

How does culture impinge upon managers' demeanor of earnings management? Evidence from cross-country analysis

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ABSTRACT

We examine the impact of national culture on earnings. Specifically, we examine managers' likelihood of using accrual or real earnings management and the role of culture on various attributes of earnings (accruals quality, persistence, smoothing, and predictability). We measure national culture using Hofstede's six dimensions of culture (1984, 2001, and 2010). Using data from 36 countries during 1997-2018, we find that managers are likely to use both accruals and real earnings management in high power distance countries. In long-term oriented countries, managers are more likely to use real earnings management. In uncertainty avoidance countries, in high individualist countries, and in higher indulgent versus restraint countries, managers are less likely to use either type of earnings management. In masculine countries, managers tend to use lower accruals management rather and rely on production cost real earnings management. We also find the use of accruals management and the use of real earnings management are substitutes for each other.

In addition, we are able to classify countries into four earnings quality groups based on the culture impact on the earnings attributes (primarily driven by accruals quality, predictability, and smoothing). Persistence is generally not significant in classifying countries by earnings attributes.

Our findings indicate that a universal set of accounting standards is a challenging goal to achieve given the cultural diversity across countries. To improve the existing corporate governance framework and to ensure high quality and uniform financial statements, the enforcement of standards should be tailored to specific cultures, or at a minimum, corporate boards need to be more culturally diversified.

Keywords: Accrual Earnings Management, Real Earnings Management, Earnings Attributes, National Culture, Prospect Theory

JEL Classification: M41

1 Introduction

In this paper, we show that national culture affects the propensity of managers to manage earnings. We examine how national culture influences managers to use either accruals or real earnings management or both. In addition, we demonstrate that national culture also influences various attributes of earnings (accruals quality, persistence, predictability, and earnings smoothing). We measure national culture using Hofstede's six dimensions of culture (1984, 2001, and 2010): uncertainty avoidance, power distance, individualism, masculinity, long-term orientation, and indulgence versus restraint. We rely on prospect theory in designing our hypotheses. Prospect theory is a descriptive theory of decision making under risk. Under prospect theory, value is assigned to gains and losses around a reference point. Around the reference point, the value function is convex for losses and concave for gains. So a \$100 loss will feel more painful than a \$100 gain.¹ Based on this theoretical framework, we argue that various risks of meeting or beating earnings targets affect the managers' choice of earnings management strategies under different dimensions of national culture.

Managers' cultural values have a significant impact on the way they process and understand information. Cultural values also affect the social and interpersonal interactions with others (Lewellyn and Bao 2017). A business firm, ignoring national culture, does so at its own peril.² DaimlerChrysler's acquisition of Mitsubishi is often considered a failure because of ignoring national culture. After the acquisition, DaimlerChrysler replaced some existing managers with German managers. While Japanese managers are politer and paid more attention to the workers' feelings, the German managers were stricter and more pragmatic in their approach. Efficiency dropped.

Ahern, Daminelli, and Fracassi (2015) find that the increasing values in the cross-country difference in power distance and individuality are associated with a decreased number of the cross-border mergers and

¹ Empirically, Hastie and Dawes (2010) indicate that losses feel almost twice as painful for an equivalent gain.

² See Griffith, Myers, and Harvey (2006) and <http://www.commisceo-global.com/blog/cultural-differences-in-international-merger-and-acquisitions#C1>

lower combined announcement returns. These results are consistent with culture differences imposing costly frictions between firms. In related research, Frijns, Dodd, and Cimerova (2016) find that cultural diversification using independent board of directors has a negative impact on firm performance for non-complex firms; specifically, that masculinity reduces the effectiveness of the board.

Earnings management has been examined in many settings. In a survey of CFOs, Dichev, Graham, Harvey, and Rajgopal (2013) document that almost 20% of firms manage earnings and that the earnings management can amount to 10% of earnings per share. In addition, firms with rapid growth, more lawsuits, and more volatile earnings are likely to manage earnings. Slightly more than 92% of CFOs stated that the motivation to manage earnings came from outside pressure to hit earnings benchmarks. Furthermore, Graham, Harvey, and Rajgopal (2005) report that the two important earnings benchmarks are quarterly earnings for the same quarter last year and the analyst consensus estimate. They go on to state that managers are willing to make moderate economic sacrifices to meet the earnings expectations. Stock price is the dominant factor driving earnings management given that the market cares about earnings benchmarks and managers believe that the market often overreacts to earnings announcements³.

Dechow and Skinner (2000) document methods used to manage earnings (both accrual and real cash flow choices). For instance, managers can adjust the amount of expenses reported with the use of overly aggressive or lowered provisions or reserves to meet or beat earnings targets. In addition, they might affect real cash flow choices by postponing or accelerating discretionary expenses (such as R&D or advertising). For instance, Marie Knott (2012) suggests that cutting R&D is an easy approach to meeting targets because R&D is expensed rather than capitalized. The detrimental effects of cutting R&D are not felt for years. Other deferred expenses have damaging long-term effects such as cutting employee training programs or deferring maintenance on machinery and equipment.

³ Evidence that identifies this stock-price motivation can be found in Dichev et al. (2013), Skinner and Sloan (2002)) and Bartov, Givoly, and Hayn (2002).

While the role of corporate boards and audit committees help to mitigate earnings management (see Xie, Davidson, DaDalt (2003)), managers may undertake real activity-based earnings management to meet a specific earnings threshold (Graham et al. 2005; Roychowdhury 2006). While improved corporate governance, imposed by Sarbanes-Oxley and similar norms in other countries, is an attempt to restrict accounting scandals, the norms in other countries have motivated the managers to take real actions to manage earnings (Graham et al. 2005). Auditors cannot easily detect real earnings management, because real actions to manage earnings occur in the ordinary course of business. Moreover, real earnings management can occur at any time of the year, giving the manager enough wealth creation opportunities at the cost of the long-term value of the firm.

The extant literature suggests that the national culture is a factor that influences managers to engage in earnings manipulation around the world. Most of these studies are limited to either accrual earnings management (e.g. Han et al. 2010; Callen et al. 2011) or real earnings management (Paredes and Wheatley 2017). Han et al. and Callen et al. examine accruals earnings management and find opposite results for individualism and uncertainty avoidance. This is most likely because Han et al. (2010) explores only two cultural dimensions while Callen et al. investigate five cultural dimensions. We argue that studies related to earnings management are incomplete without proper consideration of both the real and accrual earnings management measures and including all six of the cultural dimensions. Managers have a choice of techniques to manage earnings and may vary the method they ultimately choose based upon cultural dimensions. Thus, to provide a better explanation of managers' earnings manipulation behavior, we investigate the effect of cultural values on the behavior of managers by considering both accrual-based and real earnings management approaches.⁴ In our paper, we investigate whether the effect of national cultural values on earnings manipulation behavior of managers exists at a cross-country level. Specifically, we probe the influence of six national culture dimensions developed by Hofstede (1984, 2010) and Hofstede

⁴ Mao and Renneboog (2015) also examine both accrual and real earnings management in management buyouts. They find that managers often trade-off between the two based on the likelihood of being detected.

and Hofstede (2001) on the managers' tendencies of conducting earnings management (after controlling for other traditional firm-level and country-level factors).

The *loss-aversion concept* from *prospect theory* proposed by Kahneman and Tversky (1979) help facilitate our understanding of managers' risk preferences. Based on this theoretical framework, the various risks of meeting or beating earnings target affect managers' choice between two earnings management strategies under different dimensions of national culture. Our results show that managers are likely to use both accruals and real earnings management in high power distance countries. In long-term oriented countries, managers are more likely to use real earnings management. In uncertainty avoidance countries, in high individualist countries, and in higher indulgent versus restraint countries, managers are less likely to use either type of earnings management. In masculine countries, managers tend to use lower accruals management rather and not rely on real earnings management.

In addition, we test the trade-off between using real earnings management and accruals management. We find that as the amount of total real earnings management increases, the manager is also likely to fine-tune the earnings numbers using accruals management. This is after controlling for culture and differs from the results reported by Zang (2012). Total real earnings management is the sum of the components of real earnings management: RM_CFO (abnormal cash from operations), RM_Prod (abnormal production costs), and RM_Disc (abnormal discretionary costs).

Based on our findings, we propose that in developing a high-quality corporate governance model and in attempting to increase the uniformity in financial statements, national culture should be considered. The paper is structured as follows. We review the related literature and develop the theoretical framework in Section 2. We discuss the data and the empirical model in Section 3. The empirical results are reported in Sections 4 and 5. Section 6 concludes our study.

2. Literature Review and Hypotheses Development

2.1 Real and accruals earnings management

Analyzing US data, Cohen, Dey, and Lys (2008) find that managers prefer real earnings management following the introduction of the Sarbanes-Oxley Act (SOX) to reach earnings target and to lessen the chance of being detected. However, it is possible for managers to complement accrual earnings management with real earnings management or switch from one type to other to increase their private benefits at the cost of other stakeholders.⁵ In a later study, Cohen and Zarowin (2010) find that managers, at the time of seasoned equity offerings, switch from accrual to real earnings management to manipulate earnings. Finally, Burton et al. (2011) find that auditors are more effective in detecting accruals earnings manipulation in competitive corporate environments, which might lead to more real earnings management in competitive markets.

2.2 Theoretical framework

Prospect theory can help explain the choice of earnings manipulation under uncertainty. The utility of agents depends on the gain or the loss relative to a reference point. The importance of this theory lies in its ability to explain the loss-aversion behavior of an individual, which means that individuals are more sensitive to any loss than they are to an equivalent amount of a gain (the value function is concave in gains and convex in losses). We argue that the loss aversion under prospect theory, together with the risk-aversion feature of agency theory, can provide a more robust explanation for managers' earnings manipulation behavior.⁶

2.3 Hypotheses development

Hofstede's (1984; 2010; 2001) six dimensions of culture are:

UAI - uncertainty avoidance: represents a society's tolerance for uncertainty and ambiguity. High uncertainty avoidance countries tend to have stricter rules and laws and individuals value precision and punctuality. Individuals in low uncertainty avoidance countries tend to be more flexible and have higher tolerances for differing opinions.

⁵ See Cohen et al. (2008), Zang (2012) and Cohen and Zarowin (2010).

⁶ We do not attempt to determine the reference point because as Graham et al. (2005) point out, internal earnings targets tend to differ from externally observed earnings targets. In addition, the reference points can be manipulated. Thus, prospect theory may provide justification for firms issuing management earnings guidance to move the earnings benchmark.

PDI - power distance: based on the degree of equality of individuals in a country. More centralized authority with levels of hierarchy and supervision characterizes higher power distance countries. Lower power distance countries have more decentralized authority and with more participatory management.

INDI – individualism: people in a society consider their own interests without taking the interests of the society as a whole into account. In a low individualism (i.e. high collectivism) country, employees of a firm are considered members of the family of the firm and their interests are more closely aligned with the firm. This can lead to the development of powerful networks that are more susceptible to corruption.

MAS – masculinity: represents a preference for achievement, assertiveness, control, and power. In high masculine countries, managers strive for achievement and recognition.

LTO - long-term orientation: individuals in a long-term-oriented country are focused on long-term goals. High scores are likely to indicate that thrift and persistence are rewarded and that social behavior is oriented towards future rewards. Values in a society with short-term orientation are related to the traits of spending extravagantly and to using available resources instantaneously for quick results.

IVR – Indulgence versus Restraint: This dimension represents a tradeoff between indulgence and restraint. In an indulgent culture, individuals are more optimistic and feel that they have more control over their lives and are more impulsive. Friends are important and freedom of speech is common. In a restrained culture, individuals feel that life is hard and duty rather than freedom is more normal. Stricter moral discipline.

Hofstede suggests that relative national cultural scores should remain constant to a great extent until at least the year 2100 (Hofstede and Hofstede 2001) (Hofstede, 2001, p. 36). Consistent with the literature, we treat the cultural dimensions as time-invariant in our analysis.

2.3.1 Uncertainty Avoidance

If earnings management decreases earnings uncertainty, we will find a positive relation with uncertainty avoidance. Countries with high uncertainty avoidance include Belgium, Japan, and France, while Singapore and Denmark are low uncertainty avoidance countries.

According to the loss-aversion concept of prospect theory, if managers are more sensitive to losses, they will be more concerned about immediate losses and might adopt more high-risk earnings management options (which increases their personal benefits). This leads them to engage, not only in end-of-fiscal year accrual-based earnings management, but also in real activities of earnings management throughout the year.

Because in high uncertainty avoidance countries the financial reporting system is more unified,⁷ there is also an increased chance of accruals management being detected. Thus, we might observe more real earnings management.⁸

2.3.2 Power Distance

Power is centralized in higher power distance countries. Because of this, we expect a positive relation with earnings management (both types). Sweden and Denmark score low on power distance, while the Philippines and Malaysia score high.

In high power distance countries, the power holder uses the accounting system to validate the decisions of the top power holder (Hofstede et al. 2010). Thus, the power holder has incentives to manage earnings. Kim and Sohn (2013) show that, as managers possess high power in a strong accounting system-based country, they are in a better position to bear the costs associated with real earnings management. If managers only employ accrual-based earnings management in a high-power distance country, they face an increased chance of detection by auditors. Consequently, they may lose their personal benefits and even their jobs. We argue that managers are equally likely to engage in real earnings management and in accrual-based earnings management. In addition, individuals at the top of a hierarchical system are able to use accruals management at the end of the year to fine-tune the earnings results.

2.3.3 Individualism

The relation between individualism and earnings management is not clear. Managers located in a country with low individualism desire to protect the welfare of the stakeholders with whom the managers have informal networks and are more acceptable to earnings management. Low levels of individualism can

⁷ Gray's (1988) framework suggests that financial reporting tends to be more uniform in countries with low tolerance for uncertainty and ambiguity - i.e. high uncertainty avoidance.

⁸ Prior studies posit mixed results of the relationship between uncertainty avoidance and accruals management. For instance, Geiger, O'Connell, Clikeman, Ochoa, Witkowski, and Basioudis (2006) argue that when accruals management is used as a mechanism to control for uncertainty, the uncertainty avoidance positively affects the earnings management. But if the accruals management limits future opportunities a negative relation might be observed. Han, Kang, Salter, and Yoo (2010) suggests that managers in high uncertainty societies tend to have a highly secret, yet conservative approach, when engaging in earnings management. This suggests a negative relation between uncertainty avoidance and accruals management

lead to the development of powerful networks where individuals are more likely to follow their ‘extended family’ (Hofstede 1984). Decision-making tends to be based on individual needs. Earnings management is likely to be more acceptable in low individualistic countries.

In a country with high individualism, both flexibility of accounting measurements and the self-governance of managers are more acceptable. Because of this high flexibility, managers may not need to engage in any earnings management.

2.3.4 Masculinity

In high masculine countries, we expect a positive relation with earnings management. In high masculine countries, managers’ behavior is characterized by their ego for high achievements, wealth, and recognition (Hofstede 1984, p 294). In the accounting and the corporate governance literature, earnings management is affected by the incentives of managers (Davidson, Xie, Xu, and Ning 2007). Tang and Koveos (2008) argue that the informal institutions of a country allow the manager’s ego to play a more significant role at work and on earnings reputation.

The accounting system of a country with higher masculinity places more emphasis on achieving financial goals (Hofstede et al. 2010). To demonstrate the achievement and success in high masculinity countries, managers’ have incentives to beat benchmarks. Managers, in high masculine countries, will prefer to report consistent and stable earnings. Thus, real earnings management increases the probability of meeting or beating a benchmark rather than waiting until the end of the year and using accruals management. Managers are more likely to maintain their reputation using real earnings management rather than accruals management because the chance of being detected is lower. However, it is still likely that managers will use accruals management to fine-tune earnings at the end of the year to achieve goals.

2.3.5 Long-term Orientation

Managers, in a long-term-oriented country, are likely to focus on long-term earnings targets and, therefore, the management reward system is more likely to be based on long-term economic outcomes.

Because current earnings are less critical, Douppnik (2008) argues that earnings management is less important in a long-term-oriented country. However, prospect theory suggests that managers are not indifferent between current period losses and current period gains. Thus, managers may still engage in earnings management. Because it is less costly, accrual-based earnings management may be preferred over real earnings management. The prior studies on earnings management show that managers generally ignore the deterioration of the long-term performance when they tend to engage in real earnings management (Cohen and Zarowin 2010; Braam, Nandy, Weitzel, and Lodh 2015) to accelerate the current earnings within a year.

In addition, in short-term oriented countries, both types of earnings management are likely because of the increased focus on short-term goals.

2.3.6 Indulgence versus Restraint

Indulgent societies allow individuals a relatively free glee whereas people in restrained societies usually suppress gratification because of the strict social norms (Hofstede et al., 2010). The position of the societies related to each other based on this IVR index is very new to the researchers. But based on the construction of the IVR, we expect a positive relation with earnings management (both types). Mexico, Nigeria, Brazil score high on indulgence, while France, Japan, Germany score high on restraint. In accounting literature we find evidence of influence of managers' incentive and informal institutions on earnings management (Tang and Koveos, 2008). Thus, manager who belongs to more indulgent society can show an increased illicit behavior compared to the managers of the restrained society. In indulgent society every individual has a clear perception of personal life control and the work ethic is not important to them. Thus, the managers from indulgent society are more sensitive to losses as explained by the prospect theory, as they are concerned about the immediate and future losses associated with their healthier and happier

lifestyle and their reputation. This leads them to engage in end-of-fiscal year accrual-based earnings management and in real activities of earnings management throughout the year.

While we expect that national culture will have an impact on the choice and amount of earnings management and because six dimensions of culture and many interactions among these dimensions, we do not make any directional hypotheses.

3. Data and Empirical Models

We collect the cultural dimensions from Hofstede's (1984; 2001) studies⁹. We consider those countries with sufficient information to construct our earnings management measures. We have observations from 36 countries. We use Worldscope data for estimation of earnings management measures from 1997 to 2018. We exclude Banks and financial firms (SICs 6000-6999) because their financial statements are not comparable with those of non-financial firms. After dropping the missing observations required for earnings management measurement, our final sample includes 19,871 non-financial firms with 224,453 firm-year observations for 36 countries.

We use a performance-adjusted current accruals model (based on Ashbaugh, LaFond, and Mayhew 2003) as our primary measure of accruals earnings management (AEM). See the Appendix for a discussion of the estimation of our earnings management variables. For robustness, we also compute the modified Jones model (see Dechow et al. 1995)¹⁰. We compute three measures of real earnings management and one aggregate measure. We denote the three real earnings-management components as 1) RM_CFO: abnormal level of cash flow from operations, 2) RM_Prod: abnormal level of production costs and 3) RM_Disc: abnormal decrease in discretionary expenses. We multiply both RM_CFO and RM_Disc by negative one so that positive coefficients on all earnings management variables indicate increased levels of earnings

⁹ The culture dimensions can be found at: <https://www.hofstede-insights.com/>.

¹⁰ We computed variations of different accruals models (basic Jones model etc.) with similar results.

management. Our aggregate measure of real earnings management, total REM, is the sum of RM_CFO, RM_Prod, and RM_Disc.

3.3.2 Country level Controls

Leuz et al. (2003) suggest that a country's legal and institutional framework influences the earnings management. Following Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) we use the updated values of *anti-director's rights*, which refers to the strength of a country's legal system in protecting the outside investors' rights, as a proxy for legal institutional control. Managers can be restricted in the possible misuse of their discretionary power in a country with strong anti-director's rights. Consequently, the outside investors are protected by the legal system. In such countries, real earnings management is more likely if it is more difficult to detect.

We include a corruptions index computed yearly by Transparency International. This corruptions perceptions index is scored based on how corrupt a countries public sector is seen to be. This index is measured on a scale from zero (highly corrupt) to 100 (very clean). For instance, in 2018, the United States dropped out of the top 20 and scored 71 (this was 4 points lower than in 2017).

The efficiency of a financial market depends on the stage of economic development of the country concerned. In other words, earnings management might be a consequence of changing economic conditions (Badertscher (2011)). Following the literature on cross-country earnings management behavior (Chaney et al. 2011), we consider *inflation* and *GDP per capita* to control for the possible influence of the business cycle on earnings manipulation of managers in each country. The annual inflation (Consumer Price Index) and the annual GDP (lognormal of the changes in real per capita GDP) are collected from the World Development Indicator produced by the World Bank.

3.3.4 Firm-level controls

We also control for firm characteristics associated with accrual and real earnings management. We control for *firm size* measured by the logarithm of total assets. *Return on Assets (ROA)* is income before

extraordinary items divided by total assets. *ROA* is used to control for firm profitability. Profitable firms are less likely to use earnings management.

One ratio that captures firm growth is the *Market-to-book ratio*. The *Market-to-book ratio* is the market value of equity plus total liabilities divided by total assets. Book to market ratios help control for growth potential.

Leverage is total debt divided by total assets. *Leverage* is included because high levels of debt and debt covenants influence managers to engage in more earnings manipulation to avoid restrictions of debt covenants. This variable is measured by the ratio of total debt to total assets. We include *stock issuance* because firms that want to raise capital tend to engage in earnings management. *Stock issuance* which is an indicator variable equal to one if the firm issued stock during the year. To capture the cross-sectional differences in the level of discretion and consider the different regulations across industries, we control for *industry* effects by using Fama-French 48 Industry classification. To control for the time effect, we also include *year* dummies.

[Insert Tables 1 and 2 about here]

4. Empirical Model and Results

Table 1a reports the summary statistics for the earnings management variables for each of the 36 countries (with the number of observations by country indicated in parentheses). Countries with high average accruals include Indonesia, Singapore, India, and Taiwan. On the other hand, countries with low average accruals include Italy, France, Switzerland, and Australia. Countries with high levels of average real earnings numbers include Israel, Taiwan, South Korea and Malaysia. Lower levels of real earnings management include the United States, United Kingdom, Mexico, and Denmark.

We present the summary statistics of the culture dimensions in Table 1b. Table 1b reports the scores by country for each of the six culture dimensions. The range of scores and the standard deviations for each measure are comparable and should be sufficient dispersion to allow for estimation. For instance, for the

United States, individualism is high (91), but long-term orientation is low (26). While South Korea is exactly opposite; high on long-term orientation (100) but low on individualism (18).

Correlations among the variables are reported in Table 2 (panels A and B). In these panels, we report the correlations between the country-level and firm-level variables used in the analysis. The correlations between accruals and real earnings management is positive and around 0.04

In Table 2a, the last six columns show the correlations among the cultural dimensions. There exist very high negative correlation between Power Distance and Individualism. This trait will become important when we examine earnings attributes later in the paper. In addition, Indulgence vs. Restraint is either highly negatively or positively related to three of other the cultural dimensions. For robustness, we repeat the analysis using instruments for five of the cultural dimensions (we don't compute an instrument for power-distance). (In general, these results are reported in the last column in Table 4) The instruments are the residuals (μ) from the following regressions for country i :¹¹

$$\text{LTO} \quad \text{LTO}_i = \alpha_1 + \beta_1 \text{PDI}_i + \mu_{\text{LTO}}$$

$$\text{UAI} \quad \text{UAI}_i = \alpha_i + \beta_1 \text{PDI} + \beta_2 \text{LTO} + \mu_{\text{UAI}}$$

$$\text{IDV} \quad \text{IDV}_i = \alpha_i + \beta_1 \text{PDI} + \beta_2 \text{LTO} + \beta_3 \text{UAI} + \mu_{\text{IDV}}$$

$$\text{MAS} \quad \text{MAS}_i = \alpha_i + \beta_1 \text{PDI} + \beta_2 \text{LTO} + \beta_3 \text{UAI} + \beta_4 \text{IDV} + \mu_{\text{MAS}}$$

$$\text{IVR} \quad \text{IVR}_i = \alpha_i + \beta_1 \text{PDI} + \beta_2 \text{LTO} + \beta_3 \text{UAI} + \beta_4 \text{IDV} + \beta_5 \text{MAS} + \mu_{\text{IVR}}$$

In our instrument analysis, the levels of Power Distance are used along with the estimated instruments for all remaining dimensions. All regressions using instruments result in a VIF less than three.

We also consider the influence of firm-level unobserved heterogeneity on anti-director rights by using a two-stage least squares estimation (instrumental variable). In particular, we use four dummy

¹¹ We would like to thank Bruce Cooil for suggesting this instrumental variable approach.

variables for the English, French, German and Scandinavian origin of the countries as indicated by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) in 2SLS estimation. We use these legal origin dummy variables as exogenous variables (see La Porta et al. 1998; Leuz et al. 2003) in the first stage. In other words, we regress legal origin on the anti-director rights (an endogenous variable) along with other control variables from our primary regression in the first stage. We test the validity of our instrument and find that our instruments does not suffer from over-identification and weak instrument choice¹². Our instrument was significant at the 0.01 level (not shown). In the second stage, we use the fitted values of the endogenous variable as an independent variable along with culture dimensions and other control variables to explain the variation of two types of earnings management measures across different national cultures. In addition, we test for significance using heteroscedastic-consistent standard errors.

4.1 Main Regression Results

We estimate, in general, the following model:

$$\begin{aligned}
 EM_{it} = & \alpha_0 + \beta_1 PDI_c + \beta_2 MAS_c + \beta_3 LTO_c + \beta_4 INDI_c + \beta_5 UAI_c + \beta_6 IVR_c + \alpha_1 FirmSize_{it} + \alpha_2 Leverage_{it} \\
 & + \alpha_3 Mkt2book_{it} + \alpha_4 ROA_{ct} + \alpha_5 StockIssuance_{it} + \alpha_6 Antidirectors_{it} + \alpha_7 ChgCPI_{ct} \\
 & + \alpha_8 ChgGDP_{ct} + \alpha_9 \sum Industry\ dummies + \alpha_{10} Y \sum_t Year\ dummies \\
 & + \epsilon_{it} \qquad \qquad \qquad (1)
 \end{aligned}$$

where EM_{it} represents the proxy for earnings management. These proxies include the performance adjusted accruals-based measure or the real-activity measures of the firm (total real earnings management (REM), RM_CFO , RM_Prod , or RM_Disc).

The results from the pooled OLS regressions for AEM and REM are reported in Tables 3, 4, and 5. We find that national culture influences the choice of earnings management. Specifically, in high uncertainty avoidance countries as there is a high chance of earnings management to be detected by the auditors because of the unified financial reporting, thus we find negative accrual and real earnings management. We find that power distance has a positive statistical relation with both accruals and total real

¹² We test the validity of the instruments by examining the F-test on the first stage regression. In all cases, the F-test exceeded 20 (which is a test of the joint significance of the instrumental variables)

earnings management (0.0234 and 0.385). Both accrual and total real earnings management are negatively related to individualism (-0.0213 and -0.339). This is consistent with the argument that countries with low individualism are more susceptible to corruption and that earnings management is more acceptable. Managers, in high masculine countries, desire to report consistent and stable earnings and thus, prefer real earnings management to meet or beat a benchmark. In Table 3 we observe significant and negative relation between accrual earnings management and masculinity (-0.0171) but with a significant relation with real earnings management (production cost: 0.00494; discretionary expenses: -0.0205). We find that accruals are negatively and total real earnings management are positively correlated with long-term orientation. We initially felt that managers would be less likely to manage short-term earnings if their orientation was more long term. However, under prospect theory, current period losses appear to outweigh long-term concerns and managers prefer to trade-off between the two types of earnings management. For indulgence, it appears to be a tradeoff between accruals and total real earnings management. The coefficient on accruals is significant and negative (-0.0357) and the coefficient on total real earnings management is significant and positive (0.0203). Countries with higher indulgence tend to use more real earnings management and less accruals management to present a consistent pattern of earnings for the related company.

[Insert Tables 3, 4, and 5 here]

The results for firm-level variables are very interesting. First, we see that higher operating leverage is positively associated with both higher accruals and real earnings management. ROA is negatively related to accruals and real earnings management. Thus, profitable companies prefer to do less earnings management to meet earnings goals. On the other hand, larger firms resort to higher levels of total real earnings management rather than use accruals. However, firms with larger market to book values and higher stock issuance prefer accrual earnings management to real earnings management.

In Table 4, we use the total real earnings management variable, but in Table 5, we replace the total real earnings management variable with its components: RM_CFO (abnormal cash from operations),

RM_Prod (abnormal production costs), and RM_Disc (abnormal discretionary costs). The results reported in Table 5 confirm that except in individualism and uncertainty avoidance culture managers prefer to use abnormal production cost as a measure of real earnings management, whereas, in these two cultural environments they use abnormal discretionary costs. We observe use of abnormal cash from operation where there is a dominance of indulgence culture.

4.2 Robustness tests

We perform several robustness tests for our analysis. In Table 6, we repeat the analysis using robust regression and hierarchical linear models (HLM). In addition, in the last column, we report the results replacing the performance adjusted current accruals model with the modified Jones Model (see Dechow et al. (1995)). Robust regression is used and controls for the sensitivity of the results to outliers and heteroscedasticity. Hierarchical linear models account for shared variance in hierarchical structured data. Cross-country analysis results in two levels, firm level and country-level.

Insert Table 6 here

The results from these alternative estimation methods are consistent with the results reported in Tables 4 and 5; national culture is associated with the various types of earnings management. We believe that the performance-adjusted model that we use based on current accruals is more likely to capture earnings management.

Insert tables 7 and 8 here

4.3 Trade-off between Real Earnings Management and Accruals Earnings Management

In Tables 7 and 8, we provide evidence that culture affects the propensity of managers in choosing between real and accruals earnings management. Because real-earnings management occurs during the year and most accruals earnings management takes place at year-end, we examine accruals earnings management conditional on the amount of unexpected real earnings management during the current year. We compute two measures of unexpected real earnings management. We include this variable in our

regression for accruals earnings management. If there is a trade-off between real and accrual earnings management, we would expect to find a negative coefficient on the unexpected real earnings management variable. Otherwise, if the coefficient is positive, the two methods will be complements of each other.

Our first measure of unexpected real earnings management uses the prior year's level of total real earnings management (REM) as the expected amount of real earnings management. Thus, our first measure of unexpected real earnings management is:

$$Unex(REM) = \frac{REM_t - REM_{t-1}}{REM_{t-1}}$$

Our second measure of unexpected real earnings management uses the prior year's industry median value of total real earnings management¹³, $Ind(REM)$, as the expected amount of real earnings management. The second measure of unexpected real earnings management is:

$$Unex_Ind(REM) = \frac{REM_t - Ind(REM)_{t-1}}{Ind(REM)_{t-1}}$$

The results from estimating the accruals models with the additional unexpected real earnings management variables are reported in Table 7. As shown, the coefficients on both unexpected real earnings management variables are negative and significant (-0.018 and -0.023). This indicates that managers use accruals earnings management to trade-off between accruals and real earnings management. The signs and significance of the cultural dimensions are the same as in Table 3. Our results are similar to Zang (2012). In our model, we control for cultural dimensions, while in her model, unexpected real earnings management is a function of costs. We believe our specification for unexpected real earnings management better captures the spirit of unexpected real earnings management. For instance, if the amount of unexpected real earnings management is increasing, it becomes increasingly costly to continue. Therefore, managers switch to a less costly form of earnings management, i.e. accruals management. Thus, the two types of earnings management serve as substitutes for each other.

¹³ We use Fama-French 48 industries.

Cultural Index: As a way to summarize the aggregate impact of national culture on earnings management, we create a cultural index by country. We compute the index, by using the OLS regression coefficients reported in Table 3 and obtain the predicted amounts using the cultural dimensions. Thus, the cultural indices computed by country are:

$$\text{Accruals Cultural Index}_{country} = \sum_{i=1}^6 (\text{OLS Coefficient}) * (\text{Cultural Dimension}) \quad (2)$$

$$\text{Real Activities Cultural Index}_{country} = \sum_{i=1}^6 (\text{OLS Coefficient}) * (\text{Cultural Dimension}) \quad (3)$$

These results are reported in the first two columns of table 8. Higher values indicated either more accruals management or more real earnings management. These columns could be used in other studies as a control for the effects of culture on earnings management.

In the last two columns of Table 8, the results of the latent class model are presented. In a latent model, earnings quality is an unobservable variable. We use latent analysis to separate countries into class based on a predicted latent earnings quality variable. In this analysis, the cultural indices (computed above) are used in the latent analysis to identify how many cultural classes of accrual and REM exist in the data. This provides another way (in the aggregate) to examine the total influence from all cultural dimensions on earnings management. While the number of classes is not specifically determined, we use the lowest BIC (Bayesian information criteria) to determine the optimal number of classes (4 classes in our paper). The latent model computes a probability for class membership in each of the four classes. The third column of Table 8 provides the expected class membership, while the last column in Table 8, the class with the highest expected probability (must be greater than 50%) is listed. The latent model also predicts the marginal means for accruals and REM as determined by the cultural dimensions. The influence of culture on earnings management are plotted in Figure 1 by latent class membership (by the four classes and the marginal means of accruals and REM for each class). While the classes are increasing in the impact of culture on accruals management, this is not the case with REM. The first class contains two countries (Mexico and Japan) in which the cultural dimensions have a minor influence on accruals management but

the cultural dimensions strongly influence the amount of real earnings management. The four classes of cultural dimensions influencing earnings management can be summarized as:

Class 1: High REM, Lowest Accruals earnings management – 2 countries

Class 2: Lowest REM, moderate Accruals earnings management – 13 countries

Class 3: High Accruals earnings management, Low REM – 11 countries

Class 4: High Accruals earnings management, Highest REM – 10 countries

All four classes are increasing with the use of accruals with classes 2 through 4 increasing with the use of real earnings management. Classes 3 and 4 can be characterized as high accruals countries with low and high real earnings management respectively.

Insert Figure 1 and Table 9 here)

5. Earnings Attributes

In this section, we examine earnings quality as measured by four time-series based earnings quality measures. These measures are: Accruals quality (measured by the standard deviation of discretionary accruals), Income smoothing (measured by the standard deviation of earnings divided by the standard deviation of operating cash flows), persistence (based on the negative of the first-order autoregressive model (AR1) of earnings), and predictive (the standard deviation of the errors in the autoregressive model used from estimating persistence). For all our earnings attributes, lower values indicate higher quality. The mean and standard deviation of each earnings attribute is reported in Table 1 panel c.

Based on Francis, LaFond, Olsson, and Schipper (2005), we compute a rolling 5-year standard deviation of our performance-adjusted accruals for each firm in our sample. Lower values represent higher earnings quality. Similarly, we compute a smoothing index based on Chaney and Lewis (1995 and 1998). This measure has also been employed by Leuz et al. (2003). Smoothness is:

$$Smoothness = \frac{\sigma(\text{Net Income before Extra}_{jt})}{\sigma(\text{CFO}_{jt})}$$

The measure for income smoothing is expected to be less than one. The intuition is that managers do not care as much about managing cash flows and are more concerned about managing earnings. Therefore, the standard deviation of earnings is expected to be less than the standard deviation of cash flows.

Persistence and Predictability are measured as:

$$\frac{\text{Income before Extra}_{jt}}{\text{Common Shares}_{jt}} = \phi_{0j} + \phi_{1j} \left(\frac{\text{Income before Extra}_{j,t-1}}{\text{Common Shares}_{j,t-1}} \right) + v_{jt} \cdot \quad (2)$$

We use the negative of the AR1 parameter (ϕ_{jt}) as our measure of *Persistence*. We measure *Predictability* using the standard deviation of the errors in the autoregressive model (AR1) used to measure *Persistence* (equation (2); see Lipe 1990 and Lee 1999),

$$\text{Predictability} = \sigma(\hat{v}_{jt}). \quad (3)$$

In Table 9, we examine whether the cultural dimensions affect these four earnings attributes: accruals quality, income smoothing, persistence, and predictability. In general, most of the cultural influences on earnings attributes are negative (implying higher quality). The interesting exceptions are the tradeoffs between power distance and individuality. High individualist countries have worse income smoothing and persistence, while not influencing accruals quality or predictability of earnings. On the other hand, power-distance is almost the exact difference. Power distance countries do not influence smoothing or persistence, but influence higher accruals quality and predictability (negative coefficients). This is consistent with the negative correlation reported in Table 2.

As a way to summarize the aggregate impact of national culture on earnings attributes, we repeat our earlier latent class model using the cultural indices of the four earnings attributes. We compute the cultural index for each attribute, by using the OLS regression coefficients reported in Table 9 and obtain the predicted amounts (marginal means) using the cultural variables. Thus, the cultural indices computed by country are reported in the first four columns of Table 10. The last two columns in Table 10 report the results of the expected latent class model. As with the earnings management model, the earnings attribute

model also uses four classes (based on the lowest BIC). The classes are decreasing in earnings quality for three of the four attributes (accruals quality, predictability, and smoothing). Persistence is only significant in predicting classes 2 and 4, but is not a factor in distinguishing quality among many countries (these results are not reported). Countries classified as class 1 have cultural dimensions that lead to higher earnings quality, while countries in class 4 have cultural dimensions leading to lowered earnings quality. These issues can be illustrated by examining Figure 2. As shown, class one has the best accruals quality, smoothing, and predictability. On the other hand, class four has the worst accruals quality, smoothing and predictability.

[Insert Figure 2 about here]

6. Conclusion

In this paper, we examine the impact of the national culture dimensions developed by Hofstede (1984); Hofstede and Hofstede (2001) on the managers' tendencies to conduct two types of earnings management and on four different measures of earnings attributes. To overcome possible shortcomings of agency theory, we employ the loss-aversion concept of prospect theory to facilitate our understanding of managers' risk preferences and thus, construct the theoretical framework of the study. We argue that, under different cultural dimensions, managers consider meeting and beating earnings target as a separate problem, and accordingly, adjust their risk preference and loss avoidance using accrual and real earnings management.

We find that managers are likely to use both accruals and real earnings management in high power distance countries. In long-term oriented countries, managers are more likely to use real earnings management. In uncertainty avoidance countries, in high individualist countries, and in higher indulgent versus restraint countries, managers are less likely to use either type of earnings management. In masculine countries, managers tend to use lower accruals management rather and rely on production cost real earnings

management. We also find the use of accruals management and the use of real earnings management are substitutes for each other.

In addition, we are able to classify countries into four earnings quality groups based on the culture impact on the earnings attributes (primarily driven by accruals quality, predictability, and smoothing). Persistence is not significant in classifying countries by earnings attributes.

Our earnings management and earnings attribute indices help investors assess the likelihood of different forms of earnings management and to assess how national culture influences earnings attributes. These indices can be used in other research studies to control for the likelihood of earnings management due to cultural dimensions and to control for cultural differences on earnings quality.

Our findings suggest that a universal set of accounting standards that are applied consistently is a challenging goal to achieve given the cultural diversity across countries. To improve the existing corporate governance framework and to ensure high quality and uniform financial statements, the enforcement of standards should be tailored to specific cultures, or at a minimum, corporate boards need to be more culturally diversified.

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APPENDIX

Estimation of Accrual Earnings Management Measures:

Our primary measure of discretionary accruals is the absolute value of the performance-adjusted current accrual measure (REDCA) based on Ashbaugh, LaFond, and Mayhew (2003). *REDCA* is computed as the difference between total current accruals (*TCA*) and expected total current accruals (*EPTCA*) as follows:

$$REDCA_{ijt} = TCA_{ijt} - EPTCA_{ijt}. \quad (1a)$$

Where *TCA* and *EPTCA* are computed as follows:

$$TCA_{ijt} = \Delta(\text{Current Assets})_{ijt} - \Delta(\text{Current Liabilities})_{ijt} - \Delta(\text{Cash})_{ijt} + \Delta(\text{Short-term and Current long-term Debt})_{ijt},$$

deflated by lagged total assets.

Where, Δ is the first difference (with respect to time) operator, and

Current Assets (WC02201) is the sum of cash and equivalents, receivables, inventories, prepaid expenses and other current assets.

Current Liabilities (WC03101) represents debt or other obligations that the company expects to satisfy within one year.

Cash (WC02001) represents the sum of cash and short-term investments.

Short-Term and Current Long-Term Debt (WC03051) represents that portion of financial debt payable within one year including current portion of long-term debt and sinking fund requirements of preferred stock or debentures.

Assets (WC02999) are total assets.

To estimate the expected performance-adjusted total current accruals (*EPTCA*), we estimate equation (2)

$$TCA_{it} = \beta_1 \frac{1}{Assets_{it-1}} + \beta_2 \frac{\Delta net sales_{it}}{Assets_{it-1}} + \beta_3 ROA_{it-1} + \beta_4 BusCycle_{it-1} + \varepsilon_{it} \quad (2a)$$

where *Sales* (WC01001) are defined as gross sales and other operating revenue less discounts, returns, and allowances. Lagged *ROA*, computed as operating income after taxes (WC08326) relative to total assets is included to control for firm performance as suggested by (Kothari, Leone, and Wasley 2005). We include two variables as measures of the business cycle. These two variables are PPP (the per capita GDP based on purchasing power parity) and INF (the annual percentage change in consumer prices).¹⁴ The model is estimated by Fama-French industry (Fama and French 1997), pooling the data across countries using all firms with the requisite accounting data in any given year. We exclude financial firms (SIC 6000-6999) throughout the analysis

¹⁴ International Monetary fund, World Economic Outlook Database, April 2009. Alternatively, we used the gross domestic product as a measure of the business cycle with similar results.

Using the parameters from equation (2a), expected performance-adjusted total current accruals (*EPTCA*) are computed as follows in equation (3a):

$$EPTCA_{ijt} = \hat{\beta}_1 \frac{1}{Assets_{ijt-1}} + \hat{\beta}_2 \frac{(\Delta net sales_{ijt} - \Delta AR)}{Assets_{ijt}} + \hat{\beta}_3 ROA_{it-1} + \hat{\beta}_4 BusCycle_{t-1} \quad (3a)$$

Where ΔAR denotes the change in accounts receivables (and is included as suggested by Dechow et al. (1995)) and all other variables are defined earlier.

Estimation of Real Earnings Management Measures

Based on the prior literature (refer Dechow, Sloan, and Sweeney 1995; Gunny 2010; Roychowdhury 2006; Zang 2012; Cohen et al. 2008; Cohen and Zarowin 2010), we develop three proxies for real earnings management. The first proxy for real earnings management is the abnormal level of cash flows from operations (*RM_CFO*). In order to temporarily increase sales volume, managers sometimes increase the price discounts or provide more lenient credit terms. Although this increases the current period earnings, with the passage of time, the firms again come back to old prices. As a result, one can observe a lower cash flow in the current period. So, a *lower value of abnormal cash flows* indicates more real earnings management of this type. For every year, we measure normal cash from operations (CFO) as a linear function of sales and the change in sales as follows:

$$\frac{CFO_{it}}{Assets_{i(t-1)}} = K_1 \frac{1}{Assets_{i(t-1)}} + K_2 \frac{SALES_{it}}{Assets_{i(t-1)}} + K_3 \frac{\Delta SALES_{it}}{Assets_{i(t-1)}} + \varepsilon_{it} \quad \dots \dots \dots (7a)$$

where the abnormal cash flow from operations is the difference between actual CFO and the normal level of CFO, which is the predicted value obtained from Equation (7a).

The second measure of real earnings management is the abnormal production cost (*RM_Prod*). In such cases, managers report lower cost of goods sold through increased production. To reduce per unit fixed costs, manager increase firms' production more than necessary. So, the total cost per unit keeps falling unless or until the reduction in fixed cost per unit is offset by the per unit increase in marginal cost. Given a certain sales level, cash from operations will decrease as the unnecessary production keeps increasing the annual production cost relative to sales. A *higher value of abnormal production costs* indicates more real earnings management of this type. So, for this measure, we calculate the sum of cost of goods sold (COGS) and the change in inventory (ΔINV) during the year as the production cost (PROD). The following linear function of contemporaneous sales represents the COGS:

$$\frac{COGS_{it}}{Assets_{i(t-1)}} = K_1 \frac{1}{Assets_{i(t-1)}} + K_2 \frac{SALES_{it}}{Assets_{i(t-1)}} + \varepsilon_{it} \quad \dots \dots \dots (8a)$$

The inventory growth, which is a linear function of the contemporaneous and lagged change in sales, is as follows:

$$\frac{\Delta INV_{it}}{Assets_{i(t-1)}} = K_1 \frac{1}{Assets_{i(t-1)}} + K_2 \frac{\Delta SALES_{it}}{Assets_{i(t-1)}} + K_3 \frac{\Delta SALES_{it-1}}{Assets_{i(t-1)}} + \varepsilon_{it} \dots\dots\dots (9a)$$

From the above two equations, the normal level of production cost is estimated by the use of the next equation.

$$\frac{PROD_{it}}{Assets_{i(t-1)}} = K_1 \frac{1}{Assets_{i(t-1)}} + K_2 \frac{SALES_{it}}{Assets_{i(t-1)}} + K_3 \frac{\Delta SALES_{it}}{Assets_{i(t-1)}} + K_4 \frac{\Delta SALES_{i(t-1)}}{Assets_{i(t-1)}} + \varepsilon_{it} \dots (10a)$$

The abnormal production cost is the difference between actual PROD and the normal level of PROD, which is the predicted value from Equation (10a).

The last proxy for real earnings management is the abnormal decrease in discretionary expenses (RM_Disc). Discretionary expenses consist of advertising expenses, research and development expenses and SG&A expenses. Managers prefer to increase the current period cash flows by reducing the discretionary expenses. In general, *lower values of abnormal discretionary expenses* indicate more real earnings management of this type. The following linear function of sales represents the normal level of discretionary expenses:

$$\frac{DISC_{it}}{Assets_{i(t-1)}} = K_1 \frac{1}{Assets_{i(t-1)}} + K_2 \frac{SALES_{it}}{Assets_{i(t-1)}} + \varepsilon_{it} \dots (11a)$$

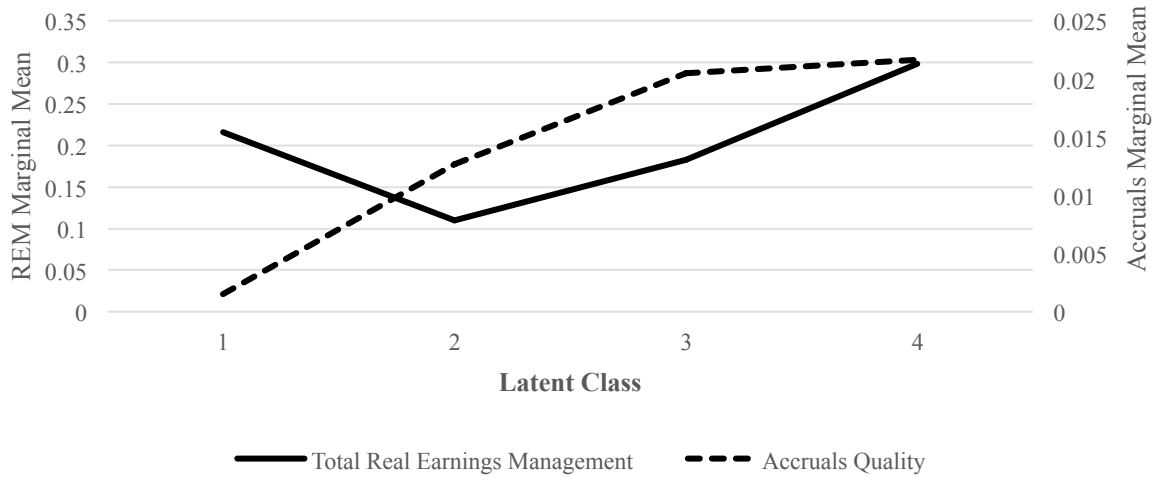
The above regression model gives significantly low residuals if managers manage the requirements to increase sales numbers in the current year. So, to solve this issue, the following model is used to measure the normal level of discretionary expenses as a function of lagged sales:

$$\frac{DISC_{it}}{Assets_{i(t-1)}} = K_1 \frac{1}{Assets_{i(t-1)}} + K_2 \frac{SALES_{i(t-1)}}{Assets_{i(t-1)}} + \varepsilon_{i,t} \dots (12a)$$

The abnormal discretionary expenses are the difference between actual DISC and the normal level of DISC, which is the predicted value from Equation (12a).

Total real earnings management (REM) is computed as the sum of the components of real earnings management (using the negatives of CFO and Disc): RM_CFO (abnormal cash from operations), RM_Prod (abnormal production costs), and RM_Disc (abnormal discretionary costs).

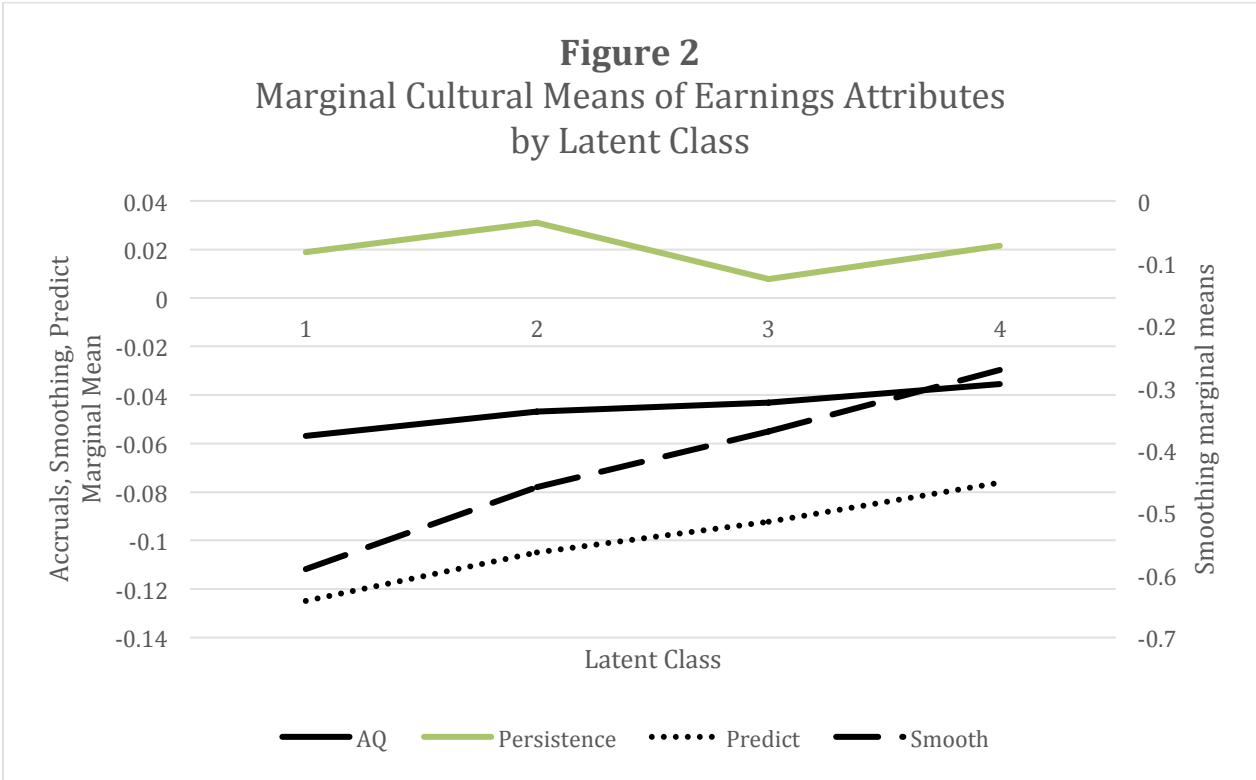
Figure 1
Tradeoff Between Accruals Earnings Management (AEM) and
Real Earnings Management (REM)
Marginal Cultural Means By Latent Class



- Class 1: High REM, Lowest Accruals earnings management – 2 countries
- Class 2: Lowest REM, moderate Accruals earnings management – 13 countries
- Class 3: High Accruals earnings management, Low REM – 11 countries
- Class 4: High Accruals earnings management, Highest REM – 10 countries

Notes: AEM, accruals earnings management, is measured as the performance-adjusted discretionary accruals (see appendix). REM, total real earnings management, is the sum of the three components of real earnings management, -RM_CFO, RM_Prod, and -RM_Disc. The marginal means are the predicted earnings management amount summing the six OLS coefficients on the cultural dimensions times the value of the cultural dimension for each AEM and REM.

Figure 2
Marginal Cultural Means of Earnings Attributes
by Latent Class



Class 1: Best accruals quality, income smoothing, and predictability.

Class 4: Worst accrual quality, income smoothing and predictability.

Notes: AQ is a rolling standard deviation of the performance-adjusted accruals (measured over five years). Smooth is measured as the rolling standard deviation of earnings divided by the standard deviation of operating cash flows (each measured over a five-year period), Persistence is the AR1 time-series coefficient of earnings measured over a five-year period, and predict is the square root of the mean squared error time-series model. The marginal means are the predicted earnings management amount summing the six OLS coefficients on the cultural dimensions times the value of the cultural dimension for each AEM and REM.

Table 1a: Descriptive Statistics – Earnings Management Variables

Country (Obs)		AEM	REM	RM-CFO	RM-DISC	RM-Prod	Country (Obs)		AEM	REM	RM-CFO	RM-Disc	RM-Prod		
Argentina (813)		0.072	-0.123	0.030	0.007	-0.084	Korea-Rep (19287)		0.069	0.019	0.002	-0.010	0.011		
Mean		0.071	0.314	0.120	0.125	0.179			0.080	0.311	0.107	0.140	0.169		
Std. Dev.		Australia (6970)		0.133	-0.087	-0.060	0.107	-0.041	Malaysia (8550)		0.065	-0.016	0.022	-0.021	-0.013
Mean		0.144	0.468	0.218	0.255	0.278	Mexico (1109)		0.074	0.263	0.100	0.107	0.150		
Std. Dev.		Belgium (485)		0.057	-0.198	0.026	0.068	-0.103	Netherlands (884)		0.047	-0.178	0.034	0.044	-0.103
Mean		0.072	0.331	0.157	0.166	0.181	New Zealand (506)		0.057	0.263	0.078	0.135	0.138		
Std. Dev.		Brazil (2793)		0.077	-0.129	0.025	0.035	-0.069	Norway (850)		0.062	-0.225	0.035	0.108	-0.089
Mean		0.094	0.279	0.131	0.119	0.157	New Zealand (506)		0.089	0.473	0.111	0.245	0.308		
Std. Dev.		Canada (2714)		0.158	-0.181	-0.062	0.146	-0.100	Philippines (1393)		0.062	-0.257	0.000	0.114	-0.151
Mean		0.151	0.478	0.261	0.324	0.295	Norway (850)		0.082	0.475	0.163	0.264	0.271		
Std. Dev.		Chile (1946)		0.050	-0.075	0.038	0.038	-0.040	Russia (1840)		0.076	-0.171	0.002	0.068	-0.105
Mean		0.067	0.252	0.115	0.094	0.145	Philippines (1393)		0.094	0.353	0.163	0.198	0.223		
Std. Dev.		China (28820)		0.068	-0.019	0.016	0.004	0.001	Singapore (4684)		0.063	-0.066	0.042	-0.020	-0.044
Mean		0.077	0.251	0.104	0.093	0.149	Russia (1840)		0.079	0.288	0.102	0.123	0.162		
Std. Dev.		Denmark (1016)		0.055	-0.245	0.015	0.109	-0.122	Singapore (4684)		0.083	-0.138	0.031	0.021	-0.083
Mean		0.069	0.404	0.131	0.199	0.206	Singapore (4684)		0.093	0.429	0.139	0.208	0.265		
Std. Dev.		Finland (881)		0.053	-0.262	0.017	0.103	-0.150			0.086	-0.039	0.001	0.016	-0.020
Mean		0.066	0.484	0.103	0.261	0.263			0.100	0.331	0.130	0.147	0.188		
Std. Dev.															

Table 1a: Descriptive Statistics – Earnings Management Variables(continued)

	Country (Obs)	AEM	REM	RM-CFO	RM-DISC	RM-Prod	Country (Obs)	AEM	REM	RM-CFO	RM-Disc	RM-Prod
	Germany (5153)						Spain (433)					
Mean		0.068	-0.190	0.004	0.101	-0.088		0.061	-0.199	0.021	0.047	-0.135
Std. Dev.		0.085	0.448	0.139	0.232	0.274		0.082	0.346	0.099	0.174	0.196
	Greece (2380)						Sweden (2032)					
Mean		0.057	-0.070	0.006	0.022	-0.040		0.064	-0.195	0.009	0.093	-0.095
Std. Dev.		0.066	0.251	0.086	0.109	0.142		0.079	0.400	0.160	0.210	0.218
	Hong Kong (10770)						Switzerland (2128)					
Mean		0.102	-0.040	-0.016	0.038	-0.016		0.050	-0.170	0.024	0.062	-0.083
Std. Dev.		0.121	0.358	0.157	0.181	0.198		0.064	0.410	0.114	0.206	0.225
	India (1825)						Taiwan (20243)					
Mean		0.088	0.010	0.004	-0.075	-0.060		0.062	-0.015	0.024	-0.011	0.000
Std. Dev.		0.101	0.383	0.141	0.185	0.223		0.074	0.295	0.117	0.112	0.159
	Indonesia (4702)						Thailand (6707)					
Mean		0.075	-0.035	0.023	-0.020	-0.029		0.073	-0.020	0.034	-0.020	-0.003
Std. Dev.		0.085	0.316	0.121	0.125	0.176		0.084	0.319	0.129	0.124	0.177
	Ireland (217)						Turkey (2913)					
Mean		0.063	-0.073	0.040	0.010	-0.031		0.082	0.005	0.001	-0.014	-0.006
Std. Dev.		0.078	0.392	0.109	0.159	0.221		0.093	0.293	0.135	0.114	0.157
	Italy (2644)						UK (9318)					
Mean		0.050	-0.303	0.016	0.136	-0.155		0.074	-0.236	0.002	0.122	-0.116
Std. Dev.		0.066	0.347	0.093	0.176	0.196		0.094	0.491	0.162	0.267	0.275
	Japan (47568)						USA (16791)					
Mean		0.041	-0.105	0.005	0.055	-0.046		0.105	-0.303	-0.026	0.198	-0.135
Std. Dev.		0.053	0.344	0.081	0.168	0.188		0.120	0.469	0.221	0.306	0.256

Table 1a: Full Sample

Country (obs)	Accruals EM	Total REM	RM-CFO	RM-Prod	RM-Disc
Mean	0.069	-0.091	0.005	0.044	-0.042
SD	0.089	0.365	0.134	0.189	0.204

Where AEM = accruals earnings management, REM or RM = real earnings management, CFO= cash from operations, DISC=discretionary, and Prod= production.

Table 1b: Cultural Dimensions by Country¹⁵

Country	PDI	IND	MAS	UAI	LTO	IVR
Argentina	49	46	56	86	20	62
Australia	38	90	61	51	21	71
Belgium	65	75	54	94	82	57
Brazil	69	38	49	76	44	59
Canada	39	80	52	48	36	68
Chile	63	23	28	86	31	68
China	80	20	66	30	87	24
Denmark	18	74	16	23	35	70
Finland	33	63	26	59	38	57
France	68	71	43	86	63	48
Germany	35	67	66	65	83	40
Greece	60	35	57	100	45	50
Hong Kong	68	25	57	29	61	17
India	77	48	56	40	51	26
Indonesia	78	14	46	48	62	38
Ireland	28	70	68	35	24	65
Italy	50	76	70	75	61	30
Japan	54	46	95	92	88	42
Korea (Rep.)	60	18	39	85	100	29
Malaysia	100	26	50	36	41	57
Mexico	81	30	69	82	24	97
Netherlands	38	80	14	53	67	68
New Zealand	22	79	58	49	33	75
Norway	31	69	8	50	35	55
Philippines	94	32	64	44	27	42
Russia	93	39	36	95	81	20
Singapore	74	20	48	8	72	46
South Africa	49	65	63	49	34	63
Spain	57	51	42	86	48	44
Sweden	31	71	5	29	53	78
Switzerland	34	68	70	58	74	66
Taiwan	58	17	45	69	93	58
Thailand	64	20	34	64	32	45
Turkey	66	37	45	85	46	49
United Kingdom	35	89	66	35	51	69
United States	40	91	62	46	26	68
Mean	58	47	58	59	62	46
Std. Dev.	18.4	25.8	19.9	24.2	25.5	18.3
Min	13	14	5	8	20	17
Max	100	91	95	100	100	97

¹⁵ The culture dimensions can be found at <https://www.hofstede-insights.com/>.

Table 1c Descriptive statistics – Earnings Attributes

	Accruals Quality					Smooth Persistence					Predictive					
	Mean	Std. Dev.	Mean	Std. Dev.	Predictive	Mean	Std. Dev.	Mean	Std. Dev.	Predictive	Mean	Std. Dev.	Mean	Std. Dev.	Predictive	
Argentina	0.050	0.038	1.037	0.790	0.186	0.059	0.031									
	Mean	Std. Dev.														
Australia	0.092	0.070	1.465	0.971	0.272	0.131	0.105									
	Mean	Std. Dev.														
Belgium	0.038	0.041	1.113	0.771	0.343	0.102	0.086									
	Mean	Std. Dev.														
Brazil	0.056	0.049	0.879	0.704	0.270	0.059	0.058									
	Mean	Std. Dev.														
Canada	0.106	0.066	1.571	0.954	0.164	0.208	0.148									
	Mean	Std. Dev.														
Chile	0.039	0.039	0.902	0.902	0.227	0.048	0.048									
	Mean	Std. Dev.														
China	0.039	0.052	0.692	0.759	0.369	0.034	0.046									
	Mean	Std. Dev.														
Denmark	0.043	0.040	1.109	0.825	0.308	0.064	0.053									
	Mean	Std. Dev.														
Finland	0.040	0.039	1.062	0.778	0.178	0.071	0.042									
	Mean	Std. Dev.														
France	0.033	0.037	0.849	0.684	0.318	0.061	0.074									
	Mean	Std. Dev.														
Korea (Rep.)	0.052	0.044	0.900	0.769	0.194	0.057	0.045									
	Mean	Std. Dev.														
Malaysia	0.049	0.042	0.912	0.778	0.283	0.048	0.033									
	Mean	Std. Dev.														
Mexico	0.034	0.033	0.951	0.739	0.300	0.039	0.020									
	Mean	Std. Dev.														
Netherlands	0.043	0.043	1.090	0.824	0.405	0.064	0.046									
	Mean	Std. Dev.														
New Zealand	0.041	0.046	0.821	1.065	0.417	0.046	0.040									
	Mean	Std. Dev.														
Norway	0.058	0.055	1.461	0.958	0.123	0.083	0.058									
	Mean	Std. Dev.														
Philippines	0.046	0.045	0.786	0.786	0.243	0.045	0.037									
	Mean	Std. Dev.														
Russia	0.058	0.052	0.990	0.784	0.180	0.057	0.036									
	Mean	Std. Dev.														
Singapore	0.064	0.064	1.074	0.889	0.230	0.088	0.064									
	Mean	Std. Dev.														
South Africa	0.049	0.042	0.936	0.766	0.307	0.053	0.030									
	Mean	Std. Dev.														

Notes: Accruals quality (measured by the standard deviation of discretionary accruals), Income smoothing (measured by the standard deviation of earnings divided by the standard deviation of operating cash flows), persistence (based on a first-order autoregressive model (AR1) of earnings), and predictive (the standard deviation of the errors in the autoregressive model used from estimating persistence).

Table 1c Descriptive statistics – Earnings Attributes (continued)

		Accruals Quality	Smooth	Persistence	Predictive		Accruals Quality	Smooth	Persistence	Predictive	
Germany	Mean	0.049	0.956	0.245	0.063	Spain	Mean	0.049	0.944	0.691	0.026
	Std. Dev.	0.046	0.793	0.350	0.056		Std. Dev.	0.053	0.797	0.159	0.022
Greece	Mean	0.043	0.950	0.445	0.039	Sweden	Mean	0.049	1.103	0.284	0.077
	Std. Dev.	0.037	0.812	0.307	0.024		Std. Dev.	0.046	0.800	0.339	0.075
Hong Kong	Mean	0.075	1.260	0.249	0.130	Switzerland	Mean	0.037	1.084	0.177	0.076
	Std. Dev.	0.062	0.995	0.373	0.114		Std. Dev.	0.038	0.779	0.327	0.071
India	Mean	0.061	0.831	0.359	0.062	Taiwan	Mean	0.048	0.792	0.267	0.053
	Std. Dev.	0.058	0.792	0.331	0.030		Std. Dev.	0.042	0.643	0.366	0.033
Indonesia	Mean	0.058	0.946	0.222	0.057	Thailand	Mean	0.054	0.854	0.267	0.057
	Std. Dev.	0.048	0.861	0.383	0.042		Std. Dev.	0.046	0.708	0.378	0.036
Ireland	Mean	0.043	1.201	0.522	0.055	Turkey	Mean	0.064	0.844	0.106	0.068
	Std. Dev.	0.038	0.755	0.280	0.010		Std. Dev.	0.052	0.681	0.399	0.046
Italy	Mean	0.038	0.873	0.294	0.042	United Kingdom	Mean	0.055	1.222	0.280	0.105
	Std. Dev.	0.039	0.727	0.362	0.035		Std. Dev.	0.051	0.870	0.364	0.089
Japan	Mean	0.030	0.765	0.241	0.037	United States	Mean	0.069	1.273	0.258	0.119
	Std. Dev.	0.030	0.676	0.343	0.030		Std. Dev.	0.057	0.881	0.380	0.085

Notes: Accruals quality (measured by the standard deviation of discretionary accruals), Income smoothing (measured by the standard deviation of earnings divided by the standard deviation of operating cash flows), persistence (based on a first-order autoregressive model (AR1) of earnings), and predictive (the standard deviation of the errors in the autoregressive model used from estimating persistence).

Table 2 Panel A: Correlation matrix – Earnings Management and Cultural Dimensions (n=224,452)

	1	2	3	4	5	6	7	8	9	10	11
1 AEM (accruals earnings manage)	1										
2 REM (real earnings manage.)	0.042	1.000									
3 RM-CFO	-0.239	-0.419	1.000								
4 RM-Prod	0.068	0.919	-0.312	1.000							
5 RM-Disc	0.154	-0.722	-0.186	-0.559	1.000						
6 Power distance (PDI)	-0.042	0.172	0.074	0.145	-0.236	1.000					
7 Masculinity (MAS)	-0.114	-0.056	-0.024	-0.039	0.085	-0.120	1.000				
8 Uncertainty avoidance (UAI)	-0.150	0.009	0.019	0.006	-0.024	-0.243	0.331	1.000			
9 Long-term orientation (LTO)	-0.166	0.134	0.055	0.129	-0.162	0.209	0.263	0.368	1.000		
10 Individualism (IDV)	0.094	0.094	-0.232	-0.092	-0.204	0.304	-0.746	0.224	-0.036	-0.577	1.000
11 Indulgence vs Restraint (IVR)	0.062	-0.145	-0.032	-0.130	0.168	-0.544	-0.147	0.010	-0.599	0.619	1

Table 2 Panel B - Correlation matrix- Earnings Management, country level controls, and firm level controls (n=224,452)

	1	2	3	4	5	6	7	8	9	10	11
1 AEM	1										
2 REM	0.042	1.000									
3 Anti-director right	-0.010	-0.014	1.000								
4 CPI (Change)	0.087	0.024	-0.081	1.000							
5 GDP (Change)	-0.015	-0.004a	0.075	-0.131	1.000						
6 Corruption	0.037	-0.134	0.484	-0.383	0.049	1.000					
7 ROA	-0.305	-0.128	-0.037	0.010	0.038	-0.170	1.000				
8 Log of Assets	-0.265	0.021	-0.112	-0.043	-0.021	-0.064	0.329	1.000			
9 Leverage	0.182	0.100	-0.060	0.067	0.005	-0.095	-0.178	0.082	1.000		
10 Market-to-Book	0.260	-0.152	-0.196	0.023	0.009	-0.002a	-0.222	-0.198	0.139	1.000	
11 Stock issuance	0.134	-0.103	0.174	-0.015	0.018	0.283	-0.150	-0.010	-0.002a	-0.002a	1

a = not significant. All remaining variables are significant at the 0.001 level.

Performance-adjusted accruals is AEM, as defined in the appendix. Total Real Earnings Management (REM) is the sum of the three components of real earnings management, -RM_CFO, RM_Prod, and -RM_Disc. *Return on Assets (ROA)* is income before extraordinary items divided by total assets. *Firm size* is the natural logarithm of assets. *Leverage* is total debt divided by total assets. *Market-to-Book* ratio is market value of equity plus total liabilities divided by total assets. *Stock issuance* which is an indicator variable equal to one if the firm issued stock during the year. *Anti-directors' rights* is the revised index from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008), *CPI (change)* is change in the Consumer Price Index, *Corruption* is from Transparency.org and measures the perceived corruption of the countries public sector and GDP (change) is the change in real per capita GDP by country.

Table 2c: Descriptive statistics of independent variables (n= 224,452)

Variable	Mean	Std dev.	p25	Median	p75
Country Level					
Anti-directors rights	3.644	1.271	3.000	4.000	4.500
Change in GDP per Capita	-0.231	2.586	-1.440	-0.100	1.120
Corruption	62.414	23.539	39.000	69.000	85.000
Inflation (change in CPI)	2.086	2.844	0.467	1.680	2.895
Firm Level					
ROA	0.008	0.159	-0.002	0.028	0.069
Firm size (log of assets)	12.307	1.915	11.068	12.211	13.466
Leverage (total debt to assets)	0.251	0.286	0.050	0.200	0.370
Market to book ratio	1.672	1.764	0.882	1.157	1.775
Stock issuance	0.318	0.466	0.000	0.000	1.000

Notes: *Return on Assets (ROA)* is income before extraordinary items divided by total assets. *Firm size* is the natural logarithm of total assets. *Leverage* is total debt divided by total assets. *Book-to-Market* ratio is the book value of equity divided by market value of equity. *Stock issuance* which is an indicator variable equal to one if the firm issued stock during the year. *Inflation* comes from the Consumer Price Index and *GDP* is the change in real per capita GDP by country, *corruption* is from Transparency.org and measures the perceived corruption of the countries public sector.

Table 3: Performance-Adjusted Accruals and Culture

	Accruals	Accruals	Accruals	Accruals	Accruals	Accruals	Accruals
PDI	0.0208*** (13.32)						0.0234*** (13.61)
MAS		-0.0237*** (-31.08)					-0.0171*** (-16.52)
LTO			-0.00904*** (-11.44)				-0.0119*** (-15.17)
IDV				-0.0102*** (-9.71)			-0.0213*** (-15.29)
IVR					-0.0191*** (-14.99)		-0.0357*** (-22.19)
UAI						-0.0218*** (-29.95)	-0.000164*** (-18.43)
Leverage	0.0447*** (39.65)	0.0438*** (38.78)	0.0447*** (39.64)	0.0444*** (39.31)	0.0444*** (39.46)	0.0444*** (39.56)	0.0434*** (38.70)
ROA	-0.0870*** (-34.67)	-0.0878*** (-34.95)	-0.0853*** (-33.95)	-0.0877*** (-34.71)	-0.0866*** (-34.56)	-0.0877*** (-35.05)	-0.0876*** (-34.70)
Stock issue	0.0143*** (34.01)	0.0124*** (29.22)	0.0128*** (30.01)	0.0146*** (34.12)	0.0148*** (34.62)	0.0128*** (30.45)	0.0123*** (28.31)
Market-to-Book	0.00735*** (38.12)	0.00745*** (38.59)	0.00732*** (37.90)	0.00745*** (38.53)	0.00734*** (38.14)	0.00706*** (36.61)	0.00712*** (36.78)
Log of Assets	-0.00869*** (-70.95)	-0.00825*** (-66.54)	-0.00857*** (-70.50)	-0.00864*** (-70.02)	-0.00887*** (-72.29)	-0.00832*** (-67.56)	-0.00822*** (-65.51)
Anti director	-0.00177*** (-10.42)	-0.00130*** (-7.77)	-0.00129*** (-7.69)	-0.00169*** (-10.02)	-0.00145*** (-8.72)	0.000461** (-2.56)	-0.000900*** (-4.53)
Corruption	0.00021*** (11.84)	0.00011*** (8.52)	0.00004*** (3.08)	0.000158*** (9.65)	0.000139*** (9.83)	0.000011 (0.81)	0.00021*** (10.40)
CPI (change)	0.00230*** (26.78)	0.00179*** (21.60)	0.00192*** (21.80)	0.00238*** (26.50)	0.00238*** (26.98)	0.00184*** (22.23)	0.00158*** (18.31)
GDP (change)	0.000228** (2.23)	0.000200** (1.97)	0.000101 (0.99)	0.000272*** (2.65)	0.000235** (2.30)	0.00011 (1.09)	0.000108 (1.06)
Intercept	0.105*** (35.19)	0.133*** (52.50)	0.130*** (49.81)	0.123*** (48.45)	0.131*** (50.99)	0.131*** (51.57)	0.0977*** (31.64)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	224,215	224,215	224,215	224,215	224,215	224,215	224,215
Adj. R-squared	0.211	0.213	0.211	0.211	0.212	0.214	0.217

Notes: * p<0.05, ** p<0.01, *** p<0.001

The dependent variable, Accruals, is the absolute value of the performance-adjusted current accruals (see appendix). The cultural dimensions are *PDI* (power distance), *MAS* (masculinity), *LTO* (long-term orientation), *IDV* (individualism), *IVR* (indulgent versus restraint), and *UAI* (uncertainty avoidance), *Return on Assets (ROA)* is income before extraordinary items divided by total assets. *Firm size* is the natural logarithm of total assets. *Leverage* is total debt divided by total assets. *Book-to-Market* ratio is the book value of equity divided by market value of equity. *Stock issuance* which is an indicator variable equal to one if the firm issued stock during the year. *Inflation* comes from the Consumer Price Index and *GDP* is the change in real per capita GDP by country, *corruption* is from Transparency.org and measures the perceived corruption of the countries public sector. The last column uses the instruments for MAS, LTO, IDV, IVR, and UAI.

Table 4: Total Real Earnings Management (REM) and Culture

	REM	REM	REM	REM	REM	REM	REM
PDI	0.308*** (48.79)						0.385*** (50.79)
MAS		-0.0775*** (-20.17)					0.0024 (0.47)
LTO			0.172*** (50.76)				0.162*** (48.34)
IDV				-0.358*** (-81.67)			-0.339*** (-55.12)
IVR					-0.210*** (-41.98)		0.0203*** (3.13)
UAI						-0.0575*** (-17.99)	-0.0451*** (-10.53)
Leverage	0.0968*** (22.90)	0.0937*** (22.12)	0.0952*** (22.70)	0.0877*** (21.05)	0.0938*** (22.25)	0.0957*** (22.55)	0.0872*** (20.87)
ROA	-0.490*** (-63.14)	-0.485*** (-62.20)	-0.499*** (-64.36)	-0.531*** (-68.51)	-0.484*** (-62.47)	-0.484*** (-62.03)	-0.536*** (-68.78)
Stock issuance	-0.0424*** (-23.23)	-0.0545*** (-29.36)	-0.0310*** (-16.70)	-0.0218*** (-11.97)	-0.0395*** (-21.46)	-0.0525*** (-28.61)	-0.0228*** (-12.20)
Market-to-Book	-0.0368*** (-46.79)	-0.0360*** (-45.74)	-0.0349*** (-44.65)	-0.0340*** (-43.95)	-0.0366*** (-46.67)	-0.0370*** (-46.39)	-0.0346*** (-43.94)
Log of Assets	0.00745*** (15.37)	0.00874*** (17.59)	0.00483*** (10.00)	0.00928*** (19.19)	0.00541*** (11.11)	0.00829*** (16.91)	0.00974*** (19.50)
Anti director	0.00757*** (10.88)	0.0146*** (21.16)	0.0146*** (21.23)	0.000702 (1.02)	0.0129*** (18.78)	0.0193*** (25.84)	0.00730*** (8.19)
Corruption	-0.00134*** (-19.40)	-0.00334*** (-59.53)	-0.00308*** (-56.78)	-0.000124* (-1.92)	-0.00265*** (-47.10)	-0.00364*** (-66.54)	-0.000645*** (-7.43)
CPI (change)	-0.00384*** (-13.50)	-0.00672*** (-22.91)	-0.000068 (-0.23)	0.00107*** (3.59)	-0.00337*** (-11.91)	-0.00633*** (-21.82)	0.000828*** (2.68)
GDP (change)	0.000128 (0.33)	-0.000391 (-0.99)	0.00130*** (3.30)	0.00244*** (6.23)	0.0000623 (0.16)	-0.00063 (-1.60)	0.00241*** (6.14)
Intercept	-0.187*** (-13.01)	0.129*** (9.88)	-0.0147 (-1.11)	0.0774*** (5.92)	0.175*** (13.23)	0.116*** (8.93)	-0.299*** (-19.88)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	224,452	224,452	224,452	224,452	224,452	224,452	224,452
Adj. Squared	0.117	0.11	0.119	0.139	0.115	0.110	0.141

Notes: * p<0.05, ** p<0.01, *** p<0.001

REM is total real earnings management and is the sum of the components of real earnings management: -RM_CFO (abnormal cash from operations), RM_Prod (abnormal production costs), and -RM_Disc (abnormal discretionary costs). The

cultural dimensions are *PDI* (power distance), *MAS* (masculinity), *LTO* (long-term orientation), *IDV* (individualism), *IVR* (indulgent versus restraint), and *UAI* (uncertainty avoidance), *Return on Assets (ROA)* is income before extraordinary items divided by total assets. *Firm size* is the natural logarithm of total assets. *Leverage* is total debt divided by total assets. *Book-to-Market* ratio is the book value of equity divided by market value of equity. *Stock issuance* which is an indicator variable equal to one if the firm issued stock during the year. *Inflation* comes from the Consumer Price Index and *GDP* is the change in real per capita GDP by country, *corruption* is from Transparency.org and measures the perceived corruption of the countries public sector. The last column uses the instruments for MAS, LTO, IDV, IVR, and UAI

Table 5: Components of Total Real Earnings Management (TEM) by Components

	REM	RM_CFO	RM_Prod	RM_Disc
PDI	0.385*** (50.79)	0.0290*** (12.18)	0.199*** (46.29)	0.167*** (44.90)
MAS	0.0024 (0.47)	0.0189*** (13.39)	0.00494* (1.65)	-0.0205*** (-8.20)
LTO	0.162*** (48.34)	0.0280*** (26.16)	0.0880*** (46.83)	0.0492*** (29.95)
IDV	-0.339*** (-55.12)	0.0104*** (5.26)	-0.189*** (-54.54)	-0.169*** (-56.07)
IVR	0.0203*** (3.13)	-0.0315*** (-14.18)	0.0257*** (7.08)	0.0288*** (9.20)
UAI	-0.0451*** (-10.53)	0.000614 (0.48)	-0.0238*** (-9.82)	-0.0231*** (-10.83)
Leverage	0.0872*** (20.87)	0.0307*** (14.88)	0.0525*** (19.84)	0.00800*** (2.90)
ROA	-0.536*** (-68.78)	-0.447*** (-123.71)	-0.311*** (-68.18)	0.198*** (38.22)
Stock issuance	-0.0228*** (-12.20)	0.0180*** (28.69)	-0.0104*** (-9.78)	-0.0311*** (-32.72)
Market-to-book	-0.0346*** (-43.94)	-0.00460*** (-13.85)	-0.0155*** (-34.63)	-0.0160*** (-29.94)
Log of Assets	0.00974*** (19.5)	-0.00473*** (-26.20)	0.0122*** (38.93)	0.00286*** (10.45)
Anti director	0.00730*** (8.19)	-0.00212*** (-7.54)	0.00141*** (2.78)	0.00798*** (17.72)
Corruption	-0.000645*** (-7.43)	0.000232*** (8.25)	-0.000238*** (-4.84)	-0.000654*** (-15.40)
CPI (change)	0.000828*** (2.68)	0.000903*** (7.38)	-0.00018 (-1.05)	0.000142 (1.07)
GDP (change)	0.00241*** (6.14)	0.000201 (1.43)	0.00140*** (6.29)	0.000896*** (4.85)
Intercept	-0.299*** (-19.88)	0.0325*** (7.17)	-0.265*** (-31.52)	-0.0683*** (-8.64)
Observations	224,452	224,452	224,452	224,452
Adj. R-square	0.14	0.314	0.123	0.189

Notes: * p<0.05, ** p<0.01, *** p<0.001

REM is total real earnings management and is the sum of the components of real earnings management, -RM_CFO (abnormal cash from operations), RM_Prod (abnormal production costs), and -RM_Disc (abnormal discretionary costs).

Table 6: Robustness Tests – Alternative Estimation Methods

Partial regression results

	Robust Reg.		HLM		Instrumental Variables		Modified Jones Model	
Dependent variable	Accruals		Accruals		Accruals		Accruals	
<u>Culture variables</u>								
PDI	0.00998	***	0.02342	***	0.01374	***	0.02073	***
MAS	-0.00981	***	-0.0171	***	-0.01542	***	-0.01705	***
LTO	-0.00486	***	-0.01187	***	-0.01167	***	-0.01232	***
IDV	-0.01032	***	-0.02127	***	-0.01664	***	-0.01971	***
IVR	-0.01142	***	-0.03574	***	-0.03293	***	-0.03721	***
UAI	-0.00909	***	-0.01639	***	-0.02428	***	-0.01555	***
Dependent variable	REM		REM		REM			
<u>Culture variables</u>								
PDI	0.003483	***	0.003851	***	0.003721	***		
MAS	0.00001		0.000024		0.000040			
LTO	0.001711	***	0.001625	***	0.001627	***		
IDV	-0.00266	***	-0.00339	***	-0.00333	***		
IVR	-0.00024	***	0.000203	***	0.00024	***		
UAI	-0.00023	***	-0.00045	***	-0.00056	***		
Control Variables	Yes		Yes		Yes		Yes	
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	

Notes: * p<0.05, ** p<0.01, *** p<0.001

Table 7

**The Tradeoff between Accruals and Real Earnings Management
Two Measures of Unexpected Real Earnings Management.**

Dependent Variable: Performance-adjusted accruals

	Coef	t-value		Coef	t-value	
Intercept	0.085	28.88	***	0.093	32.39	***
Unex(REM)	-0.018	-2.55	**			
Unex_Ind(REM)				-0.023	-11.46	***
PDI	0.025	14.14	***	0.025	14.34	***
MAS	-0.015	-14.51	***	-0.016	-15.21	***
LTO	-0.010	-12.68	***	-0.010	-12.83	***
UAI	-0.017	-18.93	***	-0.017	-18.98	***
IDV	-0.022	-15.53	***	-0.022	-15.33	***
IVR	-0.035	-20.79	***	-0.037	-22.69	***
Anti-director	-0.001	-4.09	***	-0.001	-5.1	***
CPI (change)	0.002	20.88	***	0.002	22.23	***
GDP (change)	0.000	0.84		0.000	0.9	
Corruption	0.025	11.73	***	0.024	11.83	***
ROA	-0.085	-34.23	***	-0.081	-36.01	***
Log of assets	-0.008	-58.31	***	-0.008	-65.1	***
Leverage	0.041	31.88	***	0.041	34.71	***
Market-to-book	0.007	30.71	***	0.007	33.3	***
Stock issuance	0.011	24.57	***	0.0123	28.56	***
Observations	201,047			221,778		
Adj R-Squared	0.214			0.223		

Notes: * p<0.05, ** p<0.01, *** p<0.001, Heteroscedastic-consistent standard errors are estimated. Unex(REM) is unexpected total real earnings management using the firm's REM from the prior year as the expected REM, Unex_Ind(REM) is unexpected total real earnings management using the median industry REM from the prior year as the expected REM, other variables are as defined previously. Descriptive statistics for the unexpected REM are reported below:

Variable	25th Pct	Median	75th Pct	Std. Dev
unexRemIND	-2.5717	-0.0392	2.9271	11.027
unexREM	-0.7486	-0.1558	0.3151	3.224

Table 8
Cultural Indices for Earnings Management
Tradeoff between Accruals and Real Earnings Management
Cultural Marginal Means by Latent Classes

Country	Predicted Accruals	Predicted REM	Expected Class	Latent Class
Argentina	0.0152	0.1861	2.9270	3
Australia	0.0125	0.0633	2.0005	2
Belgium	0.0057	0.1012	2.0004	2
Brazil	0.0149	0.2221	3.0227	3
Canada	0.0139	0.1045	2.0171	2
Chile	0.0179	0.2646	3.9242	4
China	0.0223	0.3213	3.9999	4
Denmark	0.0244	0.1460	2.9368	3
Finland	0.0229	0.1555	2.9482	3
France	0.0153	0.1087	2.0377	2
Germany	0.0125	0.1551	2.3331	2
Greece	0.0144	0.2195	2.9921	3
Hong Kong	0.0312	0.2957	3.9991	4
India	0.0277	0.2042	3.0135	3
Indonesia	0.0240	0.3222	3.9999	4
Ireland	0.0152	0.1459	2.3924	2
Italy	0.0176	0.1015	2.0471	2
Japan	0.0026	0.2075	1.0114	1
Korea (Rep.)	0.0190	0.3059	3.9995	4
Malaysia	0.0198	0.2759	3.9817	4
Mexico	-0.0011	0.2419	1.0002	1
Netherlands	0.0168	0.1131	2.0825	2
New Zealand	0.0109	0.1134	2.0122	2
Norway	0.0290	0.1383	2.9752	3
Philippines	0.0237	0.2442	3.5888	4
Russia	0.0242	0.2059	3.0134	3
Singapore	0.0229	0.3339	4.0000	4
South Africa	0.0140	0.1505	2.3775	2
Spain	0.0205	0.1734	2.9695	3
Sweden	0.0202	0.1569	2.8914	3
Switzerland	0.0042	0.1578	1.7076	2
Taiwan	0.0098	0.3231	3.9884	4
Thailand	0.0273	0.2843	3.9954	4
Turkey	0.0185	0.2194	3.0482	3
United King..	0.0089	0.0906	2.0011	2
United States	0.0133	0.0636	2.0006	2

Notes: The predicted marginal value for AEM and REM is computed as the sum of the six OLS regression coefficients times the six country cultural dimensions. The expected class is the sum of the latent class model

prediction probabilities for each class times the class (class 1, 2, 3, or 4). The listed class is the specific class with the highest expected probability (greater than 0.50).

Table 9: Earnings Attributes and Culture

Dependent Variable	Accruals Quality		Smoothing		Persistence		Predictability	
PDI	-0.0084 *** (-6.68)		-0.0214 (-0.78)		0.0278 (0.85)		-0.0288 *** (-6.80)	
MAS	-0.0174 *** (-28.17)		-0.254 *** (-18.38)		-0.0669 *** (-3.94)		-0.0293 *** (-13.66)	
LTO	-0.0123 *** (-16.09)		-0.203 *** (-12.50)		0.0716 *** (4.15)		-0.0297 *** (-12.13)	
IDV	-0.00109 (-1.15)		0.265 *** (13.06)		0.0523 ** (2.18)		0.00173 (0.50)	
IVR	-0.031 *** (-33.50)		-0.374 *** (-19.19)		-0.102 *** (-5.05)		-0.0596 *** (-18.33)	
UAI	-0.013 *** (-22.76)		-0.155 *** (-12.41)		0.0436 *** (3.08)		-0.0336 *** (-15.70)	
Leverage	0.0139 *** (25.13)		0.0207 ** (2.00)		0.078 ** (7.57)		0.0222 *** (8.83)	
ROA	-0.0305 *** (-31.01)		-0.661 *** (-31.13)		0.0761 *** (3.20)		-0.0936 *** (-16.73)	
Stock issuance	0.00774 *** (32.29)		0.0354 *** (7.14)		0.0101 * (1.77)		0.0117 *** (13.89)	
Market to book	0.00213 *** (21.65)		0.0136 *** (7.19)		0.00181 (0.97)		0.00712 *** (19.20)	
Log of assets	-0.00618 *** (-100.27)		-0.0608 *** (-47.55)		-0.0255 *** (-15.84)		-0.00942 *** (-36.75)	
Anti-director	-0.00108 *** (-9.34)		0.0159 *** (6.39)		-0.000259 (-0.09)		0.0019 *** (5.20)	
Corruption	0.000109 *** (9.32)		0.00322 *** (12.96)		0.000445 (1.64)		0.000495 *** (11.97)	
CPI (change)	0.00129 *** (23.23)		0.00837 *** (7.71)		0.00519 *** (5.09)		0.00118 *** (9.74)	
GDP (change)	-0.000305 *** (-5.12)		0.00535 *** (4.29)		-0.00525 *** (-3.03)		-0.00067 *** (-3.25)	
Intercept	0.14 *** (67.86)		2.23 *** (50.58)		-0.032 (-0.63)		0.217 *** (34.60)	
Observations	204,023		142,378		25,435		25,435	
adj. r-squared	0.225		0.126		0.025		0.375	

Notes: t-statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: Accruals quality (measured by the standard deviation of discretionary accruals), Income smoothing (measured by the standard deviation of earnings divided by the standard deviation of operating cash flows), persistence (based on a first-order autoregressive model (AR1) of earnings), and predictive (the standard deviation of the errors in the autoregressive model used from estimating persistence).

Table 10
Earnings Quality and Earnings Attributes
Cultural Marginal Means of Earnings Attributes by Latent Class

Country	Predicted Value				Expected class	Latent Class
	AQ	Smooth	Persistence	Predict		
Argentina	-0.0472	-0.4400	0.0302	-0.1015	2.034	2
Australia	-0.0460	-0.3108	0.0078	-0.0930	3.000	3
Belgium	-0.0557	-0.4853	0.0189	-0.1231	1.000	1
Brazil	-0.0483	-0.4738	0.0310	-0.1073	2.000	2
Canada	-0.0449	-0.3309	0.0078	-0.0925	3.000	3
Chile	-0.0465	-0.4819	0.0310	-0.1046	2.001	2
China	-0.0404	-0.4552	0.0078	-0.0923	3.000	3
Denmark	-0.0341	-0.2162	0.0215	-0.0685	4.000	4
Finland	-0.0380	-0.2903	0.0212	-0.0811	3.982	4
France	-0.0478	-0.3839	0.0310	-0.1072	2.000	2
Germany	-0.0462	-0.4201	0.0222	-0.0986	2.378	2
Greece	-0.0493	-0.5053	0.0310	-0.1101	2.000	2
Hong Kong	-0.0324	-0.3335	0.0215	-0.0739	4.000	4
India	-0.0362	-0.3020	0.0214	-0.0819	3.998	4
Indonesia	-0.0403	-0.4491	0.0080	-0.0929	2.992	3
Ireland	-0.0426	-0.3376	0.0078	-0.0844	3.004	3
Italy	-0.0437	-0.3435	0.0082	-0.0948	2.981	3
Japan	-0.0573	-0.6158	0.0189	-0.1247	1.000	1
Korea (Rep.)	-0.0444	-0.5188	0.0310	-0.1039	2.000	2
Malaysia	-0.0447	-0.4421	0.0299	-0.1013	2.047	2
Mexico	-0.0628	-0.6584	0.0189	-0.1355	1.000	1
Netherlands	-0.0428	-0.3081	0.0078	-0.0919	3.000	3
New Zealand	-0.0465	-0.3644	0.0078	-0.0930	3.000	3
Norway	-0.0327	-0.2007	0.0215	-0.0700	4.000	4
Philippines	-0.0414	-0.3866	0.0078	-0.0931	2.998	3
Russia	-0.0430	-0.4084	0.0310	-0.1045	2.000	2
Singapore	-0.0389	-0.4242	0.0078	-0.0865	3.002	3
South Africa	-0.0458	-0.3809	0.0080	-0.0956	2.988	3
Spain	-0.0434	-0.3856	0.0085	-0.0972	2.970	3
Sweden	-0.0388	-0.2778	0.0209	-0.0811	3.960	4
Switzerland	-0.0529	-0.4940	0.0309	-0.1099	1.996	2
Taiwan	-0.0513	-0.6040	0.0204	-0.1150	1.130	1
Thailand	-0.0377	-0.3871	0.0087	-0.0859	3.066	3
Turkey	-0.0457	-0.4466	0.0305	-0.1030	2.021	2
United Kingdom	-0.0476	-0.3548	0.0078	-0.0959	2.999	3
United States	-0.0454	-0.3027	0.0078	-0.0918	3.000	3

Notes: The predicted value of each earnings attribute is computed as the sum of the six OLS regression coefficients times the six country cultural dimensions. The expected class is the sum of the latent class model prediction

probabilities for each class times the class (class 1, 2, 3, or 4). The listed class is the specific class with the highest expected probability (greater than 0.50).