Informal Institutions and Managers' Earnings Management Choices: Evidence from IFRS-Adopting Countries

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Abstract

In this study, we investigate the role of informal institutions (religiosity and culture) in determining managers' choices of earnings management methods (accruals vs. real activities), after controlling for formal institutions (investor protection, enforcement quality and equity market development). Using an ethical perspective, we find that managers tend to choose an earnings management strategy that meets the prevailing social (informal) norms of the environment where the firm is headquartered. Specifically, our analysis shows that firms domiciled in countries with strong religious adherence and high-power-distance cultures prefer to manage their earnings 'upwards' through real activities rather than accruals. Overall, our results suggest that informal institutions determine managers' earnings management choices at least as strongly as formal institutions do. It would therefore be misleading to analyze managers' choices in managing earnings solely from the formal rules perspective without considering the role of informal constraints or vice versa.

Keywords: formal institution, informal institution, earnings management, IFRS

1. Introduction

In this paper, we examine the impact of informal institutions on managers' earnings management choices after controlling for the impact of formal institutions across IFRS-adopting nations. Prior political science literature suggests that applying the same formal rules in different societies may not necessarily lead to similar outcomes due to the impact of informal rules (North, 1990). Consistent with this view, Helmke and Levitsky (2004) argue that when informal institutions are circumvented or ignored, formal constraints become ineffective and only exist on paper. Therefore, an analysis of institutional factors that ignores or downplays informal institutions tends to be incomplete and needs to be refined to include informal institutions (Helmke and Levitsky, 2004). This indicates that informal institutions are as important as formal institutions, because informal institutions cannot be changed by the stroke of a pen and "are not typically amenable to deliberate human manipulation" (North, 2005, p. 50). Applying this logic to international accounting, informal institutions' effects on accounting practices across countries cannot be isolated from the effects of formal institutions.

Existing work in the international accounting literature, however, has not applied a systematic method – either empirically or conceptually – to identify the salient institutional factors contributing to cross-country differences in accounting practices; rather, they have been dealt with on an *ad hoc* basis (Schweikart, 1985; Perera and Baydoun, 2007). Nobes (1998) reviewed the literature and confirmed that multiple theoretical models have been proposed in order to identify and classify the factors determining accounting differences at the international level. As Nobes explicates, many of these factors are interrelated, and, in most studies, only a few are included at a time, in part due to the lack of a theoretical measurement model and in part due to the empirical problem associated with multicollinearity (see, for example, Houqe et al., 2012).

Due to (i) the lack of agreement among accounting scholars on the most important factors that influence accounting practices at the international level; (ii) the lack of 'standardized' conceptual definitions of institutions; and (iii) the lack of a theoretical measurement model for these institutions, we establish measurement instruments that capture differences between countries in relation to their formal institutional settings, namely: *Investor Protection, Enforcement Quality* and *Equity Market Development*, and then empirically assess their reliability and validity. After controlling for the impact of these formal institutions, we investigate the impact of informal institutions (culture and religiosity) on accruals and real earnings management using a large sample of firms drawn from 22 IFRS-adopting countries[2]. The need to consider both accruals-based and real earnings management is motivated by the findings of Graham et al. (2005), who demonstrated that firms employ both techniques in managing earnings, with a preference for real earnings management after the passage of the Sarbanes-Oxley Act (SOA). Zang (2012) observed a possible substitution effect between the two methods. The trade-off between the two methods can be explained by two possible hypotheses: the litigation hypothesis and the ethical perspective hypothesis.

Under the litigation hypothesis, managers would prefer real earnings management over accruals-based earnings management. This is because (i) real earnings management is more difficult for shareholders to detect and makes it more difficult for them to litigate and sue managers (Graham et al., 2005; Cohen et al., 2008); and (ii) managers are less scrutinized by auditors and regulators when using real earnings management (Cohen and Zarowin, 2010), as such methods do not fall within the scope of an audit. The litigation perspective offers a partial explanation of why managers choose a particular earnings management method (i.e. accruals vs. real); the ethical perspective, however, provides a complementary perspective that explains managers' choices of earnings management methods. Employing Kohlberg's (1969) theory of cognitive moral development (CMD), Rutledge and Karim (1999) find that managers' economic behaviors are driven not only by their self-interest but also by ethical/moral considerations. Consistent with this line of reasoning, religious norms and cultural values are likely to play an important role in determining managers' economic decisions by creating a moral climate, as suggested by Welch et al. (1991), which exerts a moral deterrent effect on deviant behaviors (e.g. cheating on one's tax returns). In the

[2] To minimize any confounding effects that could occur as a result of applying different accounting standards, we restrict our sample to countries in which IFRS adoption has been made mandatory.

context of earnings management, managers perceive real earnings management as more ethical than accruals earnings management (Bruns and Merchant, 1990), and therefore they switch to real earnings management when they are socially or ethically pressured.

Our results show that the significance and the sign of some institutions change when both formal and informal institutions are included in the same regression model compared to the results when regressed separately. This indicates the limitations of using only one type of institution in the analysis. We find that accruals earnings management is lower but real earnings management is higher in countries with higher power distance and religiosity. Extant evidence provides explanations regarding why we observe this. Waldman et al. (2006) argue that in large-power-distance countries, there is social pressure on managers to be less opportunistic, thereby reducing the likelihood of them engaging in unethical earnings management practices. Walker et al. (2012) find that the managers of firms headquartered in more-religious communities tend not to engage in ethically questionable practices, to avoid possible social sanctions. Interestingly, among the informal institutions, we find that *Religiosity* is the most economically important factor influencing earnings management across countries. The additional analysis on the direction of earnings management also reveals interesting insights. We find that lower accruals-based earnings management, which is associated with higher religiosity and higher power distance, tends not to be only less income increasing but also more income decreasing, suggesting that social pressures may suppress income-increasing behavior via accruals.

Our study extends existing cross-country accounting research (e.g. Ahmed et al., 2013;Bonetti et al., 2016; Doukakis, 2014; Enomoto et al., 2015; Houqe et al., 2012; Ipino and Parbonetti, 2017) by investigating the relationship between informal institutions (religiosity and culture) and both accruals and real earnings management after controlling for the effect of formal institutions. More precisely, our study extends the works of Kanagaretnam et al. (2011) and Kanagaretnam et al. (2015), who have examined the impact of culture/religion on earnings management using a sample of banks only, by employing a sample of non-financial firms drawn from 22 IFRS-adopting countries.

The remainder of the paper is organized in four sections. The following section, Section 2, presents the literature review and hypothesis development. Section 3 describes the data and research design, followed by Section 4, which provides the findings and discussion. The conclusions and limitations of this study are presented in Section 5.

2. Literature review and hypothesis development

Much of the literature concerning the association between institutions and earnings management in the context of mandatory IFRS adoption focuses on the effect of IFRS adoption on accruals earnings management (e.g. Houqe et al., 2012) or on both accruals and real earnings management (e.g. Doukakis, 2014; Ipino and Parbonetti, 2017). These studies fail, however, to consider the impact of countries' informal institutions and thus at best offer only a partial explanation of cross-country variations in earnings management within the context of mandatory IFRS adoption. Helmke and Levitsky (2004) suggest that without 'simultaneous' consideration of formal and informal institutions, any institutional analysis is incomplete. This is because while formal institutions are more visible and explicit (and are often written), informal institutions (which are often unwritten) also play an important role in constraining and enabling behavior. Informal institutions should not, therefore, be overlooked in any future research. Helmke and Levitsky (2004) define informal institutions as "socially shared rules, usually unwritten, that are created, communicated, and enforced outside of officially sanctioned channels" (p. 727). Examples of informal institutions include traditions, customs, religion and moral values.

While Kanagaretnam et al. (2011) and Kanagaretnam et al. (2015) use a sample of banks to investigate culture/religion and earnings management, our study employs a sample of non-financial companies in 22 IFRS-adopting countries. More specifically, we examine the association between the countries' informal institutions and earnings management after controlling for the impact of formal institutions. Our study also builds a theoretical link between informal institutions (culture and religion) and earnings management. The task of outlining a theoretically plausible relationship between earnings management and cultural dimensions is difficult for at least two reasons: (i) the existence of two opposing viewpoints (both have theory and evidence in their favor) concerning the impact that culture may have on earnings management (see, for

example, Doupnik, 2008; Zhang et al., 2013); and (ii) the difficulty in isolating the effects of culture from other institutions (Han et al., 2010). The difficulty is made more acute by the (unobserved) heterogeneity across countries and the small number of observations available for each country.

Culture refers to the social norms and values in a group or society that people belong to. According to Hofstede et al. (2010), culture is " the collective programming of the mind that distinguishes the members of one group or category of people from others"(p. 6). A number of studies have examined the relationship between culture and earnings management and have found evidence of an association between cultural dimensions and earnings management (Desender et al., 2011; Doupnik, 2008; Guan et al., 2005; Nabar and Boonlert-U-Thai, 2007; Zhang et al., 2013). However, their findings must be interpreted with caution because the effect of culture on earnings management is conditional on the level of regulation and monitoring in a country (Kanagaretnam et al., 2011). Culture may therefore not be as important in influencing earnings management practices on its own, without considering the impacts of other institutional factors. For instance, Waldman et al. (2006) argue that in situations of low power distance, institutional pressures may push managers to be good stewards of the firm. This is consistent with Stulz and Williamson's (2003) argument that when investigating the differences in the degree of investor protection across countries, the effect of culture cannot be ignored, especially because its impact cannot be isolated from other institutions (Han et al., 2010). The cultural elements of interest for the analysis in this study are individualism and power distance because of their close association with ethical decision-making in business (Goodwin et al., 2000; Smith and Hume, 2005; Waldman et al., 2006).

Prior research suggests that there is a link between culture (including religion) and ethical beliefs (e.g. Vitell et al., 1993; Smith and Hume, 2005). For the purpose of this study, we use the ethical perspective to better understand why managers engage more or less in earnings management activities given the fact that ethical considerations may constrain their economic behavior, as CMD theory suggests (Rutledge and Karim, 1999). It is worth noting here that managers consider managing earnings via operational actions as more ethical than employing accounting procedures (Bruns and Merchant, 1990). In support of this view, Parfet (2000) refers to "operational earnings management" as "good earnings management". He adds: "achieving stable and predictable results and positive earnings trends through good planning and operational responsiveness is not illegal or unethical. It is a mark of skill and excellence that the market seeks and rewards" (p. 485).

Using the ethical perspective, it would be useful to examine the effects of unwritten rules, religion and culture on earnings management after controlling for formal institutions to develop a better understanding of managers' choices of earnings management across countries adopting IFRS.

2.1. Religiosity

There have been many studies (e.g. Barnett et al., 1996; Iannaccone, 1998; Lehrer, 2004; Parboteeah et al., 2008; Sunstein, 1996; Terpstra et al., 1993; Walker et al., 2012; Weaver and Agle, 2002; Zahn, 1970) on the impact of religion on a society's norms and values, as well as its impact on the economic behavior of the members of a society. The influence of religion has also been examined in the financial accounting literature (e.g. Conroy and Emerson, 2004; McGuire et al., 2012). In spite of a number of studies (e.g. Longenecker et al., 2004) documenting the relationship between religiosity and lower acceptance of 'unethical' accounting and auditing practices, only recently has the academic literature begun to explore the association between contextual religiosity and earnings management in a cross-country setting (e.g. Kanagaretnam et al., 2015).

Religious beliefs are an important source shaping a person's moral or ethical behavior (Vitell et al., 1993). Drawing on social norm theories, managers' decision-making processes – regardless of their affinity to religion – are influenced by the religious social norms of the community where those managers live and operate (Sunstein, 1996; Cialdini and Goldstein, 2004). It is suggested that deviations from the mainstream religion's norms or the defiance of God's laws and commandments generate high levels of irritability or psychological discomfort, which in turn motivates adherents to change their behavior or

to conform to religious role expectations (Sunstein, 1996; Weaver and Agle, 2002). Therefore, all else being equal, the more salient the religious norms in a society, the more likely a person's behavior is to be guided by the religious expectations associated with the roles they are destined to play in society (Kennedy and Lawton, 1998; Walker et al., 2012).

This argument is in line with the 'moral communities' hypothesis, which proposes that higher levels of religiosity in a community (i.e. moral communities) are more influential in promoting conformity to the community's moral order (Stark et al., 1980; 1982) by means of creating a moral climate that exerts a moral deterrent effect on individual deviance (Welch et al., 1991). In this regard, Welch et al. (1991) examine the role of the intensity of community religiosity in inhibiting deviant behaviors (cheating on one's tax returns, excessive drinking and unauthorized use of an employer's equipment for personal gain) and find evidence in support of the deviance-inhibiting effect of community-level religiosity. Stavrova et al. (2013) suggest that religiosity is a 'social' control mechanism through which societal members, on the one hand, reward those who are conforming to the norms of the religious denomination to which they belong through social recognition and respect, and, on the other hand, sanction those who are violating these norms through open criticism and the withdrawal of social support (Hechter and Opp, 2001; Horne, 2009).

Applying this intuition to the practice of earnings management, managers of firms headquartered in religious communities tend not to engage in ethically questionable scenarios (Walker et al., 2012), such as accruals manipulation, in an attempt to avoid any social sanctions associated with non-adherence to the religious norms in that society. This is particularly the case because a risk-averse attitude is more pervasive in areas with higher religious adherence (Miller and Hoffmann, 1995; Diaz, 2000), wherein firm managers are less subject to class-action lawsuits (McGuire et al., 2012).

A number of studies have examined the association between religious adherence and engagement with earnings management activities. One of the earliest studies to investigate the influence of religiosity on managers' methods of managing earnings was completed by McGuire et al. (2012). The authors provide empirical evidence suggesting that firms headquartered in areas with strong religious social norms have low incidences of financial reporting irregularities. They also find evidence that while accruals manipulation is less prevalent, real earnings management is more prevalent among firms located in more-religious areas. Based on this evidence, the authors conclude that in attempting to meet earnings targets, the managers of firms in areas of high religious adherence have a greater propensity to manage reported earnings (upward) through real activities than accruals manipulation, especially because the former is viewed as more ethical (Bruns and Merchant, 1990) and cannot be second-guessed by external auditors, therefore being less risky (Graham et al., 2005).

Similarly, Dyreng et al. (2012) investigate the impact of the level of religious adherence on managerial accrual choices and find evidence in support of the dominant role of the religious norm of honesty, rather than the norm of risk aversion, in curbing the intentional misreporting or misrepresentation of accounting information (as proxied by financial statement restatement). Specifically, they find that in attempting to avoid financial restatements stemming from overstated assets/revenues or understated liabilities/expenses, the managers of firms headquartered in areas with high religious adherence are less likely to bias their accrual estimates upward (i.e. an income-decreasing bias is more prevalent than an income-increasing bias) and instead report accruals that are more reflective of the firm's economic fundamentals (i.e. smaller deviations from expected accruals and better mapping into cash flows over time). Using an international sample of banks, Kanagaretnam et al. (2015) investigate the impact of religious level in the country surrounding a bank's headquarters on earnings management and find that banks in countries with higher religiosity scores have lower levels of income-increasing earnings management behavior.

On the basis of the theoretical arguments and empirical evidence laid out in this section, the following two hypotheses are proposed:

H1a: *Accruals earnings management is less pronounced in countries with high levels of religiosity.*

H1b: *Real earnings management is greater in countries with high levels of religiosity.*

2.2. Power distance

High power distance refers to societies wherein subordinate members accept the unequal distribution of power or authority (Hofstede, 1984), which is centralized or concentrated in the hands of superior members, who can make decisions autocratically (Clugston et al., 2000). In societies with high power distance, subordinates are assumed to obey without questioning their superiors (Javidan et al., 2006) and in return expect their interests to be protected by their superiors (Vitell et al., 1993).

According to Hofstede et al. (2010), "In large-power-distance countries, accounting systems will be frequently used to justify the decisions of the top power holder(s): they are seen as the power holder's tool to present the desired image, and figures will be twisted to this end" (p. 319). This could be true not only because managers in high-power-distance countries are more concerned with their own interests than with the interests of stakeholders (Waldman et al., 2006) but also because subordinates are assumed to be more obedient to their superiors, and therefore less likely to resist managers' engagement in questionable or unethical accounting techniques (Trevino, 1986; Tian and Peterson, 2016). This should, in turn, result in managers having a greater ability to "more easily influence financial reporting choices for opportunistic reasons" (Kanagaretnam et al., 2011, p. 856). In view of this argument, one would therefore expect managers from high-power-distance orientations to be more inclined to manage or manipulate accounting numbers in an attempt to maximize their own utility (implying a positive correlation between earnings management and power distance).

The above argument, however, does not consider that higher power distance gives rise to an obligation towards society, which in turn puts pressure on managers in such societies to be good agents of their firms and to look out for the interests of the business owners and other stakeholders when making decisions (Waldman et al., 2006). It has also been suggested that in large-power-distance countries, there is greater emphasis on superiors, and more-formal norms are put in place to protect subordinates/outsiders from abuse by their superiors/insiders, who are able to make decisions unilaterally without consulting their subordinates (Vitell et al., 1993). Therefore, all else being equal, managers in countries with large power distance will be "less likely to engage in the practice of earnings management that would present an unrealistic portrayal of the company in an attempt to seem better than others" (Geiger et al., 2006, p. 182). In light of all the above discussions, it thus seems reasonable to expect that in countries where cultural value norms are more prominent, managers will feel an obligation to choose accounting techniques that are ethically acceptable or legitimate (e.g. real earnings management).

Given the solid support for both sides of the issue, we refrain from making a prediction about the direction of the relationship between power distance and earnings management. Therefore, the following hypothesis is developed:

H2: *There is an association between the level of power distance in a country and earnings management.*

2.3. Individualism

Under individualism, societal members are mainly concerned with their own interests and the interests of their immediate families; in contrast, under collectivism, societal members belong to one or more groups (e.g. extended families or clans) from which they cannot detach themselves (Hofstede, 1984).

In individualistic societies, managers tend to pursue their own self-interests, even at the expense of the needs of other stakeholders (Han et al., 2010), and therefore are likely to manage earnings to either meet or beat benchmarks. As Kanagaretnam et al. (2011) suggest, in highly individualistic societies where concern for other stakeholders' welfare is low, managers tend to engage more in risk-taking activities in an attempt to maximize their own utility. In contrast, in societies scoring low on individualism, members (including shareholders, as well as other stakeholders) expect their managers to look after them from cradle to grave, much like an extended family, and to protect their interests (Hofstede, 1980). That is, in collectivistic societies, the interests of other stakeholder groups are of inherent concern in managerial decision-making – managers feel responsible towards stakeholders. According to Waldman et al. (2006), managers in cultures characterized by higher collectivistic values "have duties and obligations to the greater collective that outweigh personal concerns" (p. 826). In

view of this argument, one would therefore expect that in the pursuit of their self-interest, managers in individualistic countries are more likely to engage in earnings management activities.

Despite the wealth of empirical evidence supporting the above argument, there is also theoretical reason, as well as empirical evidence, opposing this argument. By adhering to legal rules, the members of a society feel that their interests are protected. Managers in individualistic societies are, however, more likely to comply with the legal rules and laws than their counterparts in collectivistic societies are, wherein their interests are "protected by extended families with which they exchange loyalty" (Zhang et al., 2013, p. 657). In contrast, managers in collectivistic societies are likely to follow the rules and norms shared within the group they belong to, rather than following social norms, such as honesty, integrity and law obedience (Zhang et al., 2013). In support of this argument, Smith and Hume (2005) provide evidence suggesting that accountants from collectivistic countries are more likely to engage in 'questionable' behavior. Following the logic of this argument, one would expect that managers in collectivistic countries are less obedient to the legal norms and therefore more likely to engage in (unethical) earnings management activities.

Based on the opposing viewpoints and conflicting evidence with regard to the role of individualism in earnings management practices, this study investigates the association between accruals/real earnings management and individualism but makes no explicit prediction about the direction of the relationship. In light of the above discussions, the following hypothesis is developed:

H3: *There is an association between the degree of individualism in a country and earnings management.*

3. Data and research design

3.1. Models

To test our hypotheses, we estimate the following regressions focusing on informal institutions, namely religiosity, power distance and individualism:[3]

$$\mathbf{DACC_{i,t}} = \boldsymbol{\lambda_0} + \boldsymbol{\lambda_1}\mathbf{Religiosity} + \boldsymbol{\lambda_2}\mathbf{Power\ Distance} + \boldsymbol{\lambda_3}\mathbf{Individualism} + \boldsymbol{\lambda_4}\mathbf{Investor\ Protection} + \boldsymbol{\lambda_5}\mathbf{Enforcement\ Quality} + \boldsymbol{\lambda_6}\mathbf{Market\ Development} + \boldsymbol{\lambda_7}\mathbf{Firm\ Level\ Varaibles_{i,t}} + \mathbf{fixed\ effects} + \boldsymbol{\varepsilon_{i,t}} \quad (\mathbf{1})$$

$$\mathbf{ACFO_{i,t}} = \boldsymbol{\gamma_0} + \boldsymbol{\gamma_1}\mathbf{Religiosity} + \boldsymbol{\gamma_2}\mathbf{Power\ Distance} + \boldsymbol{\gamma_3}\mathbf{Individualism} + \boldsymbol{\gamma_4}\mathbf{Investor\ Protection} + \boldsymbol{\gamma_5}\mathbf{Enforcement\ Quality} + \boldsymbol{\gamma_6}\mathbf{Market\ Development} + \boldsymbol{\gamma_7}\mathbf{Firm\ Level\ Varaibles_{i,t}} + \mathbf{fixed\ effects} + \boldsymbol{\varepsilon_{i,t}} \quad (\mathbf{2})$$

3.1.1. Earnings management variables

$\mathbf{DACC_{i,t}}$ in model 1 represents the discretionary accruals – our accruals earnings management proxy. We obtain the discretionary accruals by estimating the modified Jones (1991) model for every industry in each country and year:

$$\frac{\mathrm{ACC_{i,t}}}{\mathrm{A_{i,t-1}}} = \mathrm{a_0} + \mathrm{a_1}\frac{1}{\mathrm{A_{i,t-1}}} + \mathrm{a_2}\frac{(\Delta \mathrm{REV_{i,t}})}{\mathrm{A_{i,t-1}}} + \mathrm{a_3}\frac{\mathrm{PPE_{i,t}}}{\mathrm{A_{i,t-1}}} + \varepsilon_{\mathrm{i,t}} \quad (3)$$

$\boldsymbol{ACC_{i,t}}$: accruals, equal to the difference between earnings and operating cash flow.
$\boldsymbol{\Delta REV_{i,t}}$: change in sales.
$\boldsymbol{PPE_{i,t}}$: property, plant and equipment.
$\boldsymbol{A_{i,t-1}}$: total assets at the beginning of the period.
The residuals from equation 3 are the discretionary accruals ($\mathbf{DACC_{i,t}}$).

For real earnings management, we employ the abnormal cash flows as a metric of real earnings management as in prior research (Roychowdhury, 2006; Cohen and Zarowin, 2010; McGuire et al., 2012; Kim et al., 2017). We estimate the following equation at the country-industry-year level:

[3] See Appendix A for variable definitions.

$$\frac{\mathrm{CFO}_{i,t}}{\mathrm{A}_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{\mathrm{A}_{i,t-1}} + \beta 2 \frac{\mathrm{SALES}_{i,t}}{\mathrm{A}_{i,t-1}} + \beta 3 \frac{\Delta\mathrm{SALES}_{i,t}}{\mathrm{A}_{i,t-1}} + \varepsilon_{i,t} \quad (4)$$

$\boldsymbol{CFO_{i,t}}$: cash flows from operations.
$\boldsymbol{SALES_{i,t}}$: sales.
$\Delta\boldsymbol{SALES_{i,t}}$: change in sales**.**
$\boldsymbol{A_{i,t-1}}$: total assets at the beginning of the period.

Our measure for real earnings management ($\mathbf{ACFO_{i,t}}$), which we use in model 2, is the residuals from equation 4 multiplied by -1 because the lower the cash flow, the greater the earnings management increase via sales.

3.1.2. Country-level variables

For *Religiosity*, we use the 2009 WIN-Gallup International Global Index of Religiosity and Atheism, which measures global self-perceptions on beliefs based on interviews with more than 50,000 men and women selected from 57 countries across the globe in five continents. For culture, we use the *Power Distance* and *Individualism* measures developed by Hofstede.

To obtain measures of formal institutions, we conduct a two-step analysis using a two-step approach for a sample of 69 countries. In the first step, we perform Exploratory Factor Analysis (EFA) on 48 country-level items selected based on their face values (i.e. content validity). These items are drawn from the following databases: *World Development Indicators, Worldwide Governance Indicators, Global Financial Development, Doing Business Report, Economic Freedom of the World* and *Global Competitiveness Report*. The EFA results in 29 items[4], which are assigned to three distinct components. Each of these components has an eigenvalue greater than 1.00, and they jointly explain 81.84% of the total variance in the original data set.

The Bartlett's test finds that the reduced set of items collectively meets the necessary threshold of sampling adequacy with a value of 0.89 (significant at the 0.001 level), and they have factor loadings (i.e. correlation) exceeding the threshold value of 0.65, which is necessary for the inclusion in the factor analysis. As Hair et al. (2010) suggest, in a sample of 70, a factor loading of 0.65 or greater is considered practically significant.

We name the first component '*Investor Protection*' because it captures the level of investor protection provided by a given country's regulatory environment; the second component is named '*Enforcement Quality*' because it captures the degree of effectiveness and efficiency of the country's institutions and regulatory system; and the third component is named '*Equity Market Development*' because it captures the depth and breadth of the country's equity capital market.

In the second step, we perform Confirmatory Factor Analysis (CFA) with AMOS 22 to test the reliability and validity of the measuring instruments and reach the most parsimonious model. The final model consists of 22 items[5]. A review of the fit indices (see Appendix C) shows that the overall structural model satisfactorily fits the observed data. The ratio of the chi-square to the degrees of freedom CMIN/DF[6] was 1.43 (below the thresholds of 2-5), indicating a good model fit. The goodness-of-fit index (GFI=0.86) and the adjusted goodness-of-fit index (AGFI=0.79) were slightly lower than the desired threshold of 0.90, which suggests a reasonable model fit. Furthermore, the comparative fit index (CFI=0.97) and the normed fit index (NFI=0.91) were both above 0.90, which suggests a good fit between the structural model and the data.

The reliability of each indicator is given by their loadings or the correlations between the indicators and construct on which they load (λ). Table D-1 (in Appendix D) shows that all of the loading estimates were sufficiently large (λ> 0.50), positive, and statistically significant as required for convergent validity (see Campbell and Fiske, 1959). The table also shows

[4] An item can be a single indicant or an index which consists of a certain number of indicants.

[5] A full list of these 22 items, along with their corresponding sources and definitions, is shown in Appendix B.

[6] CMIN/DF was used as an alternative to the chi-square statistic (and its p-value) because it is highly sensitive to sample size (Sharma et al., 2005).

that all of the constructs measured (*Investor Protection, Enforcement Quality,* and *Equity Market Development*) were highly reliable because their individual *Cronbach's alpha* values were greater than the accepted reliability threshold of 0.70 (see Hair et al., 2010). The convergent validity is measured by the average variance extracted (AVE), which represents the common variance between indicators and their construct. The AVE values for all our constructs are above the commonly recommended level of 0.50, thereby satisfying the requirement for convergent validity (see Fornell and Larcker, 1981). Discriminant or divergent validity between constructs is established if the square root of AVE for each construct is greater than the squared inter-construct correlation estimates (SIC) (Fornell and Larcker, 1981).

Table D-2 (in Appendix D) shows the square root of AVE between constructs and their indicators, correlations among constructs, and their squared values. In view of this data, the square roots of the AVEs were greater than their respective inter-construct correlations, suggesting that the constructs assessed in the model have fully passed the test of discriminant validity, despite being positively and significantly correlated with one another, which is in line with previous studies (see Leuz, 2010, for example). Appendix E shows the country scores for each of these factors.[7]

3.1.3. Firm-level variables

We use several firm-level variables that have been shown to influence earnings management in previous studies (e.g. Cohen and Zarowin, 2010; Doukakis, 2014; Houqe et al., 2012; Kim et al., 2017). We control for firm size (*SIZE*), the natural logarithm of total assets, which could affect the firm's tendency and ability to manage earnings. We include leverage (*LEV*) to control for capital structure, and we use the total debt-to-equity ratio as a measure of the firm's leverage. There is substantial evidence that firms with binding debt covenants, an indication of higher leverage, are more likely to boost their earnings to mitigate covenant violations (Watts and Zimmerman, 1986; Francis and Wang, 2008). Klein (2002) found that discretionary accruals are negatively associated with size and positively with leverage.

We also control for growth (*GROWTH*), the annual percentage change in sales, as prior research suggests that the incentive to boost earnings increases with firms' growth opportunities (e.g. Barth et al., 1999; Skinner and Sloan, 1999). To control for financial performance (Kothari et al., 2005), we use the return on assets (ROA). We include the natural logarithm of outstanding shares (*SHARES*) to control for capital market incentives (Cohen and Zarowin, 2010; Zang, 2012). Similar to Doukakis (2014), we include ACFO in equation 1 and DACC in equation 2 to control for firms using mixed earnings management strategies (i.e. real and accrual-based earnings management). Finally, we include industry and year fixed-effect dummy variables to control for heterogeneity across industries and time.

3.2. Sample and data

To measure earnings management in the main and additional tests, we extract the financial statement data from Thomson One Banker over the period 2005–2010. We exclude all financial and utilities firms and include firms with available data to calculate earnings management metrics and the firm-level variables. We require at least eight observations in each two-digit GICS grouping per year. The firms in our sample are from 22 countries that adopted IFRS in 2005 or before, which enables us to isolate the probable effect of accounting standards and focus on the effect of formal and informal institutions on earnings management. Our final sample consists of 15,979 observations across 22 countries, as Table 1 presents, over the period 2007–2010.[8] The UK and Hong Kong have the most observations with 2,592 and 2,184 observations, respectively (about 29.88% of the sample). France, Germany, Australia and Singapore provide the next four largest numbers of sample observations with 1,576, 1,420, 1,307, and 1,264, respectively. Portugal has the lowest number of observations with 88.

[7] Due to space constraints, we only report results related to the 22 countries that constitute the sample for this study. The table of results for the full 69-country sample can be made available upon request.

[8] Some earnings management proxies used in the analysis require data for at least three consecutive years.

[INSERT TABLE 1 HERE]

3.3. Descriptive statistics

Table 2 presents the descriptive statistics for both the firm-level and country-level variables. We winsorize all firm-level variables at the top and bottom 1% of their distributions to mitigate the influence of outliers. The mean and median of the discretionary accruals (DACC) are -0.0001 and 0.0016, respectively. The mean and median of the abnormal cash flows from operations (ACFO) are -0.0003 and 0.0015, respectively. The absolute values of the discretionary accruals and abnormal cash flows from operations reveal similar means and medians to those reported by Kim et al. (2017).[9] The means of *Investor Protection* and *Enforcement Quality* are 8.61 and 11.27, respectively. The mean (median) of *Equity Market Development* is 167.34 (141.03), with the highest and lowest scores in Hong Kong (510.38) and Bulgaria (38.65) respectively in our country sample. The mean (median) of *Religiosity* is 40.64 (29.50), suggesting that 40.64% of the firm-year observations are from less-religious countries. The means of *Power Distance* and *Individualism* are 51.40 and 60.65, respectively. Among all these factors, *Equity Market Development* has the highest standard deviation (144.05), indicating that institutional differences across the 22 countries included in the sample are mainly explained by differences in the degree of their market development. As a result, accounting regulators should step up their efforts in the development of equity markets to narrow the differences and catch up.

[INSERT TABLE 2 HERE]

Table 3 reports the Pearson correlation coefficients and their statistical significance for the variables included in the regression models. We find that none of the correlation coefficients among the independent variables are greater than 0.8, which indicates that multicollinearity is not a serious, i.e. harmful, problem in our study (see for example, Griffiths et al., 1993; Gujarati and Porter, 2009)[10]. We, however, find that one of the correlations between Individualism and Power Distance, is rather high (r = - 0.74). Therefore, the Variation Inflation Factor (VIF) test was carried out to check the problem of multicollinearity among the variables. Untabulated results of the VIF statistics show that multicollinearity is not a significant problem in this study, as all VIF values are much lower than the cutoff threshold of 10 (see, for example, Hair et al., 2010). In model 5 and 6 in Table 4, the mean of VIF values are 2.82 and 2.81 respectively.

[INSERT TABLE 3 HERE]

4. Empirical results

4.1. The impact of informal institutions on earnings management

Table 4 presents the results of the analysis testing the effects of informal institutions (*Religiosity* and *Culture*) on accruals and real earnings management, after controlling for formal institutions (*Investor Protection, Enforcement Quality* and *Equity Market Development*). While models 1 and 2 examine the effects of formal institutions on their own, models 3 and 4 investigate the effects of informal institutions without taking into consideration the effects of formal institutions. For the models shown in Table 4, while the magnitudes of the key coefficients change, their respective signs do not, and their (statistical) significance persists except for *Enforcement* and *Quality* and *Individualism,* which indicates the limitations of the formal models and informal models when run separately. Models 5 and 6 are therefore more important than models 1 to 4, especially because they estimate the effects of informal institutions (religiosity and culture) on abnormal accruals and abnormal cash flows after controlling for formal institutions.

[9] The mean (media) for absolute discretionary accruals is 0.0641 (0.0661), and the mean (median) for absolute abnormal cash flows is 0.0807 (0.0906).

[10] Researchers (e.g. Gujarati and Porter, 2009, Hair et al., 2010) suggest multicollinearity is not a significant problem if the correlation is below 0.8 or 0.9. According to Griffiths et al. (1993), "a correlation coefficient between two explanatory variables greater than 0.8 or 0.9 indicates a strong linear association and a potentially harmful collinear relationship."

[INSERT TABLE 4 HERE]

The regression results show that the estimated coefficients for all formal and informal institutional variables are statistically significant at the conventional levels of significance. In Model 5 where the dependent variable is the (signed) discretionary accruals (DACC), the coefficients for all formal institutional variables are negative and statistically significant at the 1% level of significance (*Investor Protection*, β=-0.00103, t-statistic=-3.381; *Enforcement Quality*, β=-0.00377, t-statistic=-6.592; *Equity Market Development*, β=-0.0000434, t-statistic=-6.280). Our findings are consistent with prior research (e.g. Houqe et al., 2012) and suggest that firms in countries with strong formal institutions (i.e. a higher level of investor protection, rigorous enforcement and a higher level of stock market development) tend to engage less in accruals-based earnings management activities than their counterparts in countries with relatively weak formal institutions.

In Model 6, where the dependent variable is the abnormal cash flows from operations (ACFO), we find that the coefficients for all formal institutions are positive and statistically significant at the 1% level of significance (*Investor Protection*, β=0.00150, t-statistic=4.227; *Enforcement Quality*, β=0.00498, t-statistic=7.907; *Equity Market Development*, β= 0.0000611, t-statistic=7.993). Our findings suggest that firms in countries characterized by strong formal institutions prefer to manage their earnings through real earnings management activities. Taken together and consistent with the 'penalty' hypothesis, the managers of firms domiciled in highly litigious environments consider managing earnings via real earnings management, rather than employing accruals manipulation. This is consistent with the findings of a number of studies (e.g. Cohen et al., 2008; Graham et al., 2005; Kothari et al., 2016), demonstrating that managing earnings through real activities is more difficult for investors to detect and makes it more difficult for them to litigate and sue managers on behalf of their corporations.

Turning to the informal institutions*, Religiosity* is, on the one hand, significantly and negatively associated with DACC in model 5 (β=-0.000317, t-statistic=-9.802) and, on the other hand, strongly positively associated with ACFO in model 6 (β=0.000430, t-statistic=11.48). In particular, an increase of one standard deviation in *Religiosity* reduces DACC by 8 percentage points and raises ACFO by 9 percentage points[11]. These results indicate that in their responses to external pressure from religious social norms, managers in more religious countries appear to engage less in earnings management practices that are seen by societal members as less ethical or less socially acceptable (e.g. accruals manipulation) and therefore exhibit a greater tendency towards real-activities-based earnings management. These results support the two hypotheses, H1a and H1b. Our findings are entirely consistent with those of McGuire et al. (2012), who find that *Religiosity* is negatively associated with abnormal accruals but positively associated with the two measures of real earnings management. Our findings are also broadly consistent with Kanagaretnam et al.'s (2015) conclusion that *Religiosity* is negatively associated with income-increasing earnings management through abnormal loan loss provisions.

The results also show that *Power Distance* is negatively and significantly associated with DACC (β=-0.000240, t-statistic=-5.748) but positively associated with ACFO (β=0.000308, t-statistic=6.455). This confirms the association between *Power Distance* and earnings management as stated in H2. In particular, one standard deviation change in *Power Distance* leads to a 5-percentage-point change in DACC and ACFO. The results show that managers of firms in high-power-distance countries appear to manage earnings less through discretionary accruals and more through real activities. Our finding is consistent with the view that in their responses to social pressures, managers in high-power-distance societies have less incentive to engage in ethically unacceptable or illegitimate social behavior (Waldman et al., 2006), such as accruals-based earnings management methods, which are perceived as less ethical than real earnings management methods (Bruns and Merchant, 1990).

[11] Of all the independent variables, *ROA* has, however, the strongest effect on real and accrual-based earnings management. Precisely, *ROA* appears to be approximately 8 times larger than *Religiosity*.

As shown in models 5 and 6, *Individualism* is, on the one hand, negatively and marginally significantly related to DACC (β=-0.0000703, t-statistic=-1.905) and, on the other hand, positively and marginally significantly related to ACFO (β=0.0000782, t-statistic=1.830). Our findings indicate that *Individualism* seems not to play a significant role (as would be expected) in explaining earnings management when formal institutions are 'simultaneously' considered (i.e. H3 is not fully supported).

Overall, our results suggest that when considered in combination, formal and informal institutions, except for *Individualism*, are important determinants of managers' choices of earnings management methods, implying that informal institutions determine the quality of earnings at least as strongly as formal institutions do. In other words, a firm's motivation towards earnings management methods is influenced by the formal and informal institutional settings of the country in which it operates. Managers tend to choose earnings management strategies that meet both the legal (formal) and social (informal) norms of the environments where their firms are headquartered. More essentially, of all the country-level institutions, *Religiosity* has the strongest effect on accruals and real earnings management activities, followed by *Power Distance*.

4.2. Additional tests

4.2.1. Other measures of accruals and real earnings management

We conduct a number of sensitivity checks; these include using different models to capture accruals earnings management and real earnings management. First, we use the modified Jones (1991) model to measure accruals earnings management, as in Dechow et al. (1995):

$$\frac{\mathrm{ACC_{i,t}}}{\mathrm{A_{t-1}}} = \mathrm{a_0} + \mathrm{a_1}\frac{1}{\mathrm{A_{t-1}}} + \mathrm{a_2}\frac{\left(\Delta\mathrm{REV_{i,t}} - \Delta\mathrm{REC_{i,t}}\right)}{\mathrm{A_{t-1}}} + \mathrm{a_3}\frac{\mathrm{PPE_{i,t}}}{\mathrm{A_{t-1}}} + \varepsilon\mathrm{it} \qquad (5)$$

Then, we use the residuals from the equation above as a measure of earnings management. The results presented in Table 5 are the same as those we obtained with Jones's model in terms of the significance and the relationship between abnormal accruals and the independent variables.

[INSERT TABLE 5 HERE]

To show whether our results hold using other proxies of accruals earnings management, we use the Dechow-Dichev (hereafter DD) (Dechow and Dichev 2002). As Peek et al. (2013) explains, "the DD model predicts accruals better than the MJ model in every country under examination, we recommend using the DD model to calculate abnormal accruals in international earnings management research." (p. 567); therefore, we use the DD model as an additional test. Following Francis et al. (2005), we modify the DD model by adapting it with the fundamental variables from the modified Jones model. The residuals from the regression in equation 6 are the alternative metric of accruals earnings management:

$$\mathrm{ACC_{i,t}} = \beta_0 + \beta_1\mathrm{CFO_{i,t-1}} + \beta_2\mathrm{CFO_{i,t}} + \beta_3\mathrm{CFO_{i,t+1}} + \beta_4\Delta\mathrm{REV_{i,t}} + \beta_5\mathrm{PPE_{i,t}} + \varepsilon \qquad (6)$$

Table 6 shows similar results to those we obtained when we used the Jones model, except for the impact of individualism which becomes insignificant rather than significant at 10%, as in Table 4.

[INSERT TABLE 6 HERE]

Furthermore, we use other measures of real earnings management. Following Cohen and Zarowin (2010), RM1 is our first measure of real earnings management, computed by adding the abnormal production costs to the abnormal discretionary expenses after multiplying the latter by -1. We multiply the abnormal discretionary expenses by -1 because the greater the cut in these expenses, the higher the earnings. Therefore, the higher RM1 is, the more likely it is for firms to manage earnings upward. RM2 is the second measure of real earnings management, which is the aggregation of both abnormal cash flow and abnormal discretionary expenses after multiplying both of them by -1. We multiply the abnormal cash flow by -1 because the

lower the cash flow, the greater the manipulation of sales. Thus, the higher RM2 is, the greater the real earnings management is.

To measure the abnormal production costs, we employ the following model, as in Roychowdhury (2006) and Cohen and Zarowin (2010):

$$\frac{\mathrm{PROD}_{i,t}}{\mathrm{A}_{t-1}} = \beta_0 + \frac{\beta_1}{\mathrm{A}_{t-1}} + \beta_2 \frac{\mathrm{SALES}_{i,t}}{\mathrm{A}_{t-1}} + \beta_3 \frac{\Delta\mathrm{SALES}_{i,t}}{\mathrm{A}_{t-1}} + \beta_4 \frac{\Delta\mathrm{SALES}_{i,t-1}}{\mathrm{A}_{t-1}} + \varepsilon \mathrm{it} \qquad (7)$$

Abnormal *PROD* is the actual *PROD* minus the normal level of *PROD* calculated using the estimated coefficient. More specifically, the residuals from the regression (7) represent the abnormal *PROD*. Production costs (*PROD*) are defined as the sum of change in inventory and cost of goods sold during the period.

To measure the abnormal discretionary expenditures, we use the following model, as in Roychowdhury (2006) and Cohen and Zarowin (2010):

$$\frac{\mathrm{DISX}_{i,t}}{\mathrm{A}_{t-1}} = \beta_0 + \frac{\beta_1}{\mathrm{A}_{t-1}} + \beta_2 \frac{\mathrm{SALES}_{i,t-1}}{\mathrm{A}_{t-1}} + \varepsilon it \qquad (8)$$

Abnormal *DISX* is the actual *DISX* minus the normal level of *DISX* calculated using the estimated coefficient. *DISX* discretionary expenses are the difference between operating income and gross income from WorldScope. We run these regressions for each combination of two-digit GICS and year in each country. The results in Table 7, in terms of the relationships among formal institutions, religiosity and real earnings management when using RM1 or RM2, are similar to our initial results when using abnormal cash flows. However, the effect of power distance on the extent of real earnings management is only significant at the 10% level.

[INSERT TABLE 7 HERE]

4.2.2. Informal institutions and the direction of earnings management

Our results revealed that higher religiosity and higher power distance were associated with less accruals earnings management, which could be not only less income increasing but also more income decreasing. Therefore, it would be useful to investigate the association between informal institutions and income increasing/income decreasing via accruals. It must be considered, however, that managers engage in real earnings management actions in an attempt to increase earnings (i.e. upward earnings management), rather than to decrease earnings, by accelerating sales through increased price discounts or more lenient credit terms. It is far from reality that managers may structure economic transactions (e.g. via sales manipulation) to decrease earnings. This is consistent with Graham et al.'s (2005, pp. 34-35) survey findings:

> "80% of survey participants report that they would decrease discretionary spending on R&D, advertising, and maintenance…to meet an earnings target. More than half (55.3%) state that they would delay starting a new project to meet an earnings target…"

Roychowdhury (2006) also reported that managers take real actions to increase earnings and thus avoiding reporting losses. This finding is similar to that of Gunny (2005) who concluded that managers reduced both SGA (selling, general and administrative) expenses and R&D expenditures to increase earnings. The literature also provides evidence that managers take the real actions during the year while accrual earnings management happens after the year end. Zang (2012), for example, found that managers adjusted accruals earnings management after the year end based on the extent of real earnings management exercised during the year. As such, managers tend to increase earnings via real activities during the year and then determine the level of earnings management via accruals after the year end.

[INSERT TABLE 8 HERE]

Interestingly, our results in Table 8 reveal that higher religiosity, higher power distance and strong formal institutions are not only associated with less income increasing, but also with more income decreasing via accruals. Managers are not only less inclined to manipulate earnings upward (via accruals) in an attempt to avoid costly violations of social and legal rules but

also are more likely to be conservative. Nevertheless, in their responses to capital market pressure and in an attempt to meet earnings targets, the managers of firms in contexts with high institutional quality and strong religious/higher social pressure prefer real activities over accruals manipulation as a tool to manage earnings upward, because they are more ethical and more difficult to detect (García Lara et al., 2005; Graham et al., 2005; Kothari et al., 2016; McGuire et al., 2012).

5. Conclusion

This study has examined the impact of informal institutions on both accruals and real earnings management across countries that have adopted IFRS, after controlling for the effect of formal institutions. Formal institutions include written rules, such as investor protection laws, while informal institutions are the unwritten social norms, such as religiosity, that shape behaviors and attitudes. This paper has argued that including both formal and informal institutions in the analysis of the factors influencing accounting practices, such as earnings management, is essential and should lead to more conclusive results.

The findings indicate that managers switch to real earnings management activities due to social factors. That is, in countries with high religiosity and high power distance, accruals earnings management is lower but real earnings management is higher. This is because managers hold the view that real earnings management is more ethical than accruals earnings management, which may explain why managers in religious societies or those under social pressure in higher-power-distance countries are more likely to engage in real earnings management than accruals earnings management.

Notwithstanding its relatively short time period, this work offers valuable insights into the role of local environments in accounting practices under harmonized accounting standards. The findings of this investigation complement those of earlier studies on earnings management across countries by providing a more comprehensive institutional analysis using formal and informal institutions at the same time. In particular, our findings suggest that informal institutions (culture and religiosity) determine managers' earnings management choices at least as strongly as formal institutions do. It would be, therefore, misleading to analyze managers' choices in managing earnings solely from the formal rules side without considering the role of informal constraints or vice versa. The study also establishes more-reliable and more-valid quantitative measures of investor protection, enforcement quality and equity market development. This enabled us to overcome the multicollinearity problem that has prevented previous studies from including them together in one regression.

The current study has three limitations. First, this study focuses on the influence of institutions on managers' choices of earnings management methods— assuming there are only two methods (accruals vs. real) through which managers can manage earnings. In addition to accruals and real earnings management, managers could, however, use other methods to manage earnings. For instance, Athanasakou et al. (2009) find evidence that UK firms tend to engage in classification shifting mechanism rather than in accruals management in their attempt to meet analyst expectations. Second, as with most studies using econometric approaches, our research can also be subject to omitted variable bias. Although the set of variables used has been carefully chosen, they are not inclusive of all variables that may be correlated with country-level institutions (e.g., firm-level corporate governance). Third, our study covers a relatively short time period, and thus future research is needed to examine whether our findings will hold over time, as countries' institutions will continue to develop and evolve in the future. In particular, future research should take steps to determine whether the findings of the present study are representative of all IFRS-adopting countries and whether this is of real concern or is a temporary situation, whereby IFRS users will converge and diversity will decrease (or even disappear) over time.

References

Ahmed, A.S., Neel, M., Wang, D., 2013. Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. Contemp. Account. Res. 30, 1344–1372.

Athanasakou, V.E., Strong, N.C., Walker, M., 2009. Earnings management or forecast guidance to meet analyst expectations? Account. Bus. Res. 39, 3–35.

Barnett, T., Bass, K., Brown, G., 1996. Religiosity, ethical ideology, and intentions to report a peer's wrongdoing. J. Bus. Ethics 15, 1161–1174.

Barth, M.E., Elliott, J.A., Finn, M.W., 1999. Market Rewards Associated with Patterns of Increasing Earnings. J. Account. Res. https://doi.org/10.2307/2491414

Bonetti, P., Magnan, M.L., Parbonetti, A., 2016. The Influence of Country-and Firm-level Governance on Financial Reporting Quality: Revisiting the Evidence. J. Bus. Financ. Account. 43, 1059–1094.

Bruns, W.J., Merchant, K., 1990. The dangerous morality of managing earnings. Manag. Account. 72, 22–25.

Campbell, D.T., Fiske, D.W., 1959. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychol. Bull. 56, 81.

Cialdini, R.B., Goldstein, N.J., 2004. Social influence: Compliance and conformity. Annu. Rev. Psychol. 55, 591–621.

Clugston, M., Howell, J.P., Dorfman, P.W., 2000. Does cultural socialization predict multiple bases and foci of commitment? J. Manage. 26, 5–30.

Cohen, D.A., Dey, A., Lys, T.Z., 2008. Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley periods. Account. Rev. 83, 757–787.

Cohen, D.A., Zarowin, P., 2010. Accrual-based and real earnings management activities around seasoned equity offerings. J. Account. Econ. 50, 2–19.

Conroy, S.J., Emerson, T.L.N., 2004. Business Ethics and Religion: Religiosity as a Predictor of Ethical Awareness Among Students. J. Bus. Ethics 50, 383–396. https://doi.org/10.1023/B:BUSI.0000025040.41263.09

Dechow, P.M., Sloan, R.G., Sweeney, A.P., 1995. Detecting earnings management. Account. Rev. 193–225.

Dechow, P.M., Dichev, I.D., 2002. The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. Account. Rev. 77, 35–59. https://doi.org/10.2308/accr.2002.77.s-1.35

Desender, K.A., Castro, C.E., De León, S.A.E., 2011. Earnings management and cultural values. Am. J. Econ. Sociol. 70, 639–670.

Diaz, J.D., 2000. Religion and gambling in sin-city: A statistical analysis of the relationship between religion and gambling patterns in Las Vegas residents. Soc. Sci. J. https://doi.org/10.1016/S0362-3319(00)00083-5

Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2008. The law and economics of self-dealing. J. financ. econ. 88, 430–465.

Doukakis, L.C., 2014. The effect of mandatory IFRS adoption on real and accrual-based earnings management activities. J. Account. Public Policy. https://doi.org/10.1016/j.jaccpubpol.2014.08.006

Doupnik, T.S., 2008. Influence of culture on earnings management: A note. Abacus 44, 317–340.

Dyreng, S.D., Mayew, W.J., Williams, C.D., 2012. Religious Social Norms and Corporate Financial Reporting. J. Bus. Financ. Account. https://doi.org/10.1111/j.1468-5957.2012.02295.x

Enomoto, M., Kimura, F., Yamaguchi, T., 2015. Accrual-based and real earnings management: An international comparison for investor protection. J. Contemp. Account. Econ. 11, 183–198.

Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res. 39–50.

Francis, J., LaFond, R., Olsson, P., Schipper, K., 2005. The market pricing of accruals quality. J. Account. Econ. 39, 295–327.

Francis, J.R., Wang, D., 2008. The Joint Effect of Investor Protection and Big 4 Audits on Earnings Quality around the World. Contemp. Account. Res. 25, 157–91. https://doi.org/10.1506/car.25.1.6

García Lara, J.M., Osma, B.G., Mora, A., 2005. The effect of earnings management on the asymmetric timeliness of earnings. J. Bus. Financ. Account. https://doi.org/10.1111/j.0306-686X.2005.00610.x

Geiger, M.A., O'Connell, B.T., Clikeman, P.M., Ochoa, E., Witkowski, K., Basioudis, I., 2006. Perceptions of Earnings Management: The Effects of National Culture. Adv. Int. Account. https://doi.org/10.1016/S0897-3660(06)19007-8

Goodwin, J.D., Goodwin, D., Fiedler, B., 2000. The influence of culture on accountants' ethical decision making in Singapore and Australia. Account. Res. J. 13, 22–36.

Graham, J.R., Harvey, C.R., Rajgopal, S., 2005. The economic implications of corporate financial reporting. J. Account. Econ. https://doi.org/10.1016/j.jacceco.2005.01.002

Griffiths, W., Carter Hill, R., Judge, G.G., 1993. Learning and practicing econometrics.

Guan, L., Pourjalali, H., Sengupta, P., Teruya, J., 2005. Effect of cultural environment on earnings manipulation: A five Asia-Pacific country analysis. Multinatl. Bus. Rev. 13, 23–41.

Gujarati, D.N., Porter, D.C., 2009. Basic econometrics, 5th ed. New York: McGraw-HiII.

Gunny, K.A., 2005. What are the consequences of real earnings management? Working paper. University of Colorado.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., 2010. Multivariate Data Analysis. Pearson. New Jersey.

Han, S., Kang, T., Salter, S., Yoo, Y.K., 2010. A cross-country study on the effects of national culture on earnings management. J. Int. Bus. Stud. https://doi.org/10.1057/jibs.2008.78

Hechter, M., Opp, K.D., 2001. Social Norms. Russell Sage Foundation.

Helmke, G., Levitsky, S., 2004. Informal institutions and comparative politics: A research agenda. Perspect. Polit. 2, 725–740.

Hofstede, G., 1984. Cultural dimensions in management and planning. Asia Pacific J. Manag. 1, 81–99.

Hofstede, G., 1980. Culture's consequences: International differences in work-related values. Sage.

Hofstede, G., Hofstede, G.J., Minkov, M., 2010. Cultures and organizations: software of the mind intercultural cooperation and its importance for survival. McGraw-Hill.

Horne, C., 2009. The Rewards of Punishment: A Relational Theory of Norm Enforcement. Stanford University Press.

Houqe, M.N., van Zijl, T., Dunstan, K., Karim, A.K.M.W., 2012. The Effect of IFRS Adoption and Investor Protection on Earnings Quality Around the World. Int. J. Account. https://doi.org/10.1016/j.intacc.2012.07.003

Iannaccone, L., 1998. Introduction to the Economics of Religion. J. Econ. Lit. 36, 1465–1495.

Ipino, E., Parbonetti, A., 2017. Mandatory IFRS adoption: the trade-off between accrual-based and real earnings management. Account. Bus. Res. https://doi.org/10.1080/00014788.2016.1238293

Javidan, M., Dorfman, P.W., De Luque, M.S., House, R.J., 2006. In the Eye of the Beholder: Cross Cultural Lessons in Leadership from Project GLOBE. Acad. Manag. Perspect. https://doi.org/10.5465/AMP.2006.19873410

Jones, J.J., 1991. Earnings Management During Import Relief Investigations. J. Account. Res. 29, 193. https://doi.org/10.2307/2491047

Kanagaretnam, K., Lim, C.Y., Lobo, G.J., 2011. Effects of national culture on earnings quality of banks. J. Int. Bus. Stud. 42, 853–874.

Kanagaretnam, K., Lobo, G.J., Wang, C., 2015. Religiosity and Earnings Management: International Evidence from the Banking Industry. J. Bus. Ethics. https://doi.org/10.1007/s10551-014-2310-9

Kennedy, E.J., Lawton, L., 1998. Religiousness and business ethics. J. Bus. Ethics. https://doi.org/10.1023/A:1005747511116

Kim, J., Kim, Y., Zhou, J., 2017. Languages and earnings management. J. Account. Econ. 63, 288–306. https://doi.org/10.1016/J.JACCECO.2017.04.001

Klein, A., 2002. Audit committee, board of director characteristics, and earnings management. J. Account. Econ. https://doi.org/10.1016/S0165-4101(02)00059-9

Kohlberg, L., 1969. Stage and sequence: The cognitive-developmental approach to socialization. In D. Goslin (Ed.), Handbook of socialization, theory and research (pp. 347–480)

Kothari, S.P., Leone, A.J., Wasley, C.E., 2005. Performance matched discretionary accrual measures. J. Account. Econ. https://doi.org/10.1016/j.jacceco.2004.11.002

Kothari, S.P., Mizik, N., Roychowdhury, S., 2016. Managing for the moment: The role of earnings management via real activities versus accruals in SEO valuation. Account. Rev. https://doi.org/10.2308/accr-51153

Lehrer, E.L., 2004. Religion as a determinant of economic and demographic behavior in the United States. Popul. Dev. Rev. https://doi.org/10.1111/j.1728-4457.2004.00038.x

Leuz, C., 2010. Different approaches to corporate reporting regulation: How jurisdictions differ and why. Account. Bus. Res. 40, 229–256.

Longenecker, J.G., McKinney, J.A., Moore, C.W., 2004. Religious Intensity, Evangelical Christianity, and Business Ethics: An Empirical Study. J. Bus. Ethics. https://doi.org/10.1007/s10551-004-0990-2

McGuire, S.T., Omer, T.C., Sharp, N.Y., 2012. The impact of religion on financial reporting irregularities. Account. Rev.

https://doi.org/10.2308/accr-10206

Miller, A.S., Hoffmann, J.P., 1995. Risk and Religion: An Explanation of Gender Differences in Religiosity. J. Sci. Study Relig. https://doi.org/10.2307/1386523

Nabar, S., Boonlert-U-Thai, K.K., 2007. Earnings management, investor protection, and national culture. J. Int. Account. Res. 6, 35–54.

Nobes, C., 1998. Towards a general model of the reasons for international differences in financial reporting. Abacus. https://doi.org/10.1111/1467-6281.00028

North, D.C., 2005. Understanding the Process of Economic Change, The Princeton Economic History of the Western World. Princeton University Press.

North, D.C., 1990. Institutions, Institutional Change and Economic Performance. Cambridge University Press.

Parboteeah, K.P., Hoegl, M., Cullen, J.B., 2008. Ethics and religion: An empirical test of a multidimensional model. J. Bus. Ethics. https://doi.org/10.1007/s10551-007-9439-8

Parfet, W.U., 2000. Accounting subjectivity and earnings management: A preparer perspective. Account. Horizons. https://doi.org/10.2308/acch.2000.14.4.481

Peek, E., Meuwissen, R., Moers, F., Vanstraelen, A., 2013. Comparing Abnormal Accruals Estimates across Samples: An International Test. Eur. Account. Rev. 22, 533–572. https://doi.org/10.1080/09638180.2012.746518

Perera, H., Baydoun, N., 2007. Convergence with international financial reporting standards: the case of Indonesia. Adv. Int. Account. 20, 201–224.

Roychowdhury, S., 2006. Earnings management through real activities manipulation. J. Account. Econ. 42, 335–370. https://doi.org/10.1016/J.JACCECO.2006.01.002

Rutledge, R.W., Karim, K.E., 1999. The influence of self-interest and ethical considerations on managers' evaluation judgments. Accounting, Organ. Soc. https://doi.org/10.1016/S0361-3682(98)00027-0

Schweikart, J.A., 1985. Contingency theory as a framework for research in international accounting. Int. J. Account. Educ. Res. 21, 89–98.

Sharma, S., Mukherjee, S., Kumar, A., Dillon, W.R., 2005. A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. J. Bus. Res. 58, 935–943.

Skinner, D.J., Sloan, R.G., 1999. Earnings Surprises, Growth Expectations, and Stock Returns: Don't Let an Earnings Torpedo Sink Your Portfolio, SSRN. https://doi.org/10.2139/ssrn.172060

Smith, A., Hume, E.C., 2005. Linking culture and ethics: A comparison of accountants' ethical belief systems in the individualism/collectivism and power distance contexts. J. Bus. Ethics 62, 209–220.

Stark, R., Doyle, D.P., Kent, L., 1980. Rediscovering moral communities: Church membership and crime. Underst. crime Curr. theory Res. 18, 43–52.

Stark, R., Kent, L., Doyle, D.P., 1982. Religion and delinquency: The ecology of a "lost" relationship. J. Res. Crime Delinq. https://doi.org/10.1177/002242788201900102

Stavrova, O., Fetchenhauer, D., Schlösser, T., 2013. Why are religious people happy? The effect of the social norm of religiosity across countries. Soc. Sci. Res. 42, 90–105.

Stulz, R.M., Williamson, R., 2003. Culture, openness, and finance. J. financ. econ. https://doi.org/10.1016/S0304-405X(03)00173-9

Sunstein, C.R., 1996. Social norms and social roles. Columbia Law Rev. 96, 903–968.

Terpstra, D.E., Rozell, E.J., Robinson, R.K., 1993. The influence of personality and demographic variables on ethical decisions related to insider trading. J. Psychol. Interdiscip. Appl. https://doi.org/10.1080/00223980.1993.9915573

Tian, Q., Peterson, D.K., 2016. The effects of ethical pressure and power distance orientation on unethical pro-organizational behavior: the case of earnings management. Bus. Ethics A Eur. Rev. 25, 159–171.

Trevino, L.K., 1986. Ethical Decision Making in Organizations: A Person-Situation Interactionist Model. Acad. Manag. Rev. https://doi.org/10.5465/AMR.1986.4306235

Vitell, S.J., Nwachukwu, S.L., Barnes, J.H., 1993. The Effects of Culture on Ethical Decision-Making : An Application of Hofstede' s Typology. J. Bus. Ethics. https://doi.org/10.1007/BF00881307

Waldman, D.A., De Luque, M.S., Washburn, N., House, R.J., et al. 2006. Cultural and leadership predictors of corporate social responsibility values of top management: A GLOBE study of 15 countries. J. Int. Bus. Stud. 37, 823–837. https://doi.org/10.1057/palgrave.jibs.8400230

Walker, A.G., Smither, J.W., DeBode, J., 2012. The effects of religiosity on ethical judgments. J. Bus. Ethics 106, 437–452.

Watts, R., Zimmerman, J., 1986. Positive Accounting Theory, Prentice-Hall Inc.

Weaver, G.R., Agle, B.R., 2002. Religiosity and ethical behavior in organizations: A symbolic interactionist perspective. Acad. Manag. Rev. https://doi.org/10.5465/AMR.2002.5922390

Welch, M.R., Tittle, C.R., Petee, T., 1991. Religion and Deviance among Adult Catholics: A Test of the "Moral Communities" Hypothesis. J. Sci. Study Relig. 30, 159–172.

Zahn, G.C., 1970. The commitment dimension. Sociol. Anal. 31, 203–208.

Zang, A.Y., 2012. Evidence on the trade-off between real activities manipulation and accrual-based earnings management. Account. Rev. https://doi.org/10.2308/accr-10196

Zhang, X., Liang, X., Sun, H., 2013. Individualism–collectivism, private benefits of control, and earnings management: A cross-culture comparison. J. Bus. ethics 114, 655–664.

Table 1 Sample distribution by country

Country	N	Country	N
Australia	1,307	Netherlands	248
Austria	92	Norway	384
Belgium	248	Philippines	219
Bulgaria	232	Poland	481
Denmark	284	Portugal	88
Finland	308	Singapore	1,264
France	1,576	South Africa	460
Germany	1,420	Spain	264
Greece	708	Sweden	764
Hong Kong	2,184	United Kingdom	2,592
Italy	616	Total	15,979
Jordan	240		

This table presents the sample distribution by country.

Table 2 Descriptive statistics

Variables	Mean	Q1	Median	Q3	Std. Dev.
Dependent variables					
DACC	-0.0001	-0.0434	0.0016	0.0447	0.0855
ACFO	-0.0003	-0.0536	0.0015	0.0532	0.1080
Country-level variables					
Religiosity	40.6437	26.5000	29.5000	70.0000	21.8752
Power Distance	51.4032	35.0000	50.0000	68.0000	17.6991
Individualism	60.6532	35.0000	69.0000	80.0000	24.8569
Investor Protection	8.6095	6.6800	8.2900	11.0400	2.5995
Enforcement Quality	11.2666	11.1200	11.5000	11.9100	1.0427
Equity Market Development	167.3395	76.73	141.0300	174.27	144.0483
Control variables					
ROA	0.0175	0.0002	0.0381	0.0787	0.1371
Size	2.3253	1.7249	2.2443	2.8732	0.8738
Leverage	2.4633	0.4264	0.9960	1.9393	7.1594
Growth	0.1219	-0.0812	0.0662	0.2437	0.3907
Shares	1.8375	1.1415	1.8700	2.5360	0.9218

This table presents the descriptive statistics for all variables used in the regressions. They are calculated using 15,979 firm-year observations. All firm-level variables are winsorized at the 1st and 99th percentiles.

Table 3 Pearson correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. DACC	1												
2. ACFO	0.3926*	1											
3. Investor Protection	-0.0002	0.0008	1										
4. Enforcement Quality	0.0023	-0.0020	0.4955*	1									
5. Equity Market Development	0.0002	0.0051	0.6829*	0.3765*	1								
6. Religiosity	-0.0029	0.0063	-0.2992*	-0.4821*	-0.2877*	1							
7. Power Distance	-0.0020	0.0108	0.1311*	-0.2978*	0.3606*	0.4407*	1						
8. Individualism	0.0009	-0.0102	-0.1878*	0.0668*	-0.5446*	-0.3468*	-0.7400*	1					
9. ROA	0.3197*	-0.4282*	0.0714*	0.0276*	0.0926*	0.0604*	0.1053*	-0.0956*	1				
10. Size	0.0164*	-0.0382*	-0.0266*	-0.005	0.0062	-0.0530*	-0.0308*	0.0343*	0.2104*	1			
11. Leverage	-0.0187*	0.0378*	-0.0792*	0.0421*	-0.0779*	-0.0813*	-0.1271*	0.1200*	-0.1375*	-0.0869*	1		
12. Growth	0.0226*	0.0138	0.0542*	0.0578*	0.0589*	-0.0148	0.0126	-0.0148	0.1298*	-0.011	0.0094	1	
13. Shares	-0.0046	-0.0173*	0.5484*	0.2621*	0.5842*	-0.0111	0.2191*	-0.3349*	0.1054*	0.3995*	-0.0730*	0.0643*	1

This table reports the Pearson correlation coefficients between the variables in our sample. All variables are defined in Appendix A.
* statistical significance at p<5% using two-sided t-statistics.

Table 4 Informal institutions and earnings management

Variables	Formal institutions only		Informal institutions only		Formal and informal institutions	
	DACC	ACFO	DACC	ACFO	DACC	ACFO
	(1)	(2)	(3)	(4)	(5)	(6)
Religiosity			-4.74e-05**	5.35e-05**	-0.000317***	0.000430***
			(-2.044)	(2.045)	(-9.802)	(11.48)
Power Distance			-0.000229***	0.000301***	-0.000240***	0.000308***
			(-5.690)	(6.433)	(-5.748)	(6.455)
Individualism			7.23e-05**	-0.000120***	-7.03e-05*	7.82e-05*
			(2.334)	(-3.241)	(-1.905)	(1.830)
Investor Protection	-0.000736**	0.00106***			-0.00103***	0.00150***
	(-2.567)	(3.098)			(-3.381)	(4.227)
Enforcement Quality	0.000362	-0.000570			-0.00377***	0.00498***
	(0.681)	(-0.930)			(-6.592)	(7.907)
Equity Market Development	-3.36e-05***	4.92e-05***			-4.34e-05***	6.11e-05***
	(-6.791)	(8.646)			(-6.280)	(7.993)
ROA	0.413***	-0.534***	0.414***	-0.535***	0.421***	-0.544***
	(48.35)	(-55.39)	(49.00)	(-56.08)	(49.31)	(-56.51)
Size	-0.00933***	0.0122***	-0.00864***	0.0112***	-0.0120***	0.0159***
	(-12.32)	(13.01)	(-12.08)	(12.39)	(-14.72)	(15.64)
Leverage	0.000416***	-0.000482***	0.000361***	-0.000409***	0.000315***	-0.000342**
	(4.008)	(-3.574)	(3.450)	(-3.028)	(3.002)	(-2.517)
Growth	-0.0128***	0.0211***	-0.0131***	0.0215***	-0.0129***	0.0211***
	(-6.700)	(9.716)	(-6.887)	(9.918)	(-6.784)	(9.771)
Shares	0.00228***	-0.00464***	-0.000515	-0.000565	0.00596***	-0.00965***
	(2.646)	(-4.529)	(-0.778)	(-0.718)	(6.297)	(-8.442)
DACC		0.765***		0.766***		0.770***
		(71.51)		(72.03)		(72.56)
ACFO	0.534***		0.535***		0.539***	
	(62.28)		(62.60)		(62.87)	
Constant	0.0219***	-0.0286***	0.0258***	-0.0316***	0.100***	-0.132***
	(3.260)	(-3.758)	(4.687)	(-4.892)	(11.22)	(-13.52)
Industry f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes
N	15,979	15,979	15,979	15,979	15,979	15,979
Adjusted R^2	0.473	0.527	0.475	0.528	0.480	0.534

*, **, *** significant at the 10%, 5% and 1% levels, respectively.
Robust t-statistics in parentheses.
See Appendix A for variable definitions.
All firm-level variables are winsorized at the 1st and 99th percentiles.

Table 5 Informal institutions and earnings management using the modified Jones model

Variables	Formal institutions only		Informal institutions only		Formal and informal institutions	
	MJ (1)	ACFO (2)	MJ (3)	ACFO (4)	MJ (5)	ACFO (6)
Religiosity			-4.57e-05**	5.22e-05**	-0.000321***	0.000432***
			(-1.969)	(2.006)	(-9.926)	(11.60)
Power Distance			-0.000239***	0.000309***	-0.000254***	0.000318***
			(-5.968)	(6.633)	(-6.093)	(6.712)
Individualism			6.84e-05**	-0.000116***	-7.83e-05**	8.46e-05**
			(2.214)	(-3.164)	(-2.123)	(1.980)
Investor Protection	-0.000725**	0.00105***			-0.00100***	0.00147***
	(-2.530)	(3.081)			(-3.292)	(4.173)
Enforcement Quality	0.000286	-0.000509			-0.00395***	0.00511***
	(0.537)	(-0.830)			(-6.888)	(8.089)
Equity Market Development	-3.42e-05***	4.96e-05***			-4.43e-05***	6.18e-05***
	(-6.936)	(8.773)			(-6.416)	(8.101)
ROA	0.421***	-0.540***	0.422***	-0.541***	0.429***	-0.550***
	(49.08)	(-55.57)	(49.77)	(-56.27)	(50.06)	(-56.70)
Size	-0.00915***	0.0121***	-0.00843***	0.0110***	-0.0119***	0.0158***
	(-12.10)	(12.88)	(-11.84)	(12.25)	(-14.57)	(15.55)
Leverage	0.000416***	-0.000482***	0.000359***	-0.000409***	0.000313***	-0.000342**
	(4.000)	(-3.569)	(3.429)	(-3.016)	(2.986)	(-2.511)
Growth	-0.00547***	0.0154***	-0.00579***	0.0158***	-0.00554***	0.0153***
	(-2.911)	(7.191)	(-3.090)	(7.389)	(-2.965)	(7.207)
Shares	0.00194**	-0.00436***	-0.000907	-0.000249	0.00566***	-0.00938***
	(2.270)	(-4.265)	(-1.377)	(-0.316)	(6.002)	(-8.236)
MJ		0.771***		0.772***		0.775***
		(72.43)		(72.99)		(73.52)
ACFO	0.539***		0.540***		0.544***	
	(62.97)		(63.32)		(63.59)	
Constant	0.0198***	-0.0270***	0.0236***	-0.0299***	0.100***	-0.132***
	(2.941)	(-3.542)	(4.280)	(-4.616)	(11.21)	(-13.44)
Industry f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes
N	15,979	15,979	15,979	15,979	15,979	15,979
Adjusted R^2	0.484	0.532	0.485	0.533	0.490	0.540

In this table, we use the modified Jones model (MJ) to capture accruals earnings management.
*, **, *** significant at the 10%, 5% and 1% levels, respectively.
Robust t-statistics in parentheses.
All firm-level variables are winsorized at the 1st and 99th percentiles.

Table 6 Informal institutions and earnings management using the DD model

Variables	Formal Institutions only		Informal Institutions only		Formal & Informal Institutions	
	DD	ACFO	DD	ACFO	DD	ACFO
	(1)	(2)	(3)	(4)	(5)	(6)
Religiosity			-4.10e-05**	4.78e-05	-0.000222***	0.000404***
			(-2.066)	(1.343)	(-8.166)	(8.089)
Power Distance			-0.000167***	0.000280***	-0.000182***	0.000286***
			(-4.825)	(4.775)	(-5.024)	(4.642)
Individualism			4.92e-05*	-0.000124***	-4.72e-05	6.26e-05
			(1.848)	(-2.742)	(-1.536)	(1.157)
Investor Protection	-0.000429*	0.000984**			-0.000643**	0.00143***
	(-1.720)	(2.329)			(-2.449)	(3.180)
Enforcement	0.000217	-0.000559			-0.00281***	0.00469***
	(0.498)	(-0.719)			(-5.894)	(5.513)
Market Development	-2.25e-05***	4.77e-05***			-2.83e-05***	5.78e-05***
	(-5.081)	(6.369)			(-4.759)	(5.544)
ROA	0.303***	-0.493***	0.304***	-0.494***	0.309***	-0.503***
	(44.30)	(-45.08)	(45.02)	(-45.65)	(45.10)	(-45.81)
Size	-0.00747***	0.0117***	-0.00714***	0.0107***	-0.00940***	0.0152***
	(-11.79)	(10.54)	(-11.82)	(10.18)	(-13.63)	(12.75)
Leverage	0.000275***	-0.000394***	0.000230***	-0.000325**	0.000202**	-0.000263*
	(3.150)	(-2.634)	(2.618)	(-2.170)	(2.297)	(-1.745)
Growth	-0.00717***	0.0210***	-0.00740***	0.0214***	-0.00722***	0.0210***
	(-4.455)	(8.076)	(-4.630)	(8.250)	(-4.526)	(8.117)
Shares	0.000829	-0.00485***	-0.000845	-0.00101	0.00345***	-0.00961***
	(1.120)	(-3.851)	(-1.470)	(-1.040)	(4.205)	(-6.940)
DD		0.527***		0.530***		0.537***
		(29.12)		(29.42)		(29.75)
ACFO	0.183***		0.184***		0.187***	
	(28.16)		(28.44)		(28.73)	
Constant	0.0158***	-0.0265***	0.0195***	-0.0285***	0.0724***	-0.123***
	(2.906)	(-2.739)	(4.111)	(-3.674)	(9.782)	(-9.398)
Industry f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes
N	15,979	15,979	15,979	15,979	15,979	15,979
Adjusted R^2	0.301	0.277	0.303	0.2784	0.307	0.284

In this table, we use the DD model to capture accruals earnings management.
*, **, *** denote significance at the 10%, 5% and 1% level respectively.
Robust t-statistics in parentheses.
See Appendix A for variables' definitions.
All firm level variables winsorised at the 1st and 99th percentiles.

Table 7 Informal institutions and earnings management (using different proxies for real earnings management)

Variables	DACC (1)	DACC (2)	RM1 (3)	RM2 (4)
Religiosity	-0.000168***	-0.000218***	0.000820***	0.000655***
	(-3.835)	(-5.322)	(4.599)	(6.495)
Power Distance	-0.000129**	-0.000143***	0.000131	0.000227*
	(-2.357)	(-2.762)	(0.555)	(1.734)
Individualism	-5.37e-05	-6.41e-05	0.000228	0.000162
	(-1.116)	(-1.414)	(1.198)	(1.524)
Investor Protection	-0.000519	-0.000787**	0.00518***	0.00336***
	(-1.288)	(-2.074)	(3.008)	(3.563)
Enforcement Quality	-0.00204***	-0.00252***	0.00718**	0.00649***
	(-2.593)	(-3.419)	(2.270)	(3.683)
Equity Market Development	-2.16e-05**	-3.08e-05***	0.000145***	0.000112***
	(-2.246)	(-3.462)	(4.279)	(5.908)
ROA	0.229***	0.268***	-0.469***	-0.559***
	(31.78)	(36.75)	(-15.07)	(-30.88)
Size	-0.00676***	-0.00860***	0.0324***	0.0250***
	(-6.870)	(-9.186)	(7.359)	(10.34)
Leverage	0.000219*	0.000207*	1.91e-05	-8.63e-05
	(1.925)	(1.885)	(0.0399)	(-0.318)
Growth	-0.00153	0.00109	-0.0359***	-0.0248***
	(-0.653)	(0.496)	(-4.393)	(-5.211)
Shares	0.00231*	0.00428***	-0.0359***	-0.0231***
	(1.948)	(3.803)	(-7.329)	(-8.436)
DACC			0.563***	0.908***
			(13.41)	(38.77)
RM1	0.0284***			
	(13.47)			
RM2		0.136***		
		(35.16)		
Constant	0.0538***	0.0647***	-0.178***	-0.157***
	(4.413)	(5.712)	(-4.074)	(-6.331)
Industry f.e.	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes
N	15,979	15,979	15,979	15,979
Adjusted R^2	0.125	0.221	0.036	0.171

RM1 is computed by adding the abnormal production costs to the abnormal discretionary expenses after multiplying the latter by -1. RM2 is the second measure of real earnings management, which is the aggregation of both the abnormal cash flows and the abnormal discretionary expenses after multiplying them by -1.
*, **, *** significant at the 10%, 5% and 1% levels, respectively.
Robust t-statistics in parentheses.
See Appendix A for all other variable definitions.
All firm-level variables are winsorized at the 1st and 99th percentiles.

Table 8 Income-increasing versus income-decreasing earnings management via accruals

Variables	DACC (Jones)		MJ	
	Income increasing (1)	Income decreasing (2)	Income increasing (3)	Income decreasing (4)
Religiosity	-0.000263***	0.000195***	-0.000236***	0.000182***
	(-7.599)	(5.446)	(-6.726)	(5.161)
Power Distance	-9.43e-05**	0.000204***	-9.99e-05**	0.000193***
	(-2.176)	(4.170)	(-2.286)	(3.985)
Individualism	-0.000103***	7.92e-05*	-9.97e-05**	5.67e-05
	(-2.633)	(1.946)	(-2.529)	(1.403)
Investor Protection	-0.000400	0.000943***	-0.000779**	0.000930***
	(-1.206)	(2.839)	(-2.321)	(2.827)
Enforcement Quality	-0.00192***	0.00267***	-0.00182***	0.00255***
	(-3.031)	(4.229)	(-2.831)	(4.060)
Equity Market Development	-4.15e-05***	1.56e-05**	-3.70e-05***	1.31e-05*
	(-5.308)	(2.093)	(-4.683)	(1.786)
ROA	0.227***	-0.290***	0.237***	-0.295***
	(18.37)	(-34.67)	(18.50)	(-35.20)
Size	-0.0168***	-0.00115	-0.0171***	-0.00160*
	(-19.40)	(-1.322)	(-19.77)	(-1.856)
Leverage	0.000242***	-0.000238**	0.000188**	-0.000227**
	(2.640)	(-2.208)	(1.970)	(-2.088)
Growth	0.00407**	0.0201***	0.00771***	0.0168***
	(2.172)	(10.33)	(4.126)	(8.896)
Shares	0.00848***	0.000478	0.00844***	0.00110
	(8.658)	(0.471)	(8.590)	(1.093)
ACFO	0.324***	-0.325***	0.329***	-0.331***
	(28.22)	(-30.69)	(28.28)	(-31.40)
Constant	0.133***	1.62e-05	0.132***	0.00692
	(13.73)	(0.00159)	(13.50)	(0.684)
Industry f.e.	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes
N	8,175	7,804	8,148	7,831
Adjusted R^2	0.315	0.400	0.323	0.411

In column 1 and column 3, the dependent variable is the positive value of the abnormal accruals. In column 2 and column 4, the dependent variable is the absolute value of the negative abnormal accruals.
*, **, *** significant at the 10%, 5% and 1% levels, respectively.
Robust t-statistics in parentheses.
See Appendix A for all other variable definitions.
All firm-level variables are winsorized at the 1st and 99th percentiles.

Appendix A: Variable definitions

Variable	Source	Definition
Dependent variables		
DACC	Equation 3	Value of the discretionary accruals estimated using the Jones (1991) model.
ACFO	Equation 4	Value of the abnormal cash flow from operations multiplied by -1.
Country-level variables		
Religiosity	Gallup Religiosity Index 2009	"Is religion an important part of your daily life?"
Power Distance	The Hofstede Centre (geert-hofstede.com)	Hofstede's power distance scores.
Individualism	The Hofstede Centre (geert-hofstede.com)	Hofstede's individualism scores.
Investor Protection	See Appendix B/C/D	The (predicted) factor scores computed as linear functions of the observed-variable scores: (1) Revised Anti-Director Rights Index; (2) Anti-Self-Dealing Index; (3) Strength of Investor Protection Index; and (4) Business Extent of Disclosure Index.
Enforcement Quality	See Appendix B/C/D	The (predicted) factor scores computed as linear functions of the observed-variable scores: (1) Regulatory Quality Index; (2) corporate ethics; (3) strength of auditing and reporting standards; (4) efficacy of corporate boards; (5) protection of minority shareholders; and (6) regulation of securities exchanges.
Equity Market Development	See Appendix B/C/D	The (predicted) factor scores computed as linear functions of the observed-variable scores: (1) the ratio of the number of domestic firms listed in a given country to its population; (2) market capitalization of listed companies (% of GDP); and (3) stock market total value traded to GDP.
Firm-level variables		
ROA	Thomson One Banker	Net income divided by total assets.
Size	Thomson One Banker	The natural logarithm of total assets for firm i in year t.
Leverage	Thomson One Banker	The end-of-year total liabilities divided by the end-of-year equity book value for firm i in year t.
Growth	Thomson One Banker	The sales in year t minus sales in year t-1 and scaled by sales in year t-1.
Shares	Thomson One Banker	The natural logarithm of outstanding shares for firm i in year t.

Appendix B: Composite variables of the latent variables

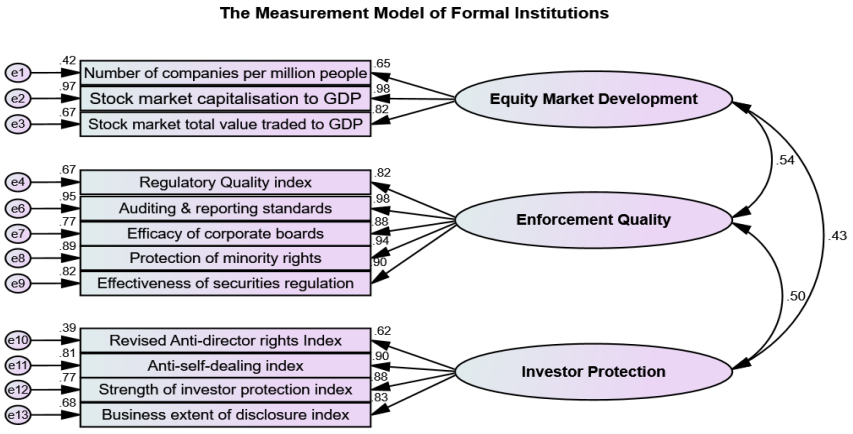
Factor	No. of items	Dimensions	Sub-dimensions	Sources
Equity Market Development	**3**	(1) The national logarithm of the average ratio of the number of domestic firms listed in a given country to its population (in millions) for the period 2006–2010.		World Bank / Global Financial Development (GFD)
		(2) The average ratio of the total market capitalization to the country's GDP for the period 2006–2010.		
		(3) The average ratio of the total value of shares traded to the country's GDP for the period 2006–2010.		
Enforcement Quality	11	(1) Regulatory Quality Index and government investment: the simple average of (1) judicial independence (2); impartial courts; (3) protection of property rights; (4) military interference in rule of law and politics; (5) integrity of the legal system; (6) legal enforcement of contracts; (7) extra payments/bribes/favoritism; and (8) government enterprises and investment.	Judicial independence. "Is the judiciary in your country independent from political influences of members of government, citizens, or firms? No – heavily influenced (= 1) or Yes – entirely independent (= 7)." All variables from the Global Competitiveness Report were converted from the original 1–7 scale to a 0–10 scale using this formula: EFWi = ((GCRi− 1) ÷ 6) × 10.	World Economic Forum / Global Competitiveness Report
			Impartial courts. "The legal framework in your country for private businesses to settle disputes and challenge the legality of government actions and/or regulations is inefficient and subject to manipulation (= 1) or is efficient and follows a clear, neutral process (= 7)." Note the 'rule of law' ratings from the World Bank's Worldwide Governance Indicators (WGI) have been used to fill in country omissions in the primary data source since 1995.	World Economic Forum
			Protection of property rights. This component is from the Global Competitiveness Report question: "Property rights, including over financial assets, are poorly defined and not protected by law (= 1) or are clearly defined and well protected by law (= 7)." Note this replaces a previous Global Competitiveness	World Economic Forum

			Report question on the protection of intellectual property.	
			Military interference in rule of law and politics. This component is based on the International Country Risk Guide: “A measure of the military’s involvement in politics. A system of military government will almost certainly diminish effective governmental functioning, become corrupt, and create an uneasy environment for foreign businesses.” Note the ‘political stability and absence of violence’ ratings from the World Bank’s WGI have been used to fill in country omissions in the primary data source since 1995.	World Economic Forum
			Integrity of the legal system. This component is based on the International Country Risk Guide: “Two measures comprising one risk component. Each sub-component equals half of the total. The ‘law’ sub-component assesses the strength and impartiality of the legal system, and the ‘order’ sub-component assesses popular observance of the law.”	World Economic Forum
			Legal enforcement of contracts. This component is based on the World Bank’s Doing Business estimates for the time and money required to collect a debt. Ratings of 0–10 were constructed for (1) the time cost (measured in the number of calendar days required from the moment the lawsuit is filed until payment); and (2) the monetary cost of the case (measured as a percentage of the debt).	World Economic Forum
			Extra payments / bribes / favoritism. This sub-component is based on the Global Competitiveness Report questions: “In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the following: A – Import and export permits; B – Connection to public utilities (e.g., telephone or electricity); C – Annual tax payments; D – Awarding of public contracts (investment projects); E – Getting	World Economic Forum

			favorable judicial decisions. Common (= 1), Never occur (= 7)"; "Do illegal payments aimed at influencing government policies, laws or regulations have an impact on companies in your country? 1 = Yes, significant negative impact, 7 = No, no impact at all"; and "To what extent do government officials in your country show favoritism to well-connected firms and individuals when deciding upon policies and contracts? 1 = Always show favoritism, 7 = Never show favoritism."	
			Government enterprises and investment. Data on government investment as a share of total investment were used to construct the 0–10 ratings. Countries with more government enterprises and government investment received lower ratings. When the government investment share was generally less than 15% of the total investment, countries were given a rating of 10.	World Economic Forum
		(2) Strength of auditing and reporting standards: "In your country, how would you assess financial auditing and reporting standards regarding company financial performance?" [1 = extremely weak; 7 = extremely strong.]		Global Competitiveness Report
		(3) Efficacy of corporate boards: "How would you characterize corporate governance by investors and boards of directors in your country?" [1 = management has little accountability to investors and boards; 7 = investors and boards exert strong supervision of management decisions.]		Global Competitiveness Report
		(4) Protection of minority rights. "In your country, to what extent are the interests of minority shareholders protected by the legal system?" [1 = not protected at all; 7 = fully protected.]		Global Competitiveness Report
		(5) Effectiveness of securities regulation: "How would you assess the regulation and supervision of securities exchanges in your country?" [1 = ineffective; 7 = effective.]		Global Competitiveness Report

Investor Protection	**7**	(1) Revised Anti-Director Rights Index: an aggregate measure of the legal protection of minority shareholders against expropriation by corporate insiders.		Djankov et al. (2008)
		(2) Anti-Self-Dealing Index (0-1): equals the average of ex-ante and ex-post private control over self-dealing transactions.	(1) Ex-ante private control of self-dealing: identifies the strength of private enforcement of provisions against self-dealing by insiders, focusing on ex-ante control (e.g. requiring approval by disinterested shareholders and ex-ante disclosures).	Djankov et al. (2008)
			(2) Ex-post private control of self-dealing: identifies the strength of private enforcement of provisions against self-dealing by insiders, focusing on ex-post control (e.g. periodic filing requirements and ease of proving wrongdoing).	
		(3) Strength of Investor Protection Index (0–10): the average of: (1) the Extent of Disclosure Index; (2) the Extent of Director Liability Index; and (3) the Ease of Shareholder Suits Index.	(1) Extent of Disclosure Index: identifies the approval and transparency of related-party transactions.	Doing Business Indicators / World Bank Group
			(2) Extent of Director Liability Index: identifies the liability of company directors for self-dealing	
			(3) Ease of Shareholder Suits Index: identifies shareholders' ability to obtain corporate documents before and during litigation.	
		(4) Business Extent of Disclosure Index: identifies the extent to which investors are protected through disclosure of ownership and financial information. The index ranges 0–10, with higher values indicating more disclosure.		World Bank / World Development Indicators

Appendix C: Measurement of formal institutions



Appendix D：Reliability, convergent validity, discriminant validity

Table D-1 Individual loadings (λ), composite reliability (CR), average variance extracted (AVE)

Construct	Indicators	λ	CR	AVE
Equity Market Development	Stock market total value traded	0.82***	0.86	0.69
	Stock market capitalization	0.98***		
	Number of listed companies	0.65***		
Enforcement Quality	Regulatory quality index	0.82***	0.96	0.83
	Strength of auditing and reporting standards	0.98***		
	Efficacy of corporate boards	0.88***		
	Protection of minority shareholders' interests	0.94***		
	Effectiveness of securities regulations	0.91***		
Investor Protection	Business extent of disclosure index	0.83***	0.88	0.66
	Strength of investor protection index	0.88***		
	Anti-self-dealing index	0.90***		
	Revised Anti-Director index	0.62***		

Table D-2 Correlations and inter-construct correlations (SIC)

Construct	1	2	3
1. Equity Market Development	**0.83**		
2. Enforcement Quality	0.54*	**0.91**	
	(0.29)		
3.Investor Protection	0.43*	0.50*	**0.81**
	(0.18)	(0.25)	

Note: Diagonal elements in bold font are the square roots of AVEs. Off-diagonal elements are correlations and SIC. For discriminant validity, diagonal elements should be greater than off-diagonal elements in the same raw and column.

Appendix E: Country-level variables

Country	Investor Protection	Equity Market Development	Enforcement Quality	Power Distance	Individualism	Religiosity
Australia	8.7	141.03	11.91	36	90	32
Austria	5.37	46.11	11.43	11	55	55
Belgium	8.22	76.73	11.22	65	75	33
Bulgaria	8.29	38.65	8.17	70	30	33.5
Denmark	7.63	83.35	11.78	18	74	18
Finland	7.08	100.71	12.18	33	63	28
France	7.27	95.69	11.12	68	71	29.5
Germany	5.82	60.67	11.46	35	67	40.5
Greece	3.6	56.89	9.52	60	35	71.5
Hong Kong	11.87	510.38	11.75	68	25	23
Italy	6.68	42.95	8.28	50	76	71.5
Jordan	4.64	174.27	10.39	70	30	96.5
Netherlands	4.71	100.78	11.54	38	80	33
Norway	7.56	81.09	12.04	31	69	20.5
Philippines	4.64	62.56	9.42	94	32	95.5
Poland	6.26	46.02	9.49	68	60	74.5
Portugal	6.82	53.44	10.07	63	27	71.5
Singapore	11.93	188.57	12.11	74	20	70
South Africa	10.27	232.95	12.24	49	65	84.5
Spain	6.35	110.52	9.74	57	51	49.5
Sweden	6.78	126.88	12.47	31	71	16.5
United Kingdom	11.04	144.36	11.5	35	89	26.5

This table presents country-level variables.