an engagement with a firm in high board ethical values countries where client-specific risk (and thus litigation risk) is likely to be lower (Feltham et al. 1991; Simunic and Stein 1996). Feltham et al. (1991) argue that auditors will not offer audit services to high-risk clients without appropriate compensation. Furthermore, Simunic and Stein (1996) reason that as client-specific risk increases, and with it the risk of auditor litigation, the supply of audit quality may decrease.

Thus, we hypothesize that audit quality relates positively to board ethical values. Since auditor size is associated with audit quality, we expect that managers from high ethical values propensity are more likely to commit to higher-quality audits by choosing a Big 4 auditor. Our first hypothesis (stated in the alternative form) is thus:

H_1: There is a positive association between board ethical values and the choice of a Big 4 audit firm.

We are primarily interested in the overall effect of board ethics on audit quality choice. Thus, H_1 is our main hypothesis. However, numerous studies find that larger boards are more like to engage in good governance because larger boards are more likely to have a great number of quality directors. In this case, high ethical values boards will be more likely to have ethical directors whose influence will increase as the board, and their representation, becomes larger. If it is true that board ethical values affects auditor choice, then the effect of board size should be increasing in the extent to which a particular firm is exposed to the behaviours of board members. For this reason, the likelihood of choosing high quality auditors is positively

associated with the interaction between the level of board ethical values and the size of the board. Our second hypothesis is (stated in the alternative form):

H_2: There is a positive association between the interaction of board ethical values with board size and the choice of a Big 4 audit firm.

In addition to being interesting in its own right, if H_2 is supported by the data, we would argue that empirical support for H_1 would be less likely to be driven by omitted variables. That is, if we observe results consistent with H_2, it would further increase our confidence in the results and conclusions regarding H_1, our main hypothesis.

3. Research Design and Sample selection

To test the effect of board ethics on auditor choice, we regress the Big 4 indicator variable on ETHICS (and a number of control variables). We estimate the following auditor choice regression model to test our first hypothesis:

BIG4 = λ_0 + λ_1 Ethics + λ_2 INV_PRO (or other country- level control variable) + λ_3 SIZE + λ_4 LEV + λ_5 GROWTH + λ_6 CFO + λ_7 LOSS + λ_8 INVREC_TA + λ_9 SHORT + λ_{10} LONG + fixed effects … ..…………………………………………………….… (1)

In Eq. (1), BIG4 is an indicator variable equal to one for a Big 4 auditor, zero otherwise. Thus, the results would support H_1 if the coefficient on ETHICS is positive and significant. In the regression, we control for investor protection (or other country-level factors)[5] as well as eight firm-level determinants of auditor choice based on previous studies (Pierre and Anderson 1984; Simunic and Stein 1987; Copley et al. 1995; Choi and Wong 2007; Hope et al. 2008).

[5] To address the multicollinearity problem arising from the high correlations among country-level variables, we control for each of the five country-level factors one by one.

Following Booth and Schulz (2004), we measure ETHICS by the corporate ethics of firms' index developed by the World Economic Forum (2008). The measure is coded from 1 to 7 with, for example, a value of 1 for the board ethical value index signifying that board ethics of firms in that country are among the world worst's and 7 signifying among the best in the world. From Panel B of Table 3 it can be seen that for example Finland (6.63), Sweden (6.45) Singapore (6.30) and Norway (6.18) have the highest ethics values in our sample.

The inclusion of investor protection (INV_PRO) controls for the possibility that firms in stronger investor protection are more likely to hire a Big 4 auditor (Choi and Wong 2007; Francis and Wang 2008; Hope et al. 2008; Houqe et al. 2009). Specifically, we use the ''Regulatory Quality (REG)" and "Rule of Law (Law)" variables from The World Bank (2006) to proxy for the strength of investor protection in a country.

We further control for several other country-level factors: the level of capital market development, ownership concentration, and level of economic development. The motivation for considering these country factors is that Big 4 auditor choices could be driven by these country level factors rather than the corporate ethics of the board (Francis et al. 2003 & 2008; Hope 2003_a & 2008; Fan and Wong 2005). We use the ratio of the stock market capitalization to gross national product (CAP) from World Economic Forum (2008) to proxy for the level of capital market development. We use the average percentage of common shares owned by the three largest shareholders in the ten largest firms in a given country from La Porta et al. (1998) to measure the overall extent of ownership concentration (OWN) as the proxy for the level of agency costs in that country. Finally, we measure the level of economic development by the gross domestic product per capita (GDP).

The firm-level controls are as follows: firm size, measured as the log of current year total assets (SIZE); the value of current year's short-term accruals (SHORT); the value of current year's long-term accruals (LONG); the current year-end inventory and receivables as a percentage of total assets (INVREC_TA); leverage measured as the current year-end total liabilities over total assets (LEV); an indicator variable that takes the value of one if the firm incurred a loss in the current year, zero otherwise (LOSS); cash flow from operations deflated by lagged total assets(CFO); and the latest year sales growth (GROWTH).

SIZE, SHORT, LONG, and INVREC_TA are included based on Simunic and Stein (1987), Francis et al. (1999), and Hope et al. (2008). These variables are expected to relate to audit complexity and hence the amount of effort an auditor must exert to produce a quality audit, which might be associated with firms' auditor choice. The inclusion of LEV and LOSS are motivated by Pierre and Anderson (1984) and Hope et al. (2008). These two variables relate to auditors' litigation risk because they capture a client's (potential) financial distress, which might affect auditor choice. CFO is included because it captures a firm's need for cash which has been shown to be a determinant of auditor choice (Francis and Wang 2008). GROWTH is included to control for the potential effect of a firm's profitability on auditor choice. In addition, Equation (1) is estimated as a fixed effects model with year-specific dummy variables to control for systematic time period effects and country dummies to provide additional controls for omitted variables that could affect the auditor choice decision. For succinctness, the year and country dummies are not reported in the tables.

[Insert Table 1 here]

To test whether the board size (BOD_SIZE) mitigates the effect of board ethical values, we use the firm's number of directors in the board. We then repeat Eq.

(1) and add both BOD_SIZE and an interaction term between BOD_SIZE and ETHICS (ETHICS*BOD_SIZE). We hypothesize that the coefficient on the interaction term will be positive.

3.1 Sample Selection

The financial statement data was extracted from the OSIRIS database for the period 1998-2007. Following prior research (Francis and Wang 2008; Hope et al. 2008; Daske et al. 2008), we exclude financial services firms such as banks, insurance companies and other financial institutions because of the atypical financial structure. We also exclude utility companies because they are regulated and therefore are likely to differ from other companies operations. We exclude observations where the statements were not audited or where there were missing values for the dependent and independent variables under study. Finally we exclude observations that fall in the top and bottom 1% of firm level control variables, and those with the absolute value of Studentized residuals greater than 3. The trimming procedure produces our sample which consists of 132,853 firms-years for the period 1998-2007. The sample selection process is summarized in Table 2, and details of the sample and variables used in the tests are reported in Table 3.

[Insert Tables 2 and 3 here]

4. Empirical Results

4.1. Descriptive statistics and correlations

We begin by presenting descriptive statistics and pair-wise correlations of the regression variables. Panel A of Table 3 reports the pooled distribution of the firm-level regression variables. The overall mean of BIG4 is 0.53, which indicates that approximately 53% of observations hire a Big 4 (or its predecessor) auditor in our

sample. The mean board size is 8. The mean values of the control variables accord with expectations.

Panel B of Table 3 reports country-level descriptive statistics and the number of observations and firms per country. US firms are most heavily represented in the sample (n = 47,405), followed by firms in Japan (n = 13,840) and South Korea (n = 9949). Nigeria (73), Venezuela (102), Colombia (134), and Kuwait (169) have the lowest number of observations. Given such variation in sample sizes across countries, we conduct a number of sensitivity analyses to address this issue.

Norway has the highest Big 4 share (94%), followed by Finland (90%), Switzerland (90%) and Ireland (90%). China (10%), Egypt (24%), Indonesia (26%), and Philippines (31%) have the lowest Big 4 shares. In terms of the board ethics measures (ETHICS), Finland (6.63), Sweden (6.45), Singapore (6.30), Norway (6.18), and Switzerland (6.17) rank as the most ethical, while Russia (3.26), Venezuela (3.31), Argentina (3.46), Philippines (3.51), China (3.71), and the Brazil (3.77) have the lowest ethical values. For the investor protection variable regulatory quality (REG), Hong Kong (1.95), Singapore (1.85), the UK (1.76), Ireland (1.75), Finland (1.70) and Australia (1.67) have the strongest regulatory quality as per the World Bank (2006) measure, whereas Venezuela (-1.35), Nigeria (-.89), Argentina (-.74), Viet Nam (-.49), and Russia (-.45) have the weakest regulatory quality. On the other hand for the investor protection variable rule of law (LAW), Norway (2.02), Switzerland (1.96), Sweden (1.86) and Finland (1.95) have the highest values while Venezuela (-1.39), Nigeria (-1.27), Pakistan (-.82) and Peru (-.75) have the lowest as per the World Bank (2006) measure. Hong Kong (713.26), Switzerland (280.20), South Africa (240.44) and Singapore (221.54) have the highest scores on the CAP index, while Venezuela (3.14) and Viet Nam (7.15) have the lowest scores. Colombia (68%), Mexico (67%)

and Brazil (63%) have the highest ownership concentration, whereas US (12%), Japan (13%), and the UK (15%), have the lowest ownership concentration.

[Insert Tables 4 here]

Table 4 presents the Pearson correlation coefficients among the regression variables. BIG4 is positively correlated (0.284) with ETHICS as hypothesized (p-value < 0.01 level). This finding provides univariate support for the prediction that firms in high ethical values countries are more likely to choose a Big 4 auditor. Consistent with Choi and Wong (2007), the correlation between BIG4 and investor protection (REG and LAW) is positive and significant. In addition, the correlation between BIG4 and the level of capital market development (CAP), and economic development (GDP) is positive, while the correlation between BIG4 and the level of ownership concentration (OWN) is negative. INV_PRO (REG & LAW) is strongly negatively correlated with ETHICS, suggesting that investors are better protected in high ethical values firms. While the correlations are consistent with H_1, these results should be interpreted cautiously as they do not control for differences in firm characteristics or for country characteristics which may affect firms' auditor choices. Consequently, we now turn to the multivariate tests.

4.2. Multivariate Analysis

Panel A of Table 5 reports the results of the Logit multivariate regression tests based on Eq. (1)[6]. We report six specifications of the regression including each of the country-level control variables in turn. Model 1 employs only firm-level control variables to ensure that any inference related to ETHICS is not induced by correlations with country-level control variables included in the model. Models 2 – 6 add a control for country-level factors, the investor protection variables (REG and

[6] The results are not sensitive to the alternative use of probit or OLS regressions.

LAW), the level of capital market development (CAP), ownership concentration (OWN), and economic development (GDP). All regression specifications include year and country fixed effects. The (pseudo) R square of the models range from 0.3680 to 0.4160. Across all six specifications, ETHICS has a significantly positive coefficient ($p<.01$). In other words, controlling for both firm- and country-level factors, the choice of a Big 4 auditor is positively associated with the extent of board ethical values in the firm's country of domicile.

It is also interesting to note that the effect of board ethical values is not subsumed by INV_PRO, the legal dimension variables, CAP, a measure of the capital market development, OWN, ownership concentration (a proxy of agency costs), or GDP, a measure of the overall economic development of the country. Thus, we show that board ethical values have explanatory power over and above these country- level factors. All the country-level control variables are positively associated with Big 4 auditor choice. With respect to firm-level control variables, SIZE, LEV, CFO, SHORT, and LONG are positively associated with Big 4 auditor choice, while GROWTH, INVREC_TA and LOSS (controlling for ROE) are negatively related to Big 4 auditor choice.

[Insert Table 5 here]

To address concern that the uneven country representation in our sample biases our results towards countries that are more heavily represented, we examine the robustness of our results by excluding several countries which have very high numbers of observations. Panel B of Table 5 shows that our results are robust even when excluding those countries from the regressions. As an additional analysis (for brevity the results are not reported), we reran our analysis using country-weighted Logit regression, where the weight is inversely proportional to the number of

observations per country. The results remain valid. Finally, to ensure that smaller countries with fewer observations do not drive the results, we re-estimated the models for the smaller countries in the sample having 200 or less firm-year observations. The results are similar to the results reported in Tables 5 both in terms of the sign and statistical significance on the test variables of interest. We thus conclude that smaller countries do not drive the results.

In Panel A of Table 6 we show results of tests of whether a firm's board size (BOD_SIZE) moderates the effect of home country board ethical values (H_2). We first note that no inferences from testing H_1 are affected by the control for board size of the firm and ETHICS is significantly related to BIG4 at $p<.01$ in all models.

More importantly, the term for the interaction between ETHICS and BOD_SIZE is positive and significant for all models. In other words, the positive effect of home country board ethical values on the likelihood of hiring a high-quality auditor is further enhanced the larger the firm's board size. This result is consistent with H_2. It also provides further support for H_1, our main hypothesis that board ethics matters. Board ethical values should matter most for firms that are primarily affected by domestic concerns. Panel B of Table 6 indicates that our results are robust even when excluding countries with the largest number of observations.

[Insert Table 6 here]

In sum, these regression tests support our hypotheses that firms with high board ethical values countries are more likely to hire a Big 4 auditor, and that this relation is mitigated by firms' board size.

4.3. Robustness tests

Although we controlled for a number of firm characteristics, we conduct an additional analyses to control for the corporate tax rate in the home country. For example, if a

Russian firm derives most of its revenues from operations in Europe or if the firm is cross-listed on London Stock Exchange, the firm is less likely to be affected by domestic norms–such as the extent of low board ethical values in the country – than other, less internationally-oriented, Russian firms. For this reason, we examine if the relation between ethics and auditor choice is mitigated by the degree of internationalization measured at the country level with the relevant tax rate as the proxy. The results are similar to the results reported in Table 5 both in terms of the sign and statistical significance on the test variables of interest (with Pseudo R^2 for all six models ranging from 0.370 to 0.418) and our conclusions were not affected (for brevity the results are not reported).

Secondly, we explored the effect of measuring ETICS as the rank of the World Economic Forum (2008) scores rather than the raw scores. For example, is the difference between 6.08 and 6.02 twice as great as the difference between 6.05 and 6.02, at least in terms of the effect of ethics on auditor choice? We obtain virtually the same results using ranks as for raw scores (Pseudo R^2 for all six models ranging from 0.316 to 0.418 again, for brevity, the results are not reported).

Initiated by Kaplan's (2001) test of MBA student perceptions of corporate ethics (company-benefiting actions vs personal-benefiting actions) we also measured board ethics as 'individualism', Hofstede's (1980) second cultural dimension. We thus repeat the above tests using this alternative measure of board ethics. Our (unreported) results show that the board ethics measure retains its significance at less than the 0.01 level, alleviating any potential concerns that our results are specific to the choice of measure for the variable ETHICS.

5. Conclusion

In this study, we hypothesize that board ethical values are an important indirect determinant of financial reporting quality through the impact on the firm's choice of auditor. Specifically, we test whether the strength of board ethics in a country positively relates to firms' choice of a high-quality auditor (Big 4 audit firms).

Using a large number of firms from 46 countries and a measure of board ethics based on the World Economic Forum (2008) corporate ethics values, we find strong evidence consistent with this hypothesis: firms with high board ethical values are more likely to hire a Big 4 auditor. We further find that the positive effect of home country board ethical values on the likelihood of hiring a high-quality auditor is mitigated by the extent of the firm's board size. These results are robust to controls for numerous country-level factors, including investor protection and capital market development, and to a number of firm-level determinants of auditor choice. They are also robust to a variety of test specifications and alternative measures for board ethics.

This is the first study to relate board ethics to firms' auditor choice behaviours. Since our sample is (unusually) large both in terms of number of firms and countries covered, our results are representative of a large number of firms around the world. We provide strong evidence in support of the emphasis placed on board ethical values in Sarbanes-Oxley Act 2002 section 406. We conclude that the effect of board ethics on management's auditor choice is not subsumed by other institutional factors examined in the literature (e.g. investor protection).

Finally, our results should be interpreted with the following caveats. First, as is common in this line of research, we test for an association between board ethics and auditor choice, not the causal effect of board ethics on auditor choice. Despite this potential limitation, our results suggest that management's auditor choice behaviour

(and therefore financial reporting quality) relates to the board ethics values of home country, lending support to the basic premise that board ethics influences management behaviour (Baumhart 196; Victor and Cullen 1988; Trevino et al. 1998; Sims and Keenan 1998; Hunt et al. 1989; Kaplan 2001; Valentine et al. 2001 Madison 2002; Vitell et al. 2003; Elias 2004).

References

Abdel-Khalik, A.R., Solomon, I. (Eds.). 1988. Research Opportunities in Auditing: The Second Decade. *AAA Auditing Section*, Sarasota, FL.

Beatty, R.P. 1989. Auditor reputation and the pricing of initial public offerings. *The Accounting Review* 64 (4): 693–709.

Baumhart, R.C. 1961. How ethical are businessmen? *Harvard Business Review* 39 (July/August): 156-7.

Becker, C.L., DeFond, M.L., Jiambalvo, J., Subramanyam, K.R. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1), 1–24.

Borkowski, S.C. and Ugras, Y.J. 1998. Business students and ethics: a meta-analysis. *Journal of Business Ethics* 17: 1117-27.

Booth, P., and Schulz, A. K. – D. 2004. The impact of an ethical environment on managers project evaluation judgements under agency problem conditions. *Accounting, Organizations and Society*, 29: 473-488.

Choi, J.H., Wong, T.J. 2007. Auditors' governance functions and legal environments: An international investigation. *Contemporary Accounting Research* 24 (1): 13–46.

Copley, P.A., Gaver, J.J., Gaver, K.M. 1995. Simultaneous estimation of the supply and demand of differentiated audits: Evidence from the municipal audit market. *Journal of Accounting Research* 33 (1): 137–155.

Doupnik, T.S., Taskumis, G.T. 2004. A critical review of test of Gray's theory of culture relevance and suggestions for future research. *Journal of Accounting Literature* 23: 1-48.

Craswell, A., Francis, J., Taylor, S. 1995. Auditor brand name reputations and industry specializations. *Journal of Accounting and Economics* 20 (December), 297–322.

Datar, S.M., Feltham, G.A., Hughes, J.S. 1991. The role of audits and audit quality in valuing new issues. *Journal of Accounting and Economics* 14 (March), 3–49.

DeAngelo, L. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3: 183-199.

DeFond, M.L., Jiambalvo, J. 1993. Factors related to auditor-client disagreements over income-increasing accounting methods. *Contemporary Accounting Research* 9 (spring): 415–431.

Dye, R. 1993. Discussion: Limiting auditors' liability. *Journal of Economics and Management Strategy* 2 (3): 435–443.

Elias, R.Z. 2002. Determinants of earnings management ethics among accountants. *Journal of Business Ethics* 40: 33-45.

Elias, R.Z. 2004. The impact of corporate ethical values on perceptions of earnings management. *Managerial Auditing Journal19 (1)*: 84-98.

Fan, J., Wong, T. 2005. Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. *Journal of Accounting Research* 43: 37–72.

Feltham, G.A., Hughes, J.S., Simunic, D.A. 1991. Empirical assessment of the impact of auditor quality on the valuation of new issues. *Journal of Accounting and Economics* 14: 375–399.

Francis, J.R., Wilson, E.R. 1988. Auditor changes: A joint test of theories relating to agency costs and auditor differentiation. *The Accounting Review* 63 (October), 663–682.

Francis, J., Maydew, E., Sparks, H. 1999. The role of Big Six auditors in the credible reporting of accruals. *Auditing*: *A Journal of Practice and Theory* 18 (2):17–34.

Francis, J. and Wang. D. 2008. The Joint Effect of Investor Protection and Big 4 Audits on Earnings Quality around the World. *Contemporary Accounting Research 25 (1):1-39.*

Francis, J., Khurana, I., Pereira, R. 2003. The role of accounting and auditing in corporate governance and the development of financial markets around the world. *Asian-Pacific Journal of Accounting and Economics* 10 (June): 1–30.

Fogarty, T.J. 1992. Organizational socialization in accounting firms: a theoretical framework and agenda for future research. *Accounting, Organizations and Society* 17 (2): 129-49.

Guiso, L., Sapienza, P., Zingales, L. 2006. Does culture affect economic outcomes? *Working paper*, University of Rome, Northwestern University, and Harvard University.

Hofstede, G. 1980. *Culture's Consequences: International Differences in Work Related Values*. Sage Publications, Beverly Hills, CA.

Hope, O.-K., Kang, T., Thomas, W.B., Yoo, Y.K. 2008. Culture and Auditor Choice: A test of Secrecy hypothesis. *Journal of Accounting and Public Policy* 27: 357-373.

Hope, O.-K. 2003a. Firm-level disclosures and the relative roles of culture and legal origin. *Journal of International Financial Management and Accounting* 14 (3), 218–248.

Hope, O.-K. 2003b. Disclosure practices, enforcement of accounting standards and analysts' forecast accuracy: *An international study. Journal of Accounting Research* 41 (2), 235–271.

Hope, O.-K., Kang, T., Thomas, W.B., Yoo, Y.K. accepted for publication. Impact of excess auditor remuneration on cost of equity capital around the world. *Journal of Accounting Auditing and Finance.*

Hunt, S.D., Wood, V.R. and Chonko, L.B. 1989. Corporate ethical values and organizational commitment in marketing. *Journal of Marketing* 53 (July): 79-90.

Jaggi, B., Low, P.Y. 2000. Impact of culture, market forces, and legal systems on financial disclosures. *International Journal of Accounting* 35 (4), 495–519.

Jensen, M.C. Meckling, W.H. 1976. Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics* 3, 305–360.

Kaplan, S.E. 2001. Ethically related judgments by observers of earnings management. *Journal of Business Ethics* 32(4): 285-98.

Khurana, I., Raman, K. 2004. Litigation risk and the financial reporting credibility of Big 4 versus Non-Big audits: Evidence from Anglo-American countries. *The Accounting Review* 79 (2): 473–495.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., Vishney, R., 1998. Law and finance. *The Journal of Political Economy* 106 (6): 1113– 1155.

Leuz, C., D. Nanda and P. D. Wyscocki. 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69: 505-527.

MacAvoy, P. W., and Millstein, I, W. 1999. *The Recurrent Crisis in Corporate Governance*. Stanford University Press, Stanford, California

Madison, R.L. 2002. Is failure to teach ethics the causal factor? *Strategic Finance* 84 (6): 63-4.

McDaniel, C., Schoeps, N. and Lincourt, J. 2000. Organizational ethics: perceptions of employees by gender. *Journal of Business Ethics* 33(3): 245-56.

Monks, R. & Minow, N. 2004. *Corporate governance*. Third edition. Blackwell Publishing

Palmrose, Z. 1984. The demand for quality-differentiated audit services in an agency theory setting: An empirical analysis. In: Abdel-Khalik, A.R., Solomon, I. (Eds.). *Proceedings of the Sixth Symposium on Auditing Research.* Illinois Press, Champaign: 229–252.

Pierre St., K., Anderson, J.A. 1984. An analysis of factors associated with lawsuits against public accountants. *The Accounting Review* 59 (2): 242–263.

Pittman, E. L., and *Frank J. Navran, F. J. 2003.* Corporate Ethics and Sarbanes-Oxley, *Wall Street Lawyer* (July).

Ralston, D.A., Holt, D.H., Terpstra, R.H., Yu, K.-C. 1997. The impact of national culture and economic ideology on managerial work values: A study of the United States, Russia, Japan, and China. *Journal of International Business Studies* 28 (spring): 177–207.

Release No. 33-8177 (Jan. 23, 2003), Separate provisions were adopted relating to investment companies. Retrieved November 15, 2009 from the worldwide Web: www.sec.gov/rules/final/33-8177.htm.

Release No. 34-47262 (Jan. 27, 2003). Retrieved November 15, 2009 from the worldwide Web: www.sec.gov/rules/final/34-47262.htm.

Release No. 34-48745 (Nov. 4, 2003) (approving code of ethics requirements for NYSE and NASDAQ listed companies). Retrieved November 15, 2009 from the worldwide Web: www.sec.gov/rules/sro/34-48745.htm.

Remarks before the Economic Club of New York by SEC Chairman William H. Donaldson (May 8, 2003). Retrieved November 15, 2009 from the worldwide Web: www.sec.gov/news/speech/spch050803whd.htm.

Report of Investigation by the Special Investigation Committee of the Board of Directors of Enron Corp (Feb. 1, 2002). Retrieved November 15, 2009 from the worldwide Web: www.nyse.com.

Roy, N. 1998. Accounting troubles: management sets the tone. *Financial Executives* 14: 6-7.

Schneider, B. 1987. The people make the place. *Personnel Psychology* 40 (Fall): 437-53.

Sims, R.L. and Keenan, J.P. 1998.Predictors of external whistle blowing: organizational and intrapersonal variables. *Journal of Business Ethics* 17 (4): 411-21.

Simunic, D., Stein, M.T. 1987. Product Differentiation in Auditing: A Study of Auditor Choice in the Market for Unseasoned New Issues. *The Canadian Certified General Accountants' Research Foundation,* Vancouver, BC.

Simunic, D., Stein, M.T. 1996. The impact of litigation risk on audit pricing: A review of the economic and the evidence. *Auditing: A Journal of Practice and Theory* 15: 119–134.

The World Factbook .2009. *Central Intelligence Agency*, USA.

The Financial Development Report. 2008. *World Economic Forum*, USA.

The World Bank Development Research Group. 2009. *The World Bank*.

Trevino, L.K., Butterfield, K.D. and McCabe, D.L. (1998), "The ethical context in organizations: influences on employee attitudes and behaviours. *Business Ethics Quarterly* 8 (3): 447-76.

Valentine, S., Young, K., Bailey, L., Barhoum, N., LaBure, Glover, N. and Isaac, P. 2001. Expressing organizational dissent: the role of ethical ideology and corporate ethical Values. *Journal of Business Strategies* 18:71-89.

Verschoor, C. 1998. A Study of the Link between a Corporation's Financial Performance and Its Commitment to Ethics. *Journal of Business Ethics* 19: 64 -86.

Victor, B. and Cullen, J. 1988. The organizational bases of ethical work climates. *Administrative Science Quarterly* 33 (1): 101-25.

Vitell, S.J., Bakir, A., Paolillo, J.G.P., Hidalgo, E.R., Al-Khatib, J. and Rawwas, M.Y.A. 2003. Ethical judgments and intentions: a multinational study of marketing professional. *Business Ethics: A European Review* 12 (2):151-71.

Watts, R., Zimmerman, J. 1986. *Positive Accounting Theory*. Prentice Hall, Englewood Cliffs, NJ.

Webley and Moore. 2003. Does Business Ethics Pay? Ethics and Financial Performance. *Working Paper*. Institute of Business Ethics.

Table 1: Descriptions of variables

Variable	Measure	Description	Data Source
Dependent variable			
BIG4	Auditor Quality	Dummy variable with the value of 1 if the firm is audited by one of the Big 4 auditors and otherwise 0.	OSIRIS (2009)
Independent variables			
Investor Protection (INV_PRO)	Regulatory Quality (REG)	Measures the ability of the government to formulate and implement sound policies and regulations and promote private sector development.	The World Bank (2006)
	Rule of Law (LAW)	Measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.	The World Bank (2006)
Capital Market development	Stock market capitalization to GDP (CAP)	Stock market capitalization to GDP index. This indicator is the value of listed shares as a percentage of GDP.	The World Economic Forum (2008)
Ownership	OWN	The average percentage of common shares owned by the	La Porta et al. (1998)

Concentration		three largest shareholders in the 10 largest firms in a given country.	
Economic Development	GDP	Gross domestic product per capita in US dollars	The World Factbook (2009)
Control Variables	SIZE	Log of firm total assets	OSIRIS (2009)
	LEV	Total long-term debt/Total Assets	OSIRIS (2009)
	GROWTH	(Sales in year t – Sales in year t-1) / Sales in year t-1	OSIRIS (2009)
	CFO	Cash flow from operations	OSIRIS (2009)
	INVREC_TA	(Current year inventory + current year Receivable) / Total assets	OSIRIS (2009)
	LOSS	Takes the value 1 if Net income for the period is negative and 0 otherwise.	OSIRIS (2009)
	SHORT	Current Accruals scaled by beginning year total assets	OSIRIS (2009)
	LONG	Long term Accruals scaled by beginning year total assets	OSIRIS (2009)

Table 2
Sample selection

Total number of observations for 1998-2007:	505594
Less: Observations from countries not in the list of the WEF report (2008)	(46298)
Less: Missing values on dependent and independent variables	(292644)
Less: Financial Institution and regulated firms	(20522)
Less: Top and bottom 1% of DACCR accruals	(11107)
Less: Observations with |Studentized residuals|>3	(4425)
Number of observations used in the tests	132853

Table 3
Descriptive Statistics

Panel A : Descriptive statistics for firm-level regression variables

	Mean	Std. Dev.	1st Quartile	Median	3rd Quartile
BIG4	.53	.499	.000	1.00	1.000
BOD_SIZE	8.00	5.598	5.00	8.00	12.00
SIZE	5.1092	.88551	4.4922	5.0923	5.710
LEV	.6017	.25037	.4890	.6432	.7718
SHORT	-.0678	.20902	-.1214	-.0440	.0189
LONG	.0469	.04723	.0169	.0353	.0596
INVREC_TA	.1320	.11832	.0343	.1046	.1948
GROWTH	.2531	.67356	-.0180	.1228	.3129
CFO	.0325	.19752	-.0136	.0561	.1239
LOSS	.31	.462	.000	.0000	1.000

Table 3

Panel B: Summary of country-level variables

Country	No.of obs.	BIG4 (%)	ETHICS	INV_PRO REG	INV_PRO LAW	CAP	GDP	OWN
Australia	3613	59	6.08	1.67	1.81	118.28	38100	.28
Argentina	616	65	3.46	-.74	-.58	29.73	14200	.55
Austria	317	62	6.09	1.53	1.87	48.32	39200	.51
Belgium	629	53	5.40	1.32	1.45	85.53	37500	.62
Brazil	2472	66	3.77	.00	-.48	53.28	10100	.63
Canada	6022	75	5.86	1.53	1.85	123.28	39300	.24
Chile	1867	80	5.46	1.41	1.15	103.50	14900	.38
China	7148	10	3.71	-.19	-.40	n.a	6000	n.a
Colombia	134	33	4.43	.10	-.64	32.13	8900	.68
Czech Republic	364	46	3.95	.95	.73	29.94	26100	n.a
Egypt	1971	24	4.34	-.44	.00	74.58	5400	.62
Finland	639	90	6.63	1.70	1.95	111.15	37200	.24
France	3730	59	5.42	1.12	1.37	91.82	32700	.34
Germany	2751	55	6.15	1.39	1.77	48.37	34800	.50
Hong Kong	876	81	5.82	1.95	1.45	713.26	43800	.54
India	6587	38	4.19	-.15	.17	70.64	2800	.43
Indonesia	1313	26	3.77	-.26	-.82	26.52	3900	.62
Ireland	263	90	5.53	1.75	1.62	60.63	46200	.36
Israel	1107	40	4.88	.91	.69	103.12	28200	.55
Italy	1252	86	4.08	.84	.37	48.42	31000	.60
Japan	13840	73	5.41	1.27	1.40	108.27	34200	.13
Korea South	9949	36	5.16	.70	.72	86.08	26000	.20
Kuwait	169	53	4.72	.51	.75	153.89	57400	n.a
Malaysia	4433	60	5.26	.67	.58	133.89	15300	.52
Mexico	1063	72	4.35	.43	-.49	33.54	14200	.67
Netherlands	848	86	6.15	1.65	1.75	102.90	40300	.31
Nigeria	73	66	3.79	-.89	-1.27	21.33	2300	.45
Norway	870	94	6.18	1.34	2.02	69.04	55200	.31
Pakistan	946	45	4.35	-.39	-.82	33.62	2600	.41
Peru	551	55	3.99	.11	-.75	51.03	8400	.57
Philippines	796	31	3.51	-.06	-.48	43.61	3300	.51
Poland	201	47	4.17	.64	.25	35.52	17300	n.a
Russia	453	56	3.26	-.45	-.91	74.51	15800	n.a
Singapore	2619	71	6.30	1.85	1.82	221.54	52000	.53
Saudi Arabia	397	55	4.43	-.02	.17	136.54	20700	n.a
South Africa	1106	70	4.68	.68	.24	240.44	10000	.52
Spain	753	86	4.87	1.06	1.10	90.04	34600	.50
Sweden	1762	86	6.45	1.44	1.86	125.47	38500	.28
Switzerland	754	90	6.17	1.45	1.96	280.20	40900	.48
Thailand	2018	72	4.14	.37	.03	62.12	8500	.48
Turkey	345	32	4.64	.21	.08	36.52	12000	.50
UAE	189	74	5.30	.80	.67	n.a	40000	n.a
UK	6461	63	5.83	1.76	1.73	139.22	36600	.15
USA	47405	61	5.10	1.47	1.57	135.37	47000	.12
Venezuela	102	88	3.31	-1.35	-1.39	3.14	13500	.49

Viet Nam	419	38	4.03	-.49	-.43	7.15	2800	n.a

BIG4 = dummy variable, = 1 if firm i is audited by a Big 4 auditor in year t, 0 otherwise. **ETHICS** = index of Corporate Ethics (WEF 2008). **INV_PRO** is Investor Protection, measured two ways: (1) **REG** = Regulatory quality index (The World Bank 2006). (2) **LAW** = Rule of Law index (The World Bank 2006). **CAP** = Stock market capitalization to GDP index (WEF 2008). **GDP** = Gross domestic product per capita in US dollars. (The World Factbook 2009). **OWN** = the average percentage of common shares owned by the three largest shareholders in the 10 largest firms in a given country (La Porta et al. 1998). **SIZE** =natural logarithm of total assets in $ thousands for firm i in year t. **LEV**= total liabilities / total assets for firm i in year t. **GROWTH** = sales growth rate, defined as the sales in year t minus sales in t-1 and scaled by sales in year t. **CFO** = operating cash flows for firm i in year t scaled by lagged total assets. **LOSS** = dummy variable, = 1 if firm i reports negative net income in the current year and 0 otherwise. **INVREC_TA =** current year end inventory and receivables as a percentage of total assets. **SHORT =** current year short term accruals. **LONG =** current year long term accruals.

Table 4
Pearson correlation matrix

	BIG4	ETHICS	BOD_SIZE	REG	LAW	CAP	GDP	OWN	ETHICS*BOD_SIZE
ETHICS	.284**	1							
	(<.01)								
BOD_SIZE	.187**	.113**	1						
	(<.01)	(<.01)							
REG	.349**	.802**	.152**	1					
	(<.01)	(<.01)	(<.01)						
LAW	.322**	.851**	.156**	.956**	1				
	(<.01)	(<.01)	(<.01)	(<.01)					
CAP	.169**	.381**	.116**	.470**	.416**	1			
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)				
GDP	.314**	.658**	.166**	.917**	.903**	.437**	1		
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)			
OWN	-.091**	-.319**	-.098**	-.603**	-.665**	-.151**	-.695**	1	
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)		
ETHICS*BOD_SIZE	.234**	.283**	.980**	.283**	.293**	.178**	.274**	-.130**	1
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	

Note: p-values are in parenthesis**.**

BIG4 = dummy variable, = 1 if firm i is audited by a Big 4 auditor in year t, 0 otherwise. **ETHICS** = index of Corporate Ethics (WEF 2008). **BOD_SIZE =** number of directors in the board of a firm. **INV_PRO** is Investor Protection, measured two ways: (1) **REG** = Regulatory quality index (The World Bank 2006). (2) **LAW** = Rule of Law index (The World Bank 2006). **CAP** = Stock market capitalization to GDP index (WEF 2008). **GDP** = Gross domestic product per capita in US dollars. (The World Factbook, 2009). **OWN** = the average percentage of common shares owned by the three largest shareholders in the 10 largest firms in a given country (La Porta et al. 1998).

Table 5
Logit regressions testing the relation between auditor choice (BIG4) and Board Ethics

BIG4 = λ_0 + λ_1 Ethics + λ_2 INV_PRO (or other country- level control variable) + λ_3 SIZE + λ_4 LEV + λ_5 GROWTH + λ_6 CFO + λ_7 LOSS + λ_8 INV_TA + λ_9 SHORT + λ_{10} LONG + Fixed effects

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Panel A : Logit regressions for pooled sample						
ETHICS	**1.043**	**.176**	**.485**	**.672**	**.727**	**1.059**
	(<.01)	**(<.01)**	**(<.01)**	**(<.01)**	**(<.01)**	**(<.01)**
REG		1.183				
		(<.01)				
LAW			.630			
			(<.01)			
CAP				.006		
				(<.01)		
GDP					.000	
					(<.01)	
OWN						1.253
						(<.01)
SIZE	1.421	1.353	1.389	1.420	1.377	1.427
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
LEV	.576	.479	.495	.452	.542	.535
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
GROWTH	-.099	-.099	-.096	-.092	-.099	-.099
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
CFO	.116	.273	.202	.021	.205	-.048
	(.051)	(<.01)	(<.01)	(.728)	(.001)	(.423)
LOSS	-.038	-.104	-.062	-.078	-.063	-.079
	(.088)	(<.01)	(.005)	(<.01)	(.004)	(<.01)
INVREC_TA	-.286	-.450	-.424	-.122	-.382	-.147
	(<.01)	(<.01)	(<.01)	(.082)	(<.01)	(.038)
SHORT	.419	.513	.526	.202	.541	.091
	(<.01)	(<.01)	(<.01)	(.003)	(<.01)	(.192)
LONG	6.753	5.666	6.323	6.567	6.500	5.902
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
Intercept	-13.489	-9.393	-10.912	-11.802	-12.102	-13.941
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
fixed effects	included	included	included	included	included	included
Pseudo R^2	**.396**	**.416**	**.401**	**.370**	**.401**	**.368**
N	**132,853**	**132,853**	**132,853**	**132,853**	**132,853**	**132,853**
	Without USA	**Without UK**	**Without Canada**	**Without India**	**Without Japan**	**Without USA, UK, Canada, India, Japan**
Panel B : Logit regressions for sub-sample excluding selected countries						
ETHICS	**1.020**	**1.060**	**.977**	**.964**	**.999**	**.793**
	(<.01)	**(<.01)**	**(<.01)**	**(<.01)**	**(<.01)**	**(<.01)**
SIZE	1.128	1.404	1.434	1.407	1.523	1.134
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
LEV	.309	.586	.512	.711	.650	.698
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
GROWTH	-.188	-.085	-.130	-.097	-.060	-.160
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)

CFO	.340	.128	.144	.150	.063	.547
	(<.01)	(.035)	(.019)	(.013)	(.311)	(<.01)
LOSS	-.053	-.030	-.076	-.031	.065	.156
	(.051)	(.186)	(.001)	(.170)	(.007)	(<.01)
INVREC_TA	-.383	-.328	-.335	-.195	-.024	.185
	(<.01)	(<.01)	(<.01)	(.005)	(.748)	(.079)
SHORT	.901	.465	.481	.496	.459	1.451
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
LONG	11.393	7.103	6.501	7.028	7.712	16.287
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
Intercept	-11.914	-13.546	-13.323	-13.058	-13.934	-11.430
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
fixed effects	included	included	included	included	included	included
Pseudo R^2	**.353**	**.394**	**.398**	**.364**	**.432**	**.326**

Note: Coefficient p-values are two-tail and based on asymptotic Z-statistic robust to hetroscedasticity and country clustering effects using the method in Rogers (1993). For clarity in presentation the coefficients on year and country dummies have not been reported.

BIG4 = dummy variable, = 1 if firm i is audited by a Big 4 auditor in year t, 0 otherwise. **ETHICS** = index of Corporate Ethics (WEF 2008). **INV_PRO** is Investor Protection, measured two ways: (1) **REG** = Regulatory quality index (The World Bank 2006). (2) **LAW** = Rule of Law index (The World Bank 2006). **CAP** = Stock market capitalization to GDP index (WEF 2008). **GDP** = Gross domestic product per capita in US dollars. (The World Factbook 2009). **OWN** = the average percentage of common shares owned by the three largest shareholders in the 10 largest firms in a given country (La Porta et al. 1998). **SIZE** =natural logarithm of total assets in $ thousands for firm i in year t. **LEV**= total liabilities / total assets for firm i in year t. **GROWTH** = sales growth rate, defined as the sales in year t minus sales in t-1 and scaled by sales in year t. **CFO** = operating cash flows for firm i in year t scaled by lagged total assets. **LOSS** = dummy variable, = 1 if firm i reports negative net income in the current year and 0 otherwise. **INVREC_TA =** current year end inventory and receivables as a percentage of total assets. **SHORT =** current year short term accruals. **LONG =** current year long term accruals.

Table 6

Logit regressions testing interaction between board ethics (Ethics) and Board Size (BOD_SIZE) in explaining auditor choice (BIG4)

BIG4 = λ_0 + λ_1 Ethics + λ_2 BOD_SIZE + + λ_3 Ethics*BOD_SIZE + λ_4 INV_PRO (or other country- level control variable) + λ_5 SIZE + λ_6 LEV + λ_7 GROWTH + λ_8 CFO + λ_9 LOSS + λ_{10} INV_TA + λ_{11} SHORT + λ_{12} LONG + fixed effects

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Panel A : Logit regressions for pooled sample						
ETHICS	**.911**	**.223**	**.403**	**.132**	**.729**	**.479**
	(<.01)	**(<.01)**	**(<.01)**	**(<.01)**	**(<.01)**	**(<.01)**
BOD_SIZE	-.138	-.034	-.132	-.421	-.069	-.432
	(<.01)	(.028)	(<.01)	(<.01)	(<.01)	(<.01)
ETHICS*BOD_SIZE	**.021**	**.001**	**.020**	**.073**	**.008**	**.076**
	(<.01)	**(.710)**	**(<.01)**	**(<.01)**	**(.012)**	**(<.01)**
REG		1.138				
		(<.01)				
LAW			.582			
			(<.01)			
CAP				.006		
				(<.01)		
GDP					.000	
					(<.01)	
OWN						1.277
						(<.01)
SIZE	1.489	1.419	1.456	1.508	1.448	1.519
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
LEV	.612	.512	.538	.508	.579	.576
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
GROWTH	-.101	-.099	-.098	-.090	-.100	-.098
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
CFO	.215	.352	.293	.131	.285	.064
	(<.01)	(<.01)	(<.01)	(.033)	(<.01)	(.302)
LOSS	-.041	-.102	-.063	-.101	-.061	-.107
	(.069)	(<.01)	(.005)	(<.01)	(.007)	(<.01)
INVREC_TA	-.293	-.455	-.423	-.095	-.378	-.128
	(<.01)	(<.01)	(<.01)	(.187)	(<.01)	(.078)
SHORT	.486	.562	.582	.227	.587	.131
	(<.01)	(<.01)	(<.01)	(.001)	(<.01)	(.069)
LONG	6.885	5.820	6.467	6.598	6.657	5.958
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
Intercept	-13.052	-9.823	-.10693	-9.338	-12.305	-11.329
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
fixed effects	included	included	included	included	included	included
Pseudo R^2	**.402**	**.420**	**.407**	**.384**	**.406**	**.383**
N	**132,853**	**132,853**	**132,853**	**132,853**	**132,853**	**132,853**
	Without USA	**Without UK**	**Without Canada**	**Without India**	**Without Japan**	**Without USA, UK, Canada, India, Japan**
Panel B : Logit regressions for sub-sample excluding selected countries						
ETHICS	.875	.945	.946	.944	.729	.847
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
BOD_SIZE	-.190	-.131	-.078	-.063	-.211	-.092

	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
*ETHICS*BOD_SIZE*	.025	.019	.007	.007	.038	.005
	(<.01)	(<.01)	(.019)	(.028)	(<.01)	(.131)
SIZE	1.232	1.478	1.527	1.473	1.555	1.265
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
LEV	.433	.625	.554	.728	.656	.683
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
GROWTH	-.173	-.086	-.128	-.100	-.069	-.162
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
CFO	.495	.236	.254	.233	.140	.582
	(<.01)	(<.01)	(<.01)	(<.01)	(.029)	(<.01)
LOSS	-.035	-.033	-.079	-.033	.058	.139
	(.207)	(.151)	(.001)	(.153)	(.017)	(<.01)
INVREC_TA	-.351	-.339	-.346	-.214	-.043	.007
	(<.01)	(<.01)	(<.01)	(.003)	(.570)	(.951)
SHORT	.955	.539	.546	.554	.531	1.378
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
LONG	11.489	7.263	6.579	7.161	7.880	15.612
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
Intercept	-11.424	-13.222	-13.480	-13.179	-12.689	-11.929
	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)	(<.01)
fixed effects	included	included	included	included	Included	included
Pseudo R^2	**.369**	**.400**	**.406**	**.369**	**.437**	**.340**

Note: Coefficient p-values are two-tail and based on asymptotic Z-statistic robust to hetroscedasticity and country clustering effects using the method in Rogers (1993). For clarity in presentation the coefficients on year and country dummies have not been reported.

BIG4 = dummy variable, = 1 if firm i is audited by a Big 4 auditor in year t, 0 otherwise. **ETHICS** = index of Corporate Ethics (WEF 2008). **BOD_SIZE =** number of directors in the board of a firm. **INV_PRO** is Investor Protection, measured two ways: (1) **REG** = Regulatory quality index (The World Bank 2006). (2) **LAW** = Rule of Law index (The World Bank 2006). **CAP** = Stock market capitalization to GDP index (WEF 2008). **GDP** = Gross domestic product per capita in US dollars. (The World Factbook 2009). **OWN** = the average percentage of common shares owned by the three largest shareholders in the 10 largest firms in a given country (La Porta et al. 1998). **SIZE** =natural logarithm of total assets in $ thousands for firm i in year t. **LEV**= total liabilities / total assets for firm i in year t. **GROWTH** = sales growth rate, defined as the sales in year t minus sales in t-1 and scaled by sales in year t. **CFO** = operating cash flows for firm i in year t scaled by lagged total assets. **LOSS** = dummy variable, = 1 if firm i reports negative net income in the current year and 0 otherwise. **INVREC_TA =** current year end inventory and receivables as a percentage of total assets. **SHORT =** current year short term accruals. **LONG =** current year long term accruals.