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Do differences in national cultures affect cross-country financial statement comparability under IFRS?

Byung Hun Chung
University of Iowa

DO DIFFERENCES IN NATIONAL CULTURES AFFECT CROSS-COUNTRY FINANCIAL STATEMENT COMPARABILITY UNDER IFRS?

by

Byung Hun Chung

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Thesis Supervisors: Professor Daniel Collins
Professor Paul Hribar

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

Byung Hun Chung

has been approved by the Examining Committee for
the thesis requirement for the Doctor of Philosophy degree
in Business Administration (Accounting) at the May 2017
graduation.

Thesis Committee: _____
Daniel Collins, Thesis Supervisor

_____
Paul Hribar, Thesis Supervisor

_____
Richard Mergenthaler

_____
Scott Asay

_____
Yiming Qian

To my family

Scholarly Abstract

I examine whether cultural differences in trust towards others, materialism, and risk aversion lower financial statement comparability between countries that require International Financial Reporting Standards ("IFRS"). Evidence from various academic disciplines suggest that cultural beliefs and values affect individuals' estimates and judgments and their consequent decisions, including economic and financial decisions. I posit that certain cultural beliefs and values also affect the estimates and judgments of corporate managers, resulting in inconsistent reporting decisions for given economic events and lower financial statement comparability. I find that two countries have lower comparability when there are greater cultural differences in trust towards others, materialism, and risk aversion. In cross-sectional tests, I find weak evidence that stronger enforcement of IFRS moderates the cultural effects on cross-country financial statement comparability. Stronger enforcement of regulations and law does not moderate the cultural effects. These findings suggest that having a strong IFRS, regulatory, or legal enforcement does not effectively moderate the impact of culture on cross-country financial statement comparability. A possible explanation is that cultural influence on financial reporting is also manifested through enforcement officials; in other words, those in charge of the enforcement are also subject to the same cultural beliefs and values as others involved in the reporting process, making moderation less likely.

Public Abstract

I examine whether managers in different countries apply the same accounting standards dissimilarly when they come from different cultural backgrounds. I look at the cultural dimensions of trust towards others, materialism, and risk aversion because previous studies find that these characteristics affect reporting outcomes within the US. Evidence from various academic disciplines suggest that cultural beliefs and values affect individuals' estimates and judgments and their consequent decisions, including economic and financial decisions. I posit that certain cultural beliefs and values also affect the estimates and judgments of corporate managers, resulting in inconsistent reporting decisions for given economic events. The inconsistent reporting decisions can cause the same underlying economic events to be reported differently or different underlying economic events to be reported identically (i.e. even when two firms' financial statements show the same profit, one firm may have a higher actual economic profit if the managers in that firm were more careful and thorough in reporting expenses). When the same numbers in the financial statements reflect different underlying economics or different numbers reflect the same underlying economics, it will be harder for users of financial statements to compare firms' actual values (i.e. financial statements are less comparable, or have low comparability).

I find that firms from two countries have lower financial statement comparability when there are greater cultural differences in trust towards others, materialism, and risk aversion. I also find weak evidence that stronger enforcement of compliance with accounting rules mitigates the cultural effects on cross-country financial statement comparability. Stronger enforcement of regulations and law does not mitigate the cultural effects. These findings suggest that having a strong accounting compliance, regulatory, or legal enforcement does not effectively address the impact of culture on cross-country financial statement comparability. A possible explanation is that cultural influence on financial reporting is also manifested through enforcement officials; in other words, those in charge of the

enforcement are also subject to the same cultural beliefs and values as others involved in the reporting process, making mitigation less likely.

Table of Contents

List of Tables

1. Introduction

I explore whether international differences in cultural dimensions of trust towards others, materialism, and risk aversion affect how managers from different countries implement International Financial Reporting Standards ("IFRS") and lower cross-border financial statement comparability (hereon, "accounting comparability"). Both standard setters and academics commonly quote improving cross-country accounting comparability as an important benefit of using IFRS. They document that accounting comparability increases the information environment for international investors and facilitates international capital flow (European Council, 2002; Barth, 2008; SEC, 2008; DeFond et al., 2011; IASB, 2015). For example, the International Accounting Standard Board ("IASB") states in its first mission statement that, "IFRS Standards bring transparency by enhancing the *international accounting comparability* (emphasis added) and quality of financial information, enabling investors and other market participants to make informed economic decisions." (IASB, 2016). With the goal of enhancing cross-country accounting comparability, IASB has successfully promoted IFRS (Pacter, 2015; IASB, 2016); by 2015, the number of countries that require or permit IFRS reached 140, comprising 97% of the total world GDP (IASB, 2015).

In addition to documenting the benefits of improved comparability and other earnings qualities through IFRS adoption, accounting researchers have provided evidence that country level differences affect the benefits of IFRS adoption. For example, researchers find that the improvements in comparability or other earnings qualities from using international accounting standards[1] vary across countries with different reporting incentives and enforcement systems (Ball et al., 2003; Leuz et al., 2003; Burgstahler et al., 2006; Daske et al., 2008, 2013; Christensen et al., 2013; Christensen et al., 2015). The researchers motivate their studies by emphasizing that IFRS are principles-based standards that allow significant managerial estimates and judgments. The estimates and judgments increase the reporting flexibility and the chances of

[1] The international accounting standards refer to IFRS and International Accounting Standards ("IAS"). IAS are a set of international accounting standards issued by International Accounting Standards Committee, which is the former international accounting standard setter that is replaced by IASB in 2001.

inconsistent implementation of international accounting standards across firms, making reporting incentives or enforcement systems important for consistent reporting and cross-country comparability.

I posit that culture is another influential factor that affects cross-country accounting comparability because it varies significantly across countries and influences managers' estimates and judgments (Tsakumis, 2007; Kitayama and Cohen, 2010; Kanagaretnam et al., 2014). A large body of literature in psychology, sociology, economics, and other fields has documented that culture influences individual beliefs and values, which in turn, influences individuals' estimates and judgments (Markus and Kitayama, 1991; Weber and Hsee, 2000; Nisbett, 2003; Guiso et al., 2003, 2006; Tsakumis, 2007; Kitayama and Cohen, 2010; Ma et al., 2014; etc).[2] Based on the evidence that culture influences individuals' estimates and judgments, I predict that certain cultural beliefs and values will influence managers' estimates and judgments when managers make reporting decisions. Thus, when managers come from different countries with varying cultural beliefs and values, they are more likely to make different estimates and judgments in making reporting decisions, leading to inconsistent application of IFRS and lower accounting comparability.

I maintain that culture-induced variations in managers' estimates and judgments cause managers to treat similar economic events differently or to interpret and implement a common set of accounting standards differently. For instance, holding all else equal, I conjecture that managers from materialistic cultures are more likely to evaluate and recognize economic events favorably to inflate earnings in an effort to receive greater compensation. I also conjecture that managers from risk averse cultures are more likely to pay greater attention to unfavorable economic events and interpret and implement accounting standards more conservatively (e.g. Watts 2003).

[2] While there are multiple definitions of culture, researchers usually include at least one or more of the following characteristics in their definitions: social beliefs and values that are commonly shared among the members of a society, are taught from a generation to the next, and influence mental and behavioral patterns of the members (Kroeber and Parsons, 1958; Hofstede, 1984; Geertz, 1993; Guiso, Sapienza, and Zingales, 2006). I define culture as social beliefs and values with the three characteristics. Also, beliefs and values refer to priors and preferences, where preferences are formed from priors (Zingales, 2015).

In addition to managers, other parties that can affect financial reporting, such as auditors or government officials, can impact accounting comparability when they hold different cultural beliefs and values. For instance, there would be a greater likelihood of auditors and governmental regulators agreeing with subjective managerial evaluations and conclusions in countries with higher level of trust (e.g. Rose, 2007). In sum, I conjecture that certain cultural beliefs and values will affect evaluations and judgments of managers and other parties involved in financial reporting. When these cultural beliefs and values differ more, the evaluations and judgments will also vary more, resulting in inconsistent reporting outcomes and lower accounting comparability.

Unlike other studies that examine national culture and financial reporting, this study only includes the countries that have adopted IFRS so that all countries use a single set of accounting standards. Previous cultural accounting studies use countries with different reporting standards, which does not allow distinguishing whether culture affects reporting outcomes through the application or the development (i.e. standard setting) of the standards. Because IFRS are developed externally by IASB, using IFRS countries minimizes culture's influence on the development of accounting standards, which also would affect cross-country accounting comparability. The facts that IFRS are relatively constant across countries and are developed externally allow better testing of whether cultural differences reduce accounting comparability through the *implementation* of accounting standards.[3]

I estimate accounting comparability using two comparability measures based on contemporaneous return-earnings relation (De Franco et al., 2011) and one-year-ahead operating cash flows-current total accruals relation (Barth et al., 2012). I use responses to international surveys called World Value Survey ("WVS") to proxy for country level cultural aspects of trust towards others, materialism, and risk aversion.

[3] While I try to capture variation in the application of IFRS by holding standards relatively constant, I acknowledge that culture can also influence accounting comparability through other channels that do not involve accounting standards. For example, audit researchers find that accountants from certain Asian countries are more likely to accept client's preferred accounting treatments because of their cultural background that emphasizes friendly relationship (Patel, Harrison, and Mckinnon, 2002; Lin and Fraser, 2008).

The differences in the national average responses to WVS questions between two countries capture cultural differences. After regressing the measures of accounting comparability on variables that capture cultural differences, I find that cross-country differences in trust towards others, materialism, and risk aversion have negative relation with accounting comparability. These findings are robust to different model specifications as demonstrated later.

I also test whether two countries with strong enforcement regime can moderate the decrease in accounting comparability due to cultural differences. Researchers suggest initiating proactive enforcement of IFRS (Christensen et al., 2013) or having strong legal and regulatory environment (Daske et al., 2008) is a necessary condition to realize the benefits of IFRS adoption. While researchers find that strong enforcement regimes increase the benefits of IFRS adoption in general, it is less clear whether the enforcement will moderate cultural effects on accounting comparability; strong enforcement may well be less effective in moderating cultural effects if those in charge of the enforcement are similarly affected by cultural beliefs and values.

Consistent with cultural beliefs and values also affecting enforcement officials, I find weak evidence that having strong enforcement of IFRS in two countries moderates the effect of cultural differences on accounting comparability. Generally, I do not find evidence that two countries both having strong legal or regulatory system moderates the effect of cultural differences. These findings suggest that strengthening the enforcement of IFRS is effective at inducing consistent application of IFRS relative to having strong regulatory or legal systems, consistent with conclusions in Christensen et al. (2013).

This study makes the following contributions to the literature. First, I contribute to the literature about national culture and financial reporting by examining whether greater differences between national cultures reduce cross-country accounting comparability. I include only the countries that have adopted IFRS to examine the effect of culture on the *implementation* of accounting standards. While existing studies show that cultural differences affect reporting choices, such as earnings management or loan loss provisions,

these studies use firms that report under different standards. Consequently, the studies have not distinguished whether culture affects accounting through the application of accounting standards, development of accounting standards (i.e. standard setting), or both (Nabar and Boonlert, 2007; Han, Kang, Salter, and Yoo, 2010; Kanagaretnam, Lim, and Lobo, 2014). I add to these studies by focusing on the *implementation* of uniform set of accounting standards, as well as examining the association between cultural differences and accounting comparability.

Second, this study contributes to the IFRS literature and provides useful information to standard setters by demonstrating the effect of cultural differences on accounting comparability under IFRS. Accounting researchers highlight accounting comparability as an important advantage of adopting IFRS and provide evidence about benefits of enhanced accounting comparability, such as increased information environment for investors and analysts (DeFond et al., 2011; Tan et al., 2011; Ozkan et al., 2012; Christensen et al., 2013). While researchers have actively studied the effects of market and regulatory features on earnings quality under IFRS (Daske et al., 2008, 2013; Christensen et al., 2013; Christensen et al., 2015), there is a limited evidence on how social/behavioral characteristics, such as culture, affect earnings quality under IFRS. This study contributes to the IFRS literature by examining whether certain cultural differences reduce accounting comparability and whether country level institutional features can moderate the effect of cultural differences on accounting comparability. Finally, this study provides information that is closely related to IASB's goal of improving accounting comparability through IFRS (IASB, 2010, 2015, and 2016; Pacter, 2015).[4]

Third, I contribute to the literature on the effect of country level factors on financial reporting. Researchers have studied how various cross-country differences affect financial reporting quality.

[4] This study does not claim that IFRS adoption lowered accounting comparability compared to pre-adoption periods and is not about the effect of IFRS adoption on cross-country accounting comparability. Also, this study does not aim to suggest a disadvantage of adopting IFRS; cultural influence should have existed regardless of using local GAAP or IFRS, and IFRS adoption would not necessarily increase culture's influence on accounting comparability. This study aims to explore the effect of differences in cultural beliefs and values on the application of accounting standards using only the IFRS countries to hold accounting standards relatively constant.

Specifically, studies investigate how differences in legal systems and investor protection (Ball, Kothari, and Robin, 2000; Leuz, Nanda, and Wysocki, 2003; Burgstahler, Hail, and Leuz, 2006; Lang, Raedy, and Wilson, 2006), enforcement of accounting standards (Christensen et al., 2013), book-tax conformity (Burgstahler, Hail, and Leuz, 2006; Blaylock, Gaertner, and Shevlin, 2014), and reporting incentives arising from private versus public channels of communicating financial information (Ball et al., 2003). These country level factors represent institutional or capital market structures, which are established and operated by the government or by market participants. Cultural beliefs and values, on the other hand, are transferred from past generations (Guiso et al., 2006) rather than being driven by the government or by rational market incentives. In essence, culture is a distinct country level factor that influences cognitive and analytic thought processes of managers and others involved in financial reporting and does not necessarily induce economically rational behaviors (Markus and Kitayama, 1991; Nisbett et al., 2001; Guiso et al., 2003; Kitayama and Cohen, 2010).

2. Hypothesis Development

2.1 Connection between cultural differences and accounting comparability

I define accounting comparability as the similarity in how managers translate economic events into accounting numbers; financial statements are more comparable when managers recognize similar economic events similarly and dissimilar economic events differently. Thus, while using the same accounting standards may be an important step in improving accounting comparability, implementing the standards consistently across firms and across borders is also important for achieving greater accounting comparability (Hail, Leuz, and Wysocki, 2010).

I conjecture that managers' estimates and judgments play an important role in consistent implementation of accounting standards. Prior to implementing accounting standards to recognize economic events, managers have to interpret accounting standards and evaluate the impact of economic events on their firms. Interpreting accounting standards and evaluating economic events involve subjective estimates and judgments, such as in recognizing goodwill impairment or recognizing tax reserves (Blouin et al., 2010; Ramanna and Watts, 2012; Savoy, 2016). Thus, because implementation of accounting standards often involves managers' estimates and judgments, the implementation likely will vary across managers if their estimates and judgments differ.

Psychology researchers find that decision maker's cultural beliefs and values affect subjective estimates and judgments (Weber and Hsee, 2000; Kitayama and Cohen, 2010). Cultural beliefs and values likely influence managers and those involved in financial reporting, such as auditors and officials in charge of enforcing reporting compliance, because those individuals are also members of a cultural group. Therefore, I maintain that differences in cultural beliefs and values likely cause variation in estimates and judgments by managers and those involved in monitoring financial reporting. If subjective estimates and judgments of managers and those involved in monitoring financial reporting vary across cultures, cultural differences will hinder consistent implementation of accounting standards and lower accounting

comparability. In particular, the effect of cultural differences on accounting comparability is likely to manifest more if accounting standards allow significant estimates and judgments as in IFRS (Ball et al., 2015; Capkun et al., 2016).

2.2 The impact of cultural beliefs and values on individuals including managers

Researchers from various fields provide evidence that cultural beliefs and values influence individual behaviors from basic physical activities, such as brain reactions, to more advanced activities, such as making investment decisions (Guiso, Sapienza, and Zingales, 2003, 2009; Kitayama and Cohen, 2010; Han and Ma, 2015). For instance, Han and Ma (2014, 2015) find that culture influences the functional organization of a brain, causing the brain's response to the same stimulus to differ between individuals from different cultures. Psychology researchers have found that cultural beliefs and values influence individuals' cognitive, analytical, and decision-making processes, as well as interpersonal interactions (Markus and Kitayama, 1991; Weber and Hsee, 2000; Nisbett et al., 2001; Nisbett, 2003; Peterson and Wood, 2008; Kitayama and Cohen, 2010; Han and Ma, 2015). Psychology researchers suggest that cultural beliefs and values have a broad and profound impact on individual thoughts, judgments, and decisions because these beliefs and values are transmitted from one generation to the next and persist over time. Specifically, cultural values and beliefs are established in the long-term memory through repeated experience over a prolonged period of time (i.e. individuals are repeatedly exposed to a social norm throughout their life; Weber and Hsee, 2000; Peterson and Wood, 2008).

In economics and finance, research interest about cultural influence on economic decisions has grown rapidly over the last ten years (Zingales, 2015).[5] For example, economics and finance researchers have documented that cultural beliefs and values influence national savings and preference for

[5] In his editorial for Journal of Financial Economics Volume 117 Issue 1, Zingales (2015) documents that there is a cultural "revolution" in economics, citing the facts that the National Bureau of Economics Research has opened a program on cultural economics and the Journal of Economic Literature has created a code for cultural economics. Journal of Financial Economics Volume 117 Issue 1 is devoted to studies about cultural finance and only contains studies on cultural economics and finance.

redistribution (Guiso et al., 2006), international trade and M&A (Guiso et al., 2009; Ahern, Daminelli, and Fracassi, 2015), stock market participation (Guiso, Sapienza, and Zingales, 2008), and stock market momentum (Chui, Titman, and Wei, 2010). Other finance researchers examine corporate culture and find its association with executives' financial fraud and corruption (Mironov, 2015) and financial reporting fraud and errors (Davidson, Dey, and Smith, 2015).

While studying cultural influence has gained interest in economics and finance, culture can be an especially interesting topic to accounting researchers for two reasons. First, despite global movements toward adopting IFRS, there has been little or no study that examines culture's effect on financial reporting under IFRS. Studying culture's effect on financial reporting under IFRS is especially important considering the large body of evidence on significant cultural variation across countries and cultures' effect on individual judgments and decisions (Weber and Hsee, 2000; Kitayama and Cohen, 2010; Zingales, 2015). Second, making financial reporting decisions in public firms is subject to more detailed written standards than many other financial and economic decisions, such as how much one should save, trade internationally, or participate in the stock market. With the presence of accounting standards and mechanisms to monitor and enforce those standards, whether cultural influence is strong enough to affect reporting decisions is an unresolved question.

Differences in cultural beliefs and values will lower accounting comparability if they affect how manager *implement* accounting standards. Accounting researchers have provided evidence of culture-induced variation in implementing accounting standards. For example, in an experimental study, Tsakumis (2007) provides the same reporting standards and scenarios about reporting contingent liability to accountants from the US and Greece. He finds that accountants from these two countries implement accounting rules dissimilarly in ways that the cultural differences would predict; compared to US accountants, Greek accountants disclosed less contingent assets and liabilities, consistent with greater preference for confidentiality in Greek culture. Kanagaretnam, Lim, and Lobo (2014) find that uncertainty

avoidance and individualism, which is the degree of independence a society maintains among its individuals (Hofstede, 1984), influence banks' risk-taking and accounting conservatism.[6]

In addition to managers, cultural differences can lower accounting comparability through other parties influential in the reporting process, such as external auditors and government officials in charge of enforcement. For instance, cultural beliefs and values can influence reporting process through the auditor-client relationship. Auditors face a conflict of interest between their incentive to maintain long-term relationships with clients and their duty to monitor clients' financial reports. Nisbett (2003) document that East Asians are more likely to avoid confrontation and emphasize friendly relationship with each other, while Natlandsmyr and Rognes (1995) find that culture influences negotiation outcomes. Consistent with those findings, audit researchers conduct experimental and survey studies and find that auditors from certain Asian countries are more likely to accept client's preferred accounting treatments than accountants from the UK or Australia (Patel, Harrison, and Mckinnon, 2002; Lin and Fraser, 2008).

Other than the cultural aspects examined in this study (i.e. trust towards others, materialism, and risk aversion), there are other cultural beliefs and values that likely would influence accounting comparability. For instance, researchers in psychology and sociology show that the motivation to be mentally and behaviorally consistent varies across cultures. They find that East Asians are more tolerant of inconsistency while North Americans are less tolerant because they view consistency to more strongly influence their self-esteems and social skills (Kanagawa, Cross, and Markus, 2001; Suh, 2002; Heine, 2010 page 718). Although accounting researchers have not directly tested whether cross cultural variation in consistency influences financial reporting, motivation to be consistent would likely influence reporting consistency, which is closely related to accounting comparability (Peterson et al., 2015). When implementing IFRS, the motivation to be consistent would be especially important for accounting

[6] Kanagaretnam et al. (2014) use observations from 2000-2006 and many observations likely use different accounting standards. Thus, it is uncertain how much of the documented effect of culture on accounting conservatism comes from culture's effect on the implementation or the development of accounting standards.

comparability because the standards require application of principles rather than detailed rules, allowing greater reporting flexibility to managers (Schipper, 2003; Ball, Li, and Shivakumar, 2015).

2.3 Cultural dimensions examined in this study: trust, materialism, and risk aversion

I examine cultural differences in trust towards others, materialism, and risk aversion because I consider them to be more relevant to financial reporting compared to other cultural aspects that WVS questions capture. Researchers in organizational studies and sociology emphasize that trust is crucial for effective communications. Indeed, Rolland and Chauvel (2000) claim that trust is "the single most important precondition for knowledge exchange". Trust encourages individuals to disclose their knowledge to another because it reduces fears of criticism and concerns that the shared knowledge will be used against them (Mishra, 1996; Dirks and Ferrin, 2001; Staples and Webster, 2008). Mishra (1996) documents that lower level employees' trust in their management spurs greater upward communication, especially if the information is negative for management. Other researchers find that trust enhances the accuracy and amount of information sent to superiors (Mellinger, 1959), openness in within-group communication (Smith and Barclay, 1997), and perceived accuracy of information produced by others or by leaders (Benton, Gelber, Kelley, and Liebling, 1969; Roberts and O'Reilly, 1974). Researchers have also found that trust lessens conflicts in negotiations (De Dreu et al., 1998), which has an implication for auditor-client relationships.

Accounting researchers have also examined the effect of trust on managers and auditors (Rose, 2007; Garrett et al., 2014). Garrett et al. (2014) document that when employees trust their management, they communicate their private information to management more frequently and accurately, which is crucial in making managerial evaluations and judgments (Jollineau, Vance, and Webb, 2012). Consistent with their argument, the authors find that firms with stronger trust between employees and management have higher accrual quality and lower likelihoods of misstatements and material internal control weakness disclosures. In an experiment, Rose (2007) documents that auditors who trust their clients less are more likely to believe that misstatements are intentional. In addition, those auditors are more likely to pay

attention to aggressive reporting, implying less trusting auditors provide more reliable audit. In a non-accounting study, La Porta et al. (1997) document that trust, as measured using the same WVS question as in this paper, increases judicial efficiency and reduces government corruption, which are associated with financial markets and reporting quality (Leuz et al., 2003; Burgstahler et al., 2006).

The second cultural aspect I consider is materialism, which is the tendency to seek happiness through worldly possessions. I expect differences in materialism across cultures to reduce accounting comparability. Researchers often document that managers manipulate earnings to opportunistically receive materialistic benefits, such as bonus compensation or increase in the value of their stocks and options (Healy, 1985; Bhojraj, Hribar, Picconi, and McInnis, 2009; Badertscher, 2011). If a cultural group has higher average level of materialism and its managers consequently are more materialistic, I conjecture that the managers will apply IFRS more opportunistically than their less materialistic counterparts in another cultural group. Cross-cultural difference in the average level of materialism are also likely to affect the reliability of monitoring and enforcement, which reduces accounting comparability. I maintain that if a cultural group has a high average level of materialism, its auditors, board of directors, and government officials are likely more materialistic than their counterparts from a less materialistic culture. Consequently, holding all else equal, the monitors in charge of enforcing IFRS compliance would, for financial benefits, more easily allow opportunistic application of IFRS. If managers of more materialistic countries have greater incentive to report opportunistically and monitoring officials more easily allow opportunistic reporting, reporting outcomes likely will vary across cultures even when economic events are similar.

The third cultural aspect I examine is risk aversion.[7] Financial accounting researchers have documented that managers' risk aversion influences accounting conservatism and earnings management, while auditing researchers have examined how auditors' risk aversion affects auditors' probability

[7]Instead of risk aversion, other researchers in the literature generally use the term "uncertainty avoidance" from Hofstede (1984). I use the term risk aversion because I use WVS scores rather than scores from Hofstede (1984), and because the term "risk" is more commonly used (for example, audit risk, information risk, litigation risk, banks' risk-taking, and etc.).

judgments and decisions. Kanagaretnam, Lim, and Lobo (2014) find that banks from more risk averse cultures (i.e. higher uncertainty avoidance) decrease risk-taking and increase accounting conservatism, while Nabar and Boonlert-U-Thai (2007) document that managers from more risk averse cultures manipulate earnings less. Using CFOs from the US, Francis et al. (2015) find that female CFOs report more conservatively because they are more risk averse than male CFOs.

Audit researchers also document the effect of cultural differences in risk aversion on auditors' risk assessments and decisions. Nolder and Riley (2014) discuss psychology studies that find individual risk aversion affect decision-making vary across cultures and, based on those findings, argue that auditors' risk aversion and decision likely vary across cultures. Nolder and Riley (2014) state that audit engagements involve multitude of risks and propose further research about the effect of cultural variation in auditor risk aversion on their decisions. There are experimental and survey studies that find auditor or student participants from more risk averse cultural groups assess higher risk of material misstatement (Hughes, Sander, Higgs, and Cullinan, 2009) and control risk (Chen, Huang, and Barnes, 2007; Sim, 2009).

While cultural differences can influence financial reporting through the beliefs and values of individuals involved in the reporting process, these cultural effects are more likely to manifest when accounting standards allow more subjective interpretations. IFRS contain less detailed guidance and broadly use fair value (Ahmed, Neel, and Wang, 2013; Ball et al., 2015; Capkun, Collins, and Jeanjean, 2016), which increases the degree of subjectivity involved in implementing IFRS; generally, IFRS are viewed as principles-based standards, which provide with less detailed guidelines and allow managers to exercise greater subjective discretion. While allowing greater subjective discretion can enable managers to better convey their superior private information, it can also allow greater deviation in implementing accounting standards due to cultural beliefs and values.

There are multiple examples of IFRS/IAS provisions that allow significant level of managers' subjective judgments and estimates and the use of fair values (Ball et al., 2015; Capkun et al., 2016b). A

good example is IAS 36-Impairment of Assets. IAS 36 requires managers to determine the fair value of goodwill and other intangible assets annually to determine whether those assets should be impaired. However, intangible assets usually do not have an observable market value, and the fair values have to be determined using managers' best (and often subjective) judgments and estimates. For assets that cannot generate cash individually, managers have to determine the fair value for a group of assets called "cash generating units," in which case managers likely have to use even more judgments and estimates. In addition, the IAS 36 impairment losses can be revalued upward and the revaluations enter the earnings of the current period, which subjects the application of the standard to materialistic incentives that vary across cultures (Güliz and Belk, 1996; Eastman et al., 1997). Other provisions that allow significant managers' subjective judgments and estimates are IAS 37-Provisions, Contingent Liabilities, and Contingent Assets, IAS 39 and IFRS 9-Financial Instruments: Recognition and Measurement, and IFRS 3-Business Combinations.

In summary, I hypothesize that cross-country differences in cultural beliefs and values reduce accounting comparability across countries that have adopted IFRS. Cultural differences can lower accounting comparability because IFRS grants a significant level of managers' subjective judgments and estimates, allowing cultural beliefs and values to affect the implementation of IFRS. In addition, cultural beliefs and values affect other parties involved in the reporting process, such as external auditors and employees who provide information to their managers. Differences in cultural beliefs and values likely decrease accounting comparability through those parties as well. I choose cultural variation in trust towards others, materialism, and risk aversion because researchers have identified associations between these three cultural aspects and financial reporting outcomes in domestic and/or cross-country settings.

H1: Ceteris paribus, when there is a greater difference between two countries in the levels of trust towards other individuals, financial statement comparability is lower between those countries.

H2: Ceteris paribus, when there is a greater difference between two countries in the levels of materialism, financial statement comparability is lower between those countries.

H3: Ceteris paribus, when there is a greater difference between two countries in the levels of risk aversion, financial statement comparability is lower between those countries.

2.4 Moderating effect of strengthened IFRS enforcement

Next, I study whether the effect of cultural differences on accounting comparability is moderated when two countries being compared have strengthened the enforcement of IFRS by establishing proactive review systems to monitor compliance with IFRS. Christensen et al. (2013) document that countries realized improvements in market liquidity only if they had initiated proactive enforcement of managers' compliance with IFRS. If having a proactive enforcement of IFRS disciplines reporting behaviors and improves market liquidity, it is possible that the enforcement also moderates biased reporting decisions due to cultural beliefs and values.

However, it is unclear whether the stronger enforcement of IFRS moderates the effect of cultural differences on accounting comparability. On the one hand, one can argue that strong IFRS enforcement would play a moderating role because those in charge of enforcement likely are trained officials who are knowledgeable about objectively implementing IFRS. Also, it is possible that enforcement officials suffer less from conflict-of-interest than other parties involved in the financial reporting process. Consequently, enforcement officials can better identify biased reporting decisions for given economic events and enforce adjustments. On the other hand, it is possible that strong enforcement systems would not moderate the effect of cultural differences because those in charge of the enforcement are also subject to the same cultural beliefs and values (i.e. the officials are one of the contributing factors to cultural influence on accounting comparability). Therefore, I state the fourth hypothesis in null form:

H4: Ceteris paribus, two countries having strong enforcement of IFRS does not moderate the negative effect of cultural differences on accounting comparability.

2.5 Moderating effect of legal and regulatory systems

Finally, I study whether the effect of cultural differences on accounting comparability is moderated when two countries being compared have strong legal and regulatory systems. According to Kaufman et al. (2009), a country with a strong legal system has a government that provides strong legal protection to its citizens for contract enforcement, property rights, etc. Kaufman et al. (2009) also document that a country with a strong regulatory system has a government that is capable of formulating and implementing regulations for private sector development.

Researchers have documented that reporting quality and capital market benefits of IFRS adoptions are more common in countries with strong legal and regulatory systems (Daske et al., 2008; Byard et al., 2011; Hong et al., 2014). For example, Daske et al. (2008) find that IFRS adoption increased market liquidity and decreased cost of capital only in countries with strong legal systems as identified by Kaufmann et al. (2007). The authors suggest enhanced accounting comparability as the source of the capital market benefits and conclude that having a strong legal system is crucial to realizing those benefits. Byard et al. (2011) find that analyst forecast errors and dispersion decreased after IFRS adoption only in countries with strong legal systems. However, Christensen et al. (2013) document that IFRS adoption did not increase market liquidity if a country did not strengthen the enforcement of IFRS even for those countries with strong legal systems. Christensen et al. (2013) conclude that having a strong legal and regulatory systems is insufficient for improving reporting quality and market liquidity. Given the findings in Christensen et al. (2013), it is unclear whether having strong legal and regulatory systems in two countries can moderate the effect of cultural differences on accounting comparability between the two countries. Therefore, I state the fifth hypothesis in null form:

H5: Ceteris paribus, two countries having strong legal and regulatory systems does not moderate the negative effect of cultural differences on accounting comparability.

3. Research Design

3.1 World Value Survey

I obtain data to measure cultural differences from the World Value Survey ("WVS"). WVS is the largest non-commercial, cross-national, time-series investigation of human beliefs and values. In each country, a team of social scientists from well-known institutions, such as Harvard University and the University of Michigan for the US and Peking University for China, lead the survey. The survey teams are from various fields of social science and have administered the survey since 1981 in almost 100 countries. The survey repeats about every two to four years, and some of the countries being surveyed change in each survey. Across countries, the administrators use a common set of questionnaires translated into the countries' native languages, and the composition of the questions can change slightly across successive surveys. The purpose of the survey is to help researchers and policy makers better understand the effect of cultural beliefs and values on various economic and social outcomes across countries. According to the WVS website, researchers in various fields such as political science, sociology, social psychology, anthropology, economics, and finance as well as institutions such as government groups and the World Bank have used the survey data.

I proxy for cultural beliefs and values using numeric responses to WVS questions related to the cultural aspects of trust towards others, materialism, and risk aversion. I choose to examine the three cultural aspects and to use WVS data to capture them for the following reasons. First, among the cultural beliefs and values captured by WVS, I regard trust, materialism, and risk aversion as the most likely cultural aspects to influence reporting decisions and accounting comparability based on previous findings (Rose, 2007; Bhojraj et al., 2009; Badertscher, 2011; Garrett et al., 2014; Francis et al., 2015).

Second, I choose WVS responses instead of Hofstede's (1984) culture scores, which are used by most other archival culture studies in accounting, for two reasons. First, WVS scores are obtained from the general population of a cultural group, while Hofstede's scores are obtained from IBM employees in

multiple national offices. Compared to the general population, IBM employees and their survey responses are more likely to be influenced by institutional factors, such as industry regulations and/or monitoring. Because I study how a nation's cultural beliefs and values carry over to managerial reporting decisions, I mitigate endogeneity arising from institutional factors on survey responses by using WVS. Second, WVS survey administrators repeat the survey every few years and update the measures of cultural beliefs and values regularly, while Hofstede's scores are obtained between 1968 and 1972 and has not been updated since. Although cultural beliefs and values are considered stable, I conjecture that they can change over decades. Thus, I choose WVS to use the survey responses that are closer to my sample period.

Finally, I use WVS responses because researchers suggest that WVS responses reliably capture cultural beliefs and values. For example, Knack and Keefer (1997) find that when wallets with $50 worth of cash were purposefully dropped, the percentage of wallets returned with the cash intact highly correlate with relevant WVS responses to *Trust* (as high as 0.67). The Knack and Keefer (1997) experiment covers 34 different cities from 14 western European countries and the US, and the correlations are even higher when controlling for per capita income. Chuah et al. (2009) and Gächter et al. (2010) also provide experimental evidence that WVS responses accurately reflect cultural behaviors, although they focus on the cultural aspect of individualism.

To measure cultural differences in trust, materialism, and risk aversion across countries, I use numeric responses to WVS questions related to those beliefs or values (specifics about the questions are detailed in Appendix B). I calculate the national averages of the numeric responses from between 1,000 and 3,500 respondents and take the absolute difference of the averages between two countries whose cultural differences I want to measure. Table 1 Panel A shows the countries included, survey years, and the national mean response for each question, while Panel B shows countries' rankings of the mean responses.

Panel A shows that between 2005 and 2015, the administrators repeat the survey between one to three times depending on the country and obtain new WVS scores from each successive survey.[8]

Panel B shows that UK and Australia, which is a former British colony, rank next to each other in *Materialism* (10th and 11th) and rank somewhat close to each other in *Trust* (8th and 4th) and *Risk Aversion* (9th and 5th). Finland and Australia, which are geographically close each other, rank very closely to each other in all three cultural aspects. Australia and Hong Kong, both of which were British colonies, also rank close to each other in *Trust* (4th and 5th) and *Risk Aversion* (5th and 4th) but rank more apart in *Materialism* (11th and 5th). I also observe countries that largely differ in all three cultural aspects, such as Australia and South Africa or Sweden and Turkey.

3.2 Cross-country accounting comparability

I explore the effect of national culture on cross-country accounting comparability using firms from countries that require IFRS for publicly traded companies. I estimate accounting comparability by comparing accounting translations of managers whose firms, say firms *i* and *k*, are incorporated in different countries [Compustat Global item: *FIC*] but are in the same two-digit SIC industry.

3.2.1 Market-based measure of accounting comparability

I use a return-based accounting comparability measure from De Franco et al. (2011). De Franco et al. (2011) measure accounting comparability as the similarity in managers' reporting decisions for underlying economic events. The authors capture managers' reporting decisions with earnings and economic events with stock returns, stating that earnings and returns are summarized measures of managers' reporting decisions and economic events. Following the authors, I use the relation between earnings and returns to estimate how managers report economic events in earnings. The similarity in the earnings-returns

[8] While WVS includes European countries, a program called European Value Survey also conducts almost identical surveys as WVS. European Value Survey administers surveys in European countries in years different from WVS with common questionnaire items to WVS. I use the data from this source as well. The questions and responses I use in this study have identical formats between the two survey administrators.

relation reflects the similarity between two firms in their managers' reporting choices for underlying economic events; in other words, the similarity in the earnings-return relation reflects accounting comparability between two firms. Following the authors, I first estimate how managers report economic events as earnings with earnings-returns relation, and then compare this relation between firms to measure accounting comparability.[9]

I estimate manager's reporting of economic events in earnings using the following time-series regression from De Franco et al. (2011):

$$\frac{NI_{iq}}{MVE_{iq-1}} = \gamma_{0it} + \gamma_{1it} RET_{iq} + e_{iq} \quad (1)$$

where NI_{iq} is income before extraordinary items [Compustat Global item: *IBQ*] for firm *i* in quarter q. NI_{iq} captures firm i's aggregate accounting translation of economic events during a quarter. MVE_{iq-1} is the beginning-of-quarter market value of equity calculated as stock price times the number of common shares outstanding [*PRCCD*CSHOC*] and RET_{iq} is firm *i*'s quarterly stock return, adjusted for dividends [*TRFD*] and stock splits [*AJEXDI*]. RET_{iq} proxies for a firm's aggregate economic events during a quarter. I estimate equation (1) with previous 16 quarters (requiring a minimum of 14 quarters) and obtain the coefficients $\hat{\gamma}_{0it}$ and $\hat{\gamma}_{1it}$ for firm *i* and year t. I estimate the coefficients for each firm-year using the preceding 16 quarters, and the coefficients are updated for each firm-year. The coefficient estimates capture how a firm's managers map economic events into accounting earnings. I follow the same procedure for firm *k* and obtain $\hat{\gamma}_{0kt}$ and $\hat{\gamma}_{1kt}$ for each year.

After estimating accounting mapping coefficients, $\hat{\gamma}_{0it}$ and $\hat{\gamma}_{1it}$, for all firm-years, I estimate what each firm's expected earnings would be conditional on using each firm's mapping coefficients for a given

[9] However, I note that there is a limitation in using the De Franco et al.'s output-based measure in an international setting. Differences in market characteristics such as the size of stock market or investor sophistication can cause noise in capturing economic news with stock return. In other words, a 4% return in one country may not reflect the same economic news as a 4% return in another country if one country's stock market is smaller and more volatile.

set of economic events. To do so, I insert firm *i*'s quarterly return, $RET_{iq,}$ into the equations with the coefficient estimates for firms *i* and *k*:

$$E(NI)_{iq}^{i} = \hat{\gamma}_{0i} + \hat{\gamma}_{1i} RET_{iq} \quad (2)$$

$$E(NI)_{kq}^{i} = \hat{\gamma}_{0k} + \hat{\gamma}_{1k} RET_{iq} \quad (3)$$

where superscripts on $E(NI)_{iq}^{i}$ and $E(NI)_{kq}^{i}$ indicate the firm whose return is being inserted, and subscripts indicate the firm whose coefficient estimates are being used. RET_{iq} is firm i's quarterly return, which reflects firm *i*'s economic events over a quarter. Using firm *i*'s RET_{iq} in (2) and (3) represents a hypothetical situation where firms *i* and *k* both experience the same economic events during a quarter (i.e. both firms experience economic events of firm *i*). $E(NI)$ exists for each quarter and are used to estimate annual *Market-based Comparability* between a pair of firm-year observations:

$$Market-based\ Comparability_{i-k,year} = -\frac{1}{n} \times \sum_{1}^{n} \left| E(NI)_{iq}^{i} - E(NI)_{kq}^{i} \right| \times 100 \quad (4)$$

where n is the number of previous quarters (between 14 to 16) used to estimate the accounting mapping coefficients. The absolute differences in firm *i*'s and k's expected quarterly earnings are averaged over n periods. *Market-based Comparability* is the average absolute difference multiplied by minus one so that more positive number indicates higher accounting comparability (i.e. greater average absolute differences indicate lower accounting comparability). I note that firms *i* and *k* are from different countries but from the same two-digit SIC industry, and thus *Market-based Comparability* captures accounting comparability between two firms across countries.[10]

Following De Franco et al. (2011), I truncate *NI/MVE*, *Ret*, $\hat{\gamma}_0$, and $\hat{\gamma}_1$ at 1% and 99% and exclude firms whose fiscal years do not end in March, June, September, or December. Also, *Market-based Comparability* uses time-series regression and requires previous four years of data. All countries in my

[10] Yip & Young (2012) also measure cross-country comparability using a similar measure adopted from De Franco et al. (2011) with a couple of minor differences from *Market-based Comparability* used in this study.

sample adopted IFRS in or after 2005 except for Singapore which adopted IFRS in 2003, resulting in only 60 observations that have *Market-based Comparability* available in 2007. I delete the 60 observations and use the observations with the accounting comparability measure available from 2008 because IASB made significant additions and changes to IFRS in 2005 (Capkun et al., 2016a). Finally, I exclude industry-years with less than five observations.

3.2.2 Accruals-based measure of accounting comparability

Capturing economic news with stock returns as in *Market-based Comparability* can raise measurement problems in this study for two reasons. First, unlike De Franco et al. (2011), this study uses an international setting. Using De Franco et al.'s market-based measure of accounting comparability in an international setting can raise concerns because market characteristics such as investor sophistication, market size, and volatility can differ significantly across countries. The differences in market characteristics become especially problematic if the market characteristics are correlated with culture. Second, investors' reactions to economic news could differ across cultures (Pevzner, Xie, and Xin, 2015). If so, measuring accounting comparability as the similarity in the earnings-returns relation would capture similarity in investors' reactions to economic news rather than accounting comparability.

To address these potential issues, I use an alternative accruals-based comparability model that is a modification of a model used in Barth et al. (2012). Specifically, *Accruals-based Comparability* is measured as the similarity in the association between one-year-ahead cash flows from operations ("CFO") and current total accruals. In the first step, I estimate the association between current total accruals and one-year-ahead CFO using a cross-sectional country-industry-year level regression:

$$CFO_{i,t+1} = \beta_0 + \beta_1 \text{Total Accruals}_{i,t} + \varepsilon \quad (5)$$

where *i* and *t* denote firm and fiscal year. I run this regression using firm-years in the same country, two-digit SIC industry, and fiscal year. *Total Accruals*$_t$ is total accruals calculated as income before

extraordinary items less operating cash flows plus depreciation and amortization [Compustat Global items: *IB-OANCF+DP*] scaled by lagged total assets [*AT*].[11] CFO_{t+1} is one-year-ahead CFO [*OANCF*] scaled by current total assets. I eliminate industry-country-years that contain less than 10 observations.

After I estimate β_0 and β_1 from equation (5), I follow Barth et al. (2012) and insert *Total Accruals*$_t$ of firms *i* and *k* into the equations with the coefficient estimates for firms *i* and *k* to obtain the expected cash flows from operations, $E(CFO)$:

$$E(CFO)^{i}_{i,t+1} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{it} \quad (6)$$

$$E(CFO)^{i}_{k,t+1} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{it} \quad (7)$$

$$E(CFO)^{k}_{i,t+1} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{k,t} \quad (8)$$

$$E(CFO)^{k}_{k,t+1} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{k,t} \quad (9)$$

$E(CFO)$is the expected CFO that firms *i* and *k* would have in year t+1 when the firms recognize the same level of accruals in the previous year, t. The superscripts on $E(CFO)$ indicate the firm whose *Total Accruals*$_t$ is being inserted, and the subscripts indicate the firm and year whose coefficient estimates are being used. *Accruals-based Comparability* is the similarity in the expected CFO, averaged over a pair of the same firms-years:

$Accruals - based\ Comparability_{i-k,t} =$

$$-\frac{1}{2}\times\left\{\left|E(CFO)^{i}_{i,t+1} - E(CFO)^{i}_{k,t+1}\right| + \left|E(CFO)^{k}_{i,t+1} - E(CFO)^{k}_{k,t+1}\right|\right\}\times 100 \quad (10)$$

The objective of *Accruals-based Comparability* is to capture the variation in managers' use of discretion in recognizing accruals for a given set of underlying economic events, where the discretion often

[11] Following Collins et al. (2016), I undo the effect of depreciation and amortization by adding them back into earnings because the authors document that those accruals tend to be more visible, rigid, and predictable, indicating that there is little room for managers' subjective estimates and judgments. Not adding back depreciation and amortization in total accruals does not change the statistical inference.

involves estimates and judgments (Watts, 2003; Ramanna and Watts, 2012; Ahmed and Duellman, 2013). Managers use their estimates and judgments to decide whether current economic events whose cash flows are deferred to a future period should be recognized in current earnings and by what amount. Thus, I conjecture that the association between current accruals and future CFO captures managers' reporting discretion for underlying economic events that realize as future CFO.

An important difference between *Accruals-based Comparability* and the comparability measure in Barth et al. (2012) is that the authors use current earnings instead of current total accruals. I replace earnings with current total accruals and exclude current CFO because I expect cultural differences to impact accounting through accruals rather than cash flows. I conjecture that using accruals is well suited for studying the effect of cultural beliefs and values on managers' reporting decisions; if cultural differences lower accounting comparability by affecting managers' estimates and judgments, the effect of culture would most likely manifest through accruals that involve estimates and judgments. Another notable difference between *Accruals-based Comparability* and the comparability measure in Barth et al. (2012) is that Barth et al. match US firms to non-US firms that use IFRS by industry and size. I control for firm size instead of matching by size because this study involves measuring comparability across multiple countries some of which have less than 250 firm-years. The matching design is more feasible when comparability is measured bilaterally between US and non-US firms as in Barth et al. (2012), which provides a far larger pool of observations for matching.

3.3 Relation between cultural differences and accounting comparability

I estimate the following regression to examine the effect of cultural differences on accounting comparability across countries:

$$\text{Accounting Comparability}_{i-k,t} = \beta_0 + \beta_1 \text{Cultural Difference}_{countries\ of\ i\ and\ k,t} +$$
$$\beta_2 \text{Log of Total assets}_{i,t} + \beta_3 \text{Log of Total assets}_{k,t} + \beta_4 \text{MB}_{i,t} + \beta_5 \text{MB}_{k,t} + \beta_6 \text{Leverage}_{i,t} +$$
$$\beta_7 \text{Leverage}_{k,t} + \beta_8 ROA_{i,t} + \beta_9 \text{ROA}_{k,t} + \beta_{10} \text{Enforcement}_{country-i,t} + \beta_{11} \text{Enforcement}_{country-k,t} +$$

$$\beta_{12}\text{Legal Strength}_{country-i,t} + \beta_{13}\text{Legal Strength}_{country-k,t} + \beta_{14}\text{Regulatory Strength}_{country-i,t} +$$
$$\beta_{15}\text{Regulatory Strength}_{country-k,t} + \beta_{16}\text{Log of GDP}_{county-i,t} + \beta_{17}\text{Log of GDP}_{county-k,t} +$$
$$\beta_{18}\text{Log of GDP Per Capita}_{country-i,t} + \beta_{19}\text{Log of GDP Per Capita}_{country-k,t} + \varepsilon \quad (11)$$

where *i-k* is a pair of firms *i* and *k* from two different countries, *t* is year, and *countries of i and k* are countries where firms *i* and *k* are incorporated [Compustat Global item: *FIC*]. The unit of observation for estimating accounting comparability is a pair of firm-years from the same two-digit SIC industry and year but different countries.

Cultural Difference is one of the variables that capture cultural differences in trust towards others (variable name: *Differences in Trust*), materialism (*Differences in Materialism*), or risk aversion (*Differences in Risk Aversion*). *Differences in Trust* is the absolute difference in the national means of numerical responses to the WVS question *Trust* (WVS question *Trust* is described in Appendix B). Similarly, *Differences in Materialism* and *Differences in Risk Aversion* are the differences in national mean numerical responses to WVS questions *Materialism* and *Risk Aversion* (described in Appendix B).

Often, there is more than one national mean response to a WVS question as shown in Table 1 Panel A because the national means are calculated for each survey year. For example, Australia has two national mean responses for the question *Materialism* because there were two survey years in Australia (2005 and 2012) that included *Materialism*. I estimate cultural differences at country-survey year level using the survey years that are the closest to the year I measure accounting comparability, or the current year. For example, if the year accounting comparability is being measured is 2011, the value for *Differences in Materialism* would be the absolute difference in the national mean survey responses from Australia in 2012 (from Table 1 Panel A, -4.67) and Germany in 2013 (-3.94): | -4.67-(-3.94) | =0.73. If the current year is 2007 instead of 2011, *Differences in Materialism* would be measured using the survey responses from Australia in 2005 (-4.51) and Germany in 2006 (-4.22).

To mitigate concerns that unobservable country level differences or other correlated omitted variables are driving the results, I use several country level control variables, fixed effects, and standard errors clustering. I include country-*i* and country-*k* fixed-effects to mitigate the effect of country level factors that are time-invariant, such as capital market structure and other established institutional structures.[12] I also include year fixed-effects to mitigate the effect of macroeconomic events that can influence accounting comparability and/or the responses to WVS. Finally, I cluster standard errors by country-pairs to address the underestimation of standard errors from repeating the same value for *Cultural Difference*. The repetition occurs when pairs of firm-years come from the same two countries and survey years (for example, all firm-year pairs from 2010 and from France and Singapore will have the same values for *Cultural Difference*).

For control variables, I control for firm size, market-to-book, and ROA following De Franco et al. (2011) suggest that those firm characteristics influence accounting comparability. Firm size is captured with log of total assets [Compustat Global item: *AT*]. Market-to-book, or *MB*, is market value of equity over common stockholders' equity [*CEQ*], where market value of equity is the year-end stock price times common shares outstanding [PRCCD***CSHOC*]. ROA is income before extraordinary items [*IB*] over lagged total assets [*AT*]. I also control for *Leverage*, which is total liabilities over total assets [*LT*/*AT*]. Prior research suggests that leverage induces managers to manipulate earnings to avoid covenant violation or to report more conservatively (DeFond and Jiambalvo, 1994; Gormley, Kim, and Martin, 2012). The leverage-induced reporting incentives can cause variation in reporting outcomes and lower accounting comparability.

For country level factors, I include variables that previous studies find to affect to improvements in accounting comparability through IFRS. First, I control for the strength of legal and regulatory systems using Rule of Law and Regulatory Quality annual indices from Kaufmann et al. (2009). The indices are

[12] I do not include country-pair fixed effect, which would absorb the effect of cultural difference on accounting comparability because cultural difference between a pair of countries is likely stable over a year. Including country-i and -k fixed effects absorbs the effect of a country's culture on accounting comparability but not the effect of cultural difference between two countries.

aggregate indicators based on individual variables related to legal or regulatory system from 35 data sources. The Rule of Law index reflects a government's quality of overall legal protection and enforcement, and Regulatory Quality index captures government's capability in formulating and implementing regulations to promote private sector development. Higher values for the indices indicate stronger legal or regulatory systems, and *Legal Strength* and *Regulatory Strength* are scores from the indices. *Enforcement* is a dummy variable that equals one for countries that Christensen et al. (2013) identify as countries that have proactively strengthened the enforcement of IFRS. Those countries are Germany, UK, Hong Kong, Turkey, Sweden, Norway, and Finland. Christensen et al. (2013) document that among the seven countries, Hong Kong, Sweden, and Turkey did not strengthen their enforcement concurrently with the adoption of IFRS. Thus, I classify those countries as strong enforcement countries only after the dates when those countries established strong enforcement as identified in Christensen et al. (2013). I also control for GDP and GDP per capita for countries of firms *i* and *k* because economic wellbeing can influence the WVS responses and accounting comparability. I log transform GDP and GDP per capita.

4. Sample description

I obtain my sample from Compustat Global, and the sample period is between 2005 and 2015. The sample consists of observations from 18 countries that require IFRS for public firms and have at least 200 observations in Compustat Global after certain data requirements. IFRS adoption years vary by country, and observations from pre-adoption years are dropped. I eliminate firms whose lagged total assets are less than $1 million so that scaling by lagged total assets does not create values that are too extreme. Table 1 Panel A shows the list of countries included in this study and the national average scores for WVS questions *Trust*, *Materialism*, and *Risk Aversion* from each country and survey year. The table shows that *Trust* is included in most surveys, while *Materialism* and *Risk Aversion* are missing in several surveys. In Table 1 Panel B, I present the national rankings of sample countries with regards to each WVS responses to *Trust*, *Materialism*, and *Risk Aversion* and present the top five countries with highest and lowest national scores. For ranking purposes, the national survey responses are averaged over survey years within each country.

Table 2 Panel A shows the descriptive statistics for firm level, country level, and culture-related variables. There are a total of 2,371,245 firm-year pairs for *Market-based Comparability* sample and 2,114,646, firm-year pairs for *Accruals-based Comparability*, which are comparable to about 2.1 million firm-year pairs in De Franco et al. (2011). Table 2 Panel A also shows that the average firm size is significantly larger for the *Market-based Comparability* sample than for the *Accruals-based Comparability* sample.[13] Finally, I winsorize the comparability measures and firm level control variables at 1% and 99%.

Table 2 Panel B shows country level characteristics, where the values of all characteristics except for the enforcement of IFRS are averaged over the sample period. There are seven countries that Christensen et al. (2013) identify as the countries that have significantly strengthened the enforcement of IFRS:

[13] This difference likely exists because larger firms are more likely to meet the data requirement of having previous 14 to 16 quarters for *Market-based Accounting comparability*. For *Accruals-based comparability*, I require country-industry-year groups to have at least 10 firms to be included in the sample, increasing the likelihood of industries with smaller firms to be included in the sample.

Germany, Finland, UK, Hong Kong, Norway, Sweden, and Turkey. Legal and regulatory systems are relatively stronger in Australia, Finland, UK, Singapore, and Sweden among the countries included in the sample. Finally, Table 2 Panel C shows the distribution of firm-year observations in each country and year. The five countries with the largest number of observations for both *Market-based Comparability* and *Accruals-based Comparability* samples are Australia, UK, France, Germany, and South Korea. The sum of the number of observations from the five countries comprise about 62% of total sample for *Market-based Comparability* and 69% for *Accruals-based Comparability* Belgium, Hong Kong, and Spain have less than 200 observations in *Accruals-based Comparability* sample, resulting in the exclusion of those countries in the regressions with *Accruals-based Comparability*.[14]

Table 3 shows Pearson correlation between country level variables, where correlations that are significant at 10% level are italicized and in bold fonts. The table shows that there is a high positive correlation between *Trust* and enforcement variables, which implies that strong governmental protection can promote trust among members of a society. *Trust* is also strongly and positively correlated with *Per Capita GDP*, consistent with previous studies that document trust as an important social capital helpful to economic growth (Knack and Keefer, 1997). Regarding correlation between cultural aspects, there is a strong negative correlation between *Materialism* and *Risk Aversion*, indicating that individuals from materialistic countries tend to be more risk-seeking.

[14] Statistical inferences do not change when these countries are included.

5. Empirical Results

5.1 Differences in cultural beliefs and values and accounting comparability

I first test whether greater cross-country differences in cultural beliefs and values such as trust towards others, materialism, and risk aversion reduces accounting comparability between two countries. I begin with a graph in Figure 1 that shows the distribution of country-pair observations on a two-dimensional plane. The graph has cultural differences on the horizontal axis and accounting comparability between two countries on the vertical axis. To obtain the numbers on the two axes, I first obtain the country-level mean values for *Market-based Comparability, Accruals-based Comparability, Differences in Trust*, *Differences in Materialism*, and *Differences in Risk Aversion*. Then, I standardize each variable to have a mean of zero and a standard deviation of one because each variable has a different scale. The vertical axis is the average of two accounting comparability measures between two countries; for example, I add the standardized values for *Market-based Comparability* and *Accruals-based Comparability* between Korea and Poland (the dot with label "KOR POL" on the upper left corner) and divide the sum by two to obtain 1.08. The horizontal axis is the average of the three standardized measures of cultural difference between two countries; for example, I add the standardized values for *Differences in Trust*, *Differences in Materialism*, and *Differences in Risk Aversion* between Korea and Poland and divide the sum by three to obtain -0.93.

The graph in Figure 1 has 100 dots representing 100 country-pairs. Certain countries, such as Australia and South Africa or Norway and Turkey (dots with labels AUS ZAF and NOR TUR, both on the lower right corner), have one of the largest differences in the average of three cultural aspects, and they have relatively low accounting comparability. The regression line in the middle shows a negative slope, and the Pearson correlation between averages in accounting comparability and in differences in the three cultural aspects is -0.326 which is significant at 1%. The graph and a univariate test support the negative relation between differences in the three cultural aspects and cross-country accounting comparability.

Next, I conduct multivariate tests using the model described in equation (11); the dependent variable is either *Market-based Comparability* or *Accruals-based Comparability*, and the independent variables of interest are *Differences in Trust*, *Differences in Materialism*, and *Differences in Risk Aversion*. The variables that capture cultural differences are the absolute differences in national average responses to WVS questions that capture survey participants' levels of trust towards others, materialism, and risk aversion.

I expect negative coefficients on *Differences in Trust*, *Differences in Materialism,* and *Differences in Risk Aversion,* which suggests that greater differences in the three cultural aspects lower cross-country accounting comparability. Consistent with the expectation, Table 4 shows that the coefficients on all three measures of cultural differences are negative and significant for both *Market-based Comparability* and *Accruals-based Comparability*. In addition, the fourth and eighth columns show that when I include all three cultural variables in the same regression, their coefficient estimates are all negative and significant. This result implies that each cultural aspect incrementally affects accounting comparability. Overall, the results in Table 4 supports that countries with greater cultural differences have lower accounting comparability.

To examine the economic significance of the main findings, I calculate the decrease in *Market-based Comparability* and *Accruals-based Comparability* when each cultural difference increases by a standard deviation. To do so, I multiply the standard deviation of each cultural difference by coefficient estimates on the cultural variables from the fourth and eighth columns of Table 4. I use the coefficient estimates from the two columns because the columns include all three variables for cultural differences, allowing the estimation of incremental economic significance for each cultural difference.

When *Differences in Trust* increases by its standard deviation of 0.16, *Market-based Comparability* decreases by 0.072% (0.16 times -0.452, which is the coefficient estimate for *Differences in Trust* from the

fourth column) of MVE and *Accruals-based Comparability* decreases by 1.23% of lagged total assets.[15] For *Differences in Materialism* and *Differences in Risk Aversion*, one standard deviation increase in the cultural differences decreases *Market-based Comparability* by 0.126% and 0.103% of MVE and *Accruals-based Comparability* by 0.60%, and 0.828% of lagged total assets. The combined effect of the three cultural differences is about -0.30% of MVE for *Market-based Comparability* and -2.66% of lagged total assets for *Accruals-based Comparability*.

As a comparison, the combined effect of all three cultural aspects on *Market-based Comparability* is -0.30%, which is about 7.4% and 11% of the mean (-4.05%) and the median (-2.73%) of *Market-based Comparability*. For *Accruals-based Comparability*, the combined effect is -2.66%, which is about 36% and 56% of the mean (-7.27%) and the median (-4.74%) of *Accruals-based Comparability*. While the economic effect of *Accruals-based Comparability* is apparently significant compared to the mean and median, it is less so for *Market-based Comparability*. Thus, I compare the economic significance of the cultural differences with other firm level variables; increasing *Log of Total Assets*, *MB*, *Leverage*, and *ROA* by one standard deviation (2.41, 2.48, 0.26, and 0.22) leads to the changes in *Market-based Comparability* of about 0.54%, 0.34%, -0.58%, and 0.82%, which are comparable to the combined cultural effect of 0.30%.[16] Because previous studies have suggested that these firm level characteristics are influential to accounting comparability (De Franco et al., 2011), I interpret the above results as supporting the economic significance of the cultural effects.

[15] To help understanding the meanings of the percentage changes in accounting comparability, I provide an example for each comparability measure. For *Market-based Comparability*, when two firms come from different countries with *Differences in Trust* of 0.16 and the firms experience the same stock return, their earnings would vary by 0.072% of MVE on average; if one firm has earnings of 3% of MVE, the other firm will have earnings of 3.072% or 2.928% on average, which are the absolute differences of 0.072% from 3%. For *Accruals-based Comparability*, assume two firms come from different countries with *Differences in Trust* of 0.16 and have the same current total accruals. If one firm has one-year-ahead CFO of 4.5% (median of CFO scaled by lagged total assets), the other firm will on average have one-year-ahead CFO of 3.27% or 5.73%.

[16] While the standard deviation of total assets is shown in Table 2, that of log of total assets (2.41) is untabulated.

The positive and significant coefficients on *Log of Total Assets* and *ROA* for both measures of accounting comparability indicate that larger and higher performing firms on average have more comparable accounting information. For *Leverage*, the coefficients are negative and significant suggesting that high leverage lowers accounting comparability. A possible explanation is that higher leverage induces managers to incorporate economic news into earnings inconsistently, as managers report more conservatively or manipulate earnings to avoid covenant violations. Coefficients on *MB* are also positive and significant for *Market-based Comparability* but negative for *Accruals-based Comparability*. The negative coefficients on *MB* for *Accruals-based Comparability* indicates that accounting comparability is lower among firms with higher *MB*, or firms with higher growth expectations. This result is consistent with high uncertainty in growth firms, which induces greater use of estimates and variation in reporting decisions.

A possible explanation for the positive coefficient on *MB* when *Market-based Comparability* is the dependent variable is the positive relation between firm performance and accounting comparability. The positive coefficient on *ROA* indicates that higher performing firms in terms of earnings have greater accounting comparability. Also, these firms likely have high previous stock performance, which would lead to higher *MB* as investors' expectations increase as a result of the high past performance (e.g. Myers et al. (2007)). *Regulatory Strength* is positive and significant for *Market-based Comparability*, suggesting that countries with stronger regulatory strength have higher comparability.

5.2 Moderating effects of IFRS enforcement

Christensen et al. (2013) document that Germany, UK, Hong Kong, Turkey, Sweden, Finland, and Norway strengthened the enforcement of IFRS by proactively reviewing firms' financial statements to ensure compliance with IFRS. The authors conclude that cross-country accounting comparability increased only among firms from these countries as a result of strengthening the enforcement. Based on Christensen et al. (2013), I examine whether the negative effect of cultural differences on accounting comparability is moderated by strong IFRS enforcement using the following model:

$$\text{Accounting Comparability}_{i-k,t} = \beta_0 + \beta_1 \text{Cultural Difference}_{countries\ of\ i\ and\ k,t} +$$
$$\beta_2 \text{Cultural Difference}_{countries\ of\ i\ and\ k,t} * Both\ Strong\ Enforcement_{countries\ of\ i\ and\ k,t} +$$
$$\beta_3 Both\ Strong\ Enforcement_{countries\ of\ i\ and\ k,t} + \sum Controls \quad (12)$$

Both Strong Enforcement is a dummy variable that equals one when two firm-years being compared both come from countries identified as strong enforcement countries and from the years after a country has established strong enforcement. I regress the measures of accounting comparability on the interactions of *Both Strong Enforcement* and variables that capture cultural differences, along with the main effects and other control variables. If strong enforcement of IFRS moderates the negative effect of cultural differences on accounting comparability, I expect the coefficients on the interactions (β_2) to be positive.

Table 5 shows that the coefficients on the interaction terms are positive and significant in three out of six regressions. When *Market-based Comparability* is the dependent variable, the interaction terms are positive and significant for *Differences in Trust* and *Differences in Risk Aversion* but insignificant for *Differences in Materialism*. When *Accruals-based Comparability* is the dependent variable, the interaction terms are positive and significant only for *Differences in Trust*. The findings in Table 5 suggest that proactive IFRS enforcement is weakly effective in moderating the negative effect of cultural differences on accounting comparability. The findings imply that the officials in charge of enforcing IFRS are also subject to the cultural influence, which limits their ability to mitigate the decrease in accounting comparability due to cultural differences. Finally, the coefficients on *Both Strong Enforcement* are negative and significant in three out of six cases, indicating that countries without difference in *Trust* or *Risk Aversion* have lower accounting comparability when there is strong IFRS enforcement. I do not have a good explanation for this unexpected result.

5.3 Moderating effects of legal and regulatory systems

Previous studies have suggested that increases in accounting comparability due to IFRS adoption are concentrated in countries with strong legal or regulatory systems (Daske et al., 2008; Byard et al., 2011;

Hong et al., 2014). Thus, I examine whether strong legal and regulatory systems in two countries moderate the decrease in accounting comparability due to cultural differences. I use annual indices from Kaufman et al. (2009), which the authors develop by aggregating individual variables from multiple data sources, to capture the strength of legal and regulatory systems. I create dummy variables, *Both Strong Legal System* and *Both Strong Regulatory System*, which equal one when two firm-years being compared both come from countries in the top quartile of strong legal or regulatory systems. Countries in the top quartile of strong legal or regulatory environment are Australia, Finland, Germany, Hong Kong, Norway, Singapore, Sweden, and UK.

I regress the measures of accounting comparability on the interaction of variables for cultural difference and *Both Strong System*, which is either *Both Strong Legal System* or *Both Strong Regulatory System*. I also include the main effects and the controls:

$$\begin{aligned}\text{Accounting Comparability}_{i-k,t} = {} & \beta_0 + \beta_1 \text{Cultural Difference}_{countries\ of\ i\ and\ k,t} + \\ & \beta_2 \text{Cultural Difference}_{countries\ of\ i\ and\ k,t} * Both\ Strong\ System_{countries\ of\ i\ and\ k,t} + \\ & \beta_3 Both\ Strong\ System_{countries\ of\ i\ and\ k,t} + \sum Controls \end{aligned} \quad (13)$$

If strong legal or regulatory system moderates the negative effect of cultural differences, I expect the coefficients on the interactions (β_2) to be positive and significant.

In Table 6 Panels A and B, the results show that the coefficients on the interactions are generally insignificant. An exception is the coefficient on the interactions of *Differences in Trust* and *Both Strong Legal System*, which is positive and significant. This result indicates that strong legal systems can moderate the decrease in accounting comparability due to cultural differences in trust between two countries. A possible explanation is that when auditors trust their clients more they pay less attention to aggressive reporting (Rose, 2007), and strong legal systems discipline auditors' such tendency. Consequently, the disciplining effect raises the level of professional skepticism of auditors from high trust countries closer to the level of the skepticism of auditors from low trust countries.

Overall, I find mixed results that stronger enforcement of IFRS moderates the effect of cultural differences on accounting comparability, while the moderation effects are mostly insignificant for legal and regulatory systems. One possible explanation for these findings is that cultural beliefs and values also influence those in charge of the IFRS, legal, and regulatory enforcement, resulting in weak moderation. However, I also acknowledge that the insignificant results can be due to an unknown research design issue.[17]

[17] As an example of a possible unknown research design issue, I note that Christensen et al. (2013) have conducted surveys of enforcement officials in different countries about the strengthening of the IFRS enforcement over 2001-2009. Since the survey, more countries could have strengthened their enforcement. If countries have strengthened the enforcement after the surveys and are incorrectly classified as weak enforcement countries, the incorrect classification would lower the possibility of finding significant coefficients on the interactions.

6. Robustness Tests

To further strengthen the evidence that cultural differences lower cross-country accounting comparability, I conduct two robustness tests and briefly report the results in this section. First, I re-estimate the effect of cultural differences on accounting comparability using measures of comparability and control variables aggregated at country-survey year level. I conduct this test because *Cultural Difference* is the same for firm-year pairs that are from the same two countries and use the survey responses from the same survey year (for example, all firm-year pairs whose two firm-years use survey results from Germany's 2008 survey and Korea's 2010 survey will have the same *Cultural Difference*). Having multiple observations with the same values for cultural difference induces underestimation of standard errors and over-rejection of the null hypothesis. While I cluster standard errors at the country-pair level to mitigate the underestimation of standard errors, I also conduct a more conservative approach as a robustness test.

I first calculate the averages of all variables over country-survey years and regress the measures of accounting comparability on *Cultural Difference* and control variables. I include country-*i*, country-*k*, survey year-*i*, and survey year-*k* fixed effects, with standard errors clustered by country-pairs. The aggregation shrinks the sample size to between 300 and 380 observations. Table 7 shows that the results remain statistically the same except the coefficient on *Differences in Risk Aversion* becomes insignificant when *Market-based Comparability* is the dependent variable.

In the second robustness test, I change all control variables from levels to absolute differences. For example, when I regress measures of accounting comparability on *Cultural Difference* and control variables in equation (11), I change the controls for firm performance from *ROA-i* and *ROA-k* to absolute difference in ROA between firms *i* and *k*. For *Enforcement-i* and *Enforcement-k* which are dummy variables, I replace them with dummy variables *Both Strong Enforcement* and *Both Weak Enforcement*. *Both Strong Enforcement* equals one when two firm-years being compared both come from countries with strong enforcement of IFRS as identified in Christensen et al. (2013). *Both Weak Enforcement* equals one when the two firm-years both come from countries that Christensen et al. (2013) do not identify as strengthening

the enforcement of IFRS. I examine whether controlling for differences changes the results because the measures of accounting comparability and *Cultural Difference* are also absolute differences. Table 8 shows that the main results hold although the statistical significance is reduced. For the tests involving enforcement regime, I find that all results remain statistically the same after using the differences specification.

7. Conclusions

I examine whether differences in cultural beliefs and values affect the implementation of IFRS, resulting in lower accounting comparability across countries. Studying the effect of cultural differences on accounting comparability can provide useful information to standard setters and academics because enhancing the cross-country accounting comparability is an important goal of IFRS adoption. Despite the widespread presence of IFRS across countries, there is little or no study that has examined the effect of cultural differences on accounting comparability under IFRS. I hypothesize that differences in cultural beliefs and values lower accounting comparability based on previous findings that cultural beliefs and values broadly affect individual estimates and judgments (Weber and Hsee, 2000; Guiso et al., 2006, 2008, and 2009; Kitayama and Cohen, 2010). I conjecture that managerial estimates and judgments are also subject to cultural influences, and thus cultural differences will induce inconsistent implementation of IFRS and lower accounting comparability across countries.

To examine whether cultural differences affect accounting comparability, I use WVS data obtained from the general population of 18 countries that have adopted IFRS. By including only countries that require IFRS, I hold accounting standards relatively constant and focus on culture's effect on the *implementation* of accounting standards by managers and individuals influential to financial reporting. I estimate cross-country accounting comparability with market-based and accruals-based methods from De Franco et al. (2011) and Barth et al. (2012), modified to fit the setting in this study. The accruals-based method strengthens this study by mitigating the concerns about the market-based measure that culture may affect market characteristics or investor reactions.

I find that two countries have less comparable financial statements when their cultures differ in trust towards others, materialism, and risk aversion. These findings suggest that cultural beliefs and values influence the implementation of accounting standards, and that international differences in these beliefs and values adversely affect cross-country accounting comparability. This finding is important for principles-based IFRS that allow significant discretion in interpretation and implementation of these standards. While

allowing significant reporting discretion can enhance managers' ability to convey their superior private information, differences in cultural beliefs and values can induce diversity in reporting decisions for given economic events, reducing accounting comparability across countries. Finally, in cross-sectional tests, I find only a limited support that stronger enforcement regimes, as proxied by enforcement of IFRS and legal and regulatory strength, moderate the effect of cultural differences. A possible explanation for the weak support is that those in charge of enforcement are also subject to the same cultural influences as managers.

This study examines whether greater differences in certain cultural aspects lower accounting comparability across countries that have mandated IFRS. I hypothesize that certain cultural differences lower cross-country accounting comparability based on studies from various academic fields; researchers in psychology, sociology, and economics consistently find that individuals from different cultures make different estimates and judgements. I conjecture that there are significant research opportunities in accounting in examining how certain cultural differences affect estimates and judgements of managers, auditors, financial analysts, etc. For example, one could examine whether managers and/or analysts from more risk averse cultures issue more conservative earnings forecasts. I posit that accounting studies on cultural differences is valuable and will become more so as a higher number of countries adopt IFRS and as cross-country investments increase.

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Appendix A– Variable Definitions

Accruals-based Comparability	Measure of comparability estimated as the similarity in the association between one-year-ahead CFO and current total accruals. Details are in section 3.2.2
Both Strong Enforcement	Dummy variable that equals one when two countries both have strong enforcement
Both Weak Enforcement	Dummy variable that equals one when two countries both have weak enforcement
Cultural Difference	The absolute differences between two countries in national mean WVS responses to one of the WVS questions: *Trust*, *Materialism*, and *Risk Aversion*. Can be replaced with one of the following variables for cultural difference: *Differences in Trust*, *Differences in Materialism*, and *Differences in Risk Aversion*
Differences in Trust	The absolute differences between two countries in national mean WVS responses to *Trust*. Higher value indicates greater cultural difference
Differences in Materialism	The absolute differences between two countries in national mean WVS responses to *Materialism.* Higher value indicates greater cultural difference
Differences in Risk Aversion	The absolute differences between two countries in national mean WVS responses to *Risk Aversion.* Higher value indicates greater cultural difference
E(CFO)	Expected one-year-ahead cash flows from operations for the same current total accruals. Used to estimate *Accruals-based Comparability* in Regressions (6) to (10)
E(NI)	Expected earnings for same economic events. Used to estimate *Market-based Comparability* in Regressions (2) to (4)
Enforcement	Dummy variable that equals one for firms from countries identified by Christensen et al. (2013) to have strong institutional features for proactively enforcing IFRS. Among the countries included in my study, countries identified to have strong enforcement of IFRS are Finland, Germany, Norway, UK, Hong Kong, Sweden, and Turkey. While Finland, Germany, and UK strengthened the enforcement of IFRS concurrently with IFRS adoption, Hong Kong, Sweden, and Turkey strengthened their enforcement after IFRS adoption. Thus, *Enforcement* equals one only for the years after strengthening enforcement
GDP	Annual national GDP from the World Bank in billion US Dollars
GDP Per Capita	Annual average GDP per capita from the World Bank in US Dollars
Legal Strength	Rule of Law index from Kaufman et al. (2009). Higher value means a government provides stronger legal protection for contract enforcement, property rights, etc.
Legal Strength-i&k	$\|$*Legal Strength-i – Legal Strength-k* $\|$
Leverage	Total liability [*LT*] over total assets [*AT*]
Leverage-i&k	$\|$*Leverage-i – Leverage-k* $\|$

Log of Total Assets-i&k	Log (|*Total Assets-i – Total Assets-k* |)
Log of GDP-i&k	Log (|*GDP-i – GDP-k* |)
Log of GDP Per Capita-i&k	Log (|*GDP Per Capita-i – GDP Per Capita-k* |)
Market-based Comparability	Measure of comparability estimated as the similarity in the association between contemporaneous stock return and earnings. Details are in section 3.2.1
Materialism	Numeric response to the WVS question: "It is important to this person to be rich; to have a lot of money and expensive things". WVS participants choose an integer between "1=very much like me" and "6=Not at all like me". I multiply the responses by negative one so that higher number indicates greater materialism
MB	Market-to-book calculated as *MVE*/common stockholders' equity [*CEQ*], where *MVE* is market value of equity calculated as period-end stock price [*PRCCD*] times outstanding common stocks [*CSHOC*]
MB-i&k	|*MB-i – MB-k* |
MVE	Market value of equity calculated as period-end stock price [*PRCCD*] times outstanding common stocks [*CSHOC*]
NI	Income before extraordinary items [*IB* or *IBQ* in quarterly settings]
CFO	Cash flows from operations [OANCF] scaled by total assets from previous period
Regulatory Strength	Regulatory Quality index from Kaufman et al. (2009). Higher value means a government is more capable of formulating and implementing regulations for private sector development
Regulatory Strength-i&k	|*Regulatory Strength-i – Regulatory Strength-k* |
RET	Quarterly buy-and-hold stock return adjusted for dividends using variable [*TRFD*] and stock splits using variable [*AJEXDI*]
Risk Aversion	Numeric response to the WVS question: "Adventure and taking risks are important to this person; to have an exciting life". WVS participants choose an integer between "1=very much like me" and "6=Not at all like me". Higher value indicates that an individual is more risk averse
ROA	Income before extraordinary items [*IB*] over lagged total assets (lagged [*AT*])
ROA-i&k	|*ROA-i – ROA-k* |
Total Accruals	Income before extraordinary items [IB] minus operating cash flows [OANCF] plus depreciation and amortization [DP], scaled by lagged total assets (lagged [*AT*])
Total Assets	Total assets of a firm [*AT*]

Trust	Numeric response to the WVS question: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?”. I multiply the responses by negative one so that higher number indicates greater trust

*Variables in [ ] are from Compustat Global

Appendix B – Three World Value Survey questions

I use the responses to WVS questions related to being able to trust others, materialism, and risk aversion. The first question captures the extent of trust among individuals. To the question below, participants choose between "1=Most people can be trusted" and "2=Need to be very careful":

"Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" (hereon, I denote the response to this question as "*Trust*")

I multiply the responses by negative one so that higher number indicates that individuals are more trusting of others.

The responses to the following statement capture materialism:

"It is important to this person to be rich; to have a lot of money and expensive things." (hereon, I denote the response to this question as "*Materialism*")

WVS participants choose an integer between "1=very much like me" and "6=Not at all like me". I multiply the responses by negative one so that higher number indicates greater materialism.

The last question captures individuals' risk aversion. WVS participants rate their response between integers of one through six, where "1=very much like me" and "6=Not at all like me":

"Adventure and taking risks are important to this person; to have an exciting life." (hereon, I denote the response to this question as "*Risk Aversion*")

Figure 1- Relation between accounting comparability and cultural differences in *Trust, Materialism,* and *Risk Aversion*

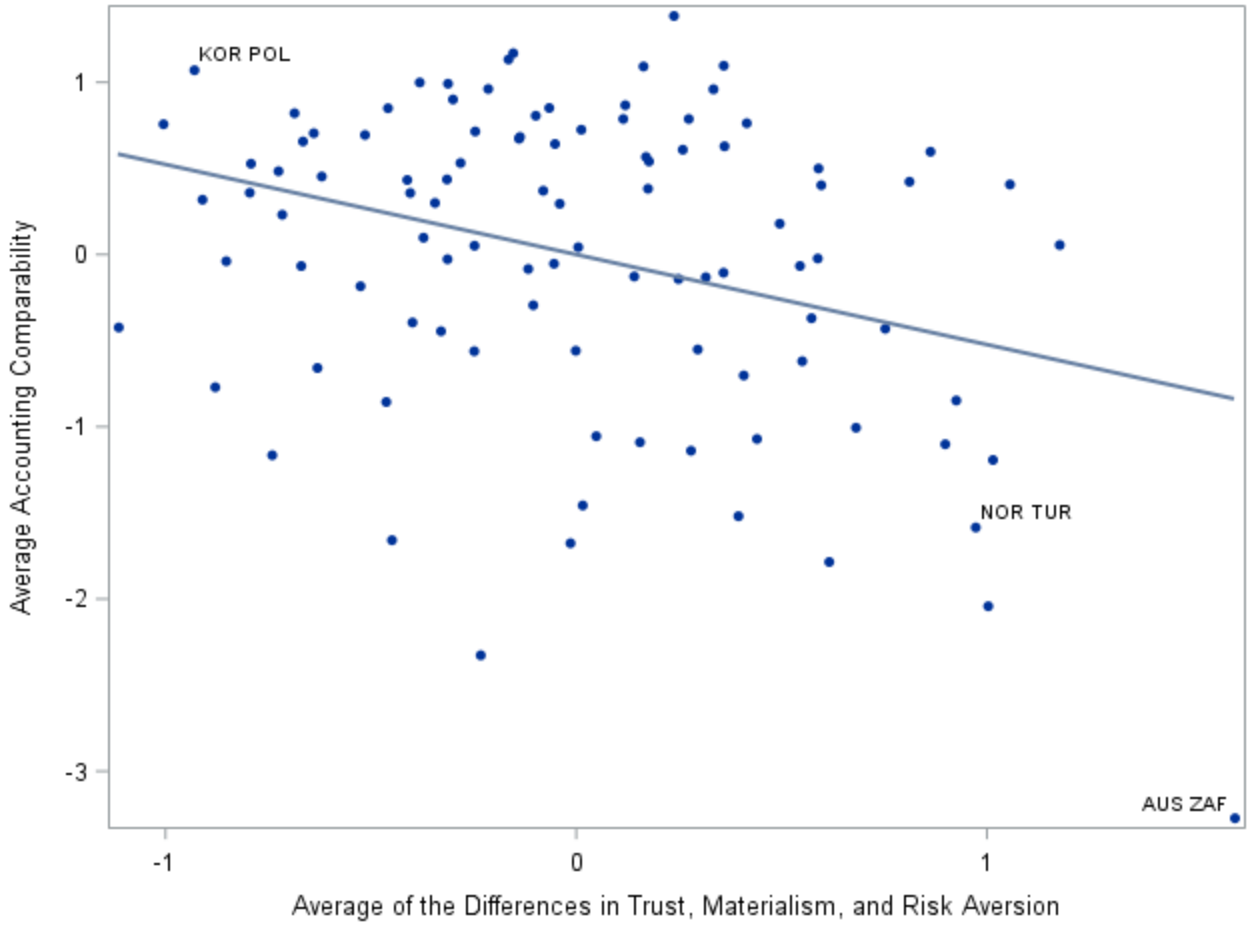

Figure 1 shows the distribution of country-pairs on a two-dimensional plane. The values on the horizontal axis are the averages of standardized differences in cultural aspects of *Trust*, *Materialism*, and *Risk Aversion*. The values on the vertical axis are the averages of standardized accounting comparability measures; *Market-based Comparability* and *Accruals-based Comparability*. The averages of the differences in three cultural dimensions and of the two comparability measures are calculated for each country-pair. There are 100 dots each representing a country-pair included in the sample.

Table 1– WVS mean responses by country and repetition

Panel A

The values under *Trust*, *Materialism*, and *Risk Aversion* are mean WVS responses from each country and survey repetition. More positive values for *Trust* indicates higher trust. Higher (more positive) values for *Materialism* and *Risk Aversion* indicates higher materialism and risk aversion.

Country	Survey year	Number of Respondents	Trust	Materialism	Risk Aversion
Australia	2005	1421	-1.52	-4.51	4.11
Australia	2012	1477	-1.46	-4.67	4.15
Belgium	2009	1509	-1.65	.	.
Brazil	2006	1500	-1.91	-5.01	4.50
Brazil	2014	1486	-1.93	-4.88	4.28
Finland	2005	1014	-1.41	-4.68	4.25
Finland	2009	1134	-1.35	.	.
France	2006	1001	-1.81	-4.98	4.09
France	2008	3071	-1.74	.	.
Germany	2006	2064	-1.66	-4.22	4.64
Germany	2008	2075	-1.61	.	.
Germany	2013	2046	-1.58	-3.94	4.39
Hong Kong	2005	1252	-1.59	.	.
Hong Kong	2013	1000	-1.52	-4.07	4.24
Italy	2005	1012	-1.71	.	.
Italy	2009	1519	-1.69	.	.
South Korea	2005	1200	-1.70	-4.43	3.47
South Korea	2010	1200	-1.70	-4.39	3.34
Malaysia	2006	1201	-1.91	-3.29	3.80
Malaysia	2012	1300	-1.91	-3.16	3.97
Norway	2007	1025	-1.26	-4.78	3.65
Norway	2008	1090	-1.25	.	.
Poland	2005	1000	-1.81	-4.15	3.71
Poland	2008	1510	-1.72	.	.
Poland	2012	966	-1.77	-3.98	3.46
Singapore	2012	1972	-1.61	-3.42	3.35
South Africa	2006	2988	.	-2.96	3.31
South Africa	2013	3531	-1.76	-2.84	2.72
Spain	2007	1200	-1.80	-4.27	3.78
Spain	2008	1500	-1.66	.	.
Spain	2011	1189	-1.80	-4.33	3.72
Sweden	2006	1003	-1.32	-4.62	4.03
Sweden	2009	1187	-1.29	.	.
Sweden	2011	1206	-1.35	-4.57	3.90
Turkey	2007	1346	-1.95	-3.63	3.78
Turkey	2009	2384	-1.89	.	.
Turkey	2011	1605	-1.88	-3.28	3.39
UK	2005	1041	-1.70	-4.54	3.82
UK	2009	1561	-1.60	.	.

Panel B- National ranks of *Trust, Materialism,* and *Risk Aversion*

Rank	Country	Trust	Rank	Country	Materialism	Rank	Country	Risk Aversion
1	Norway	-1.254	1	South Africa	-2.902	1	Germany	4.515
2	Sweden	-1.321	2	Malaysia	-3.226	2	Brazil	4.393
3	Finland	-1.383	3	Singapore	-3.416	3	Finland	4.253
4	Australia	-1.487	4	Turkey	-3.456	4	Hong Kong	4.240
5	Hong Kong	-1.553	5	Hong Kong	-4.065	5	Australia	4.127
6	Singapore	-1.615	6	Poland	-4.066	6	France	4.091
7	Germany	-1.615	7	Germany	-4.081	7	Sweden	3.965
8	UK	-1.646	8	Spain	-4.297	8	Malaysia	3.887
9	Belgium	-1.654	9	South Korea	-4.412	9	UK	3.821
10	Italy	-1.700	10	UK	-4.540	10	Spain	3.747
11	South Korea	-1.701	11	Australia	-4.590	11	Norway	3.648
12	Spain	-1.754	12	Sweden	-4.596	12	Turkey	3.585
13	South Africa	-1.764	13	Finland	-4.676	13	Poland	3.583
14	Poland	-1.767	14	Norway	-4.782	14	South Korea	3.406
15	France	-1.775	15	Brazil	-4.947	15	Singapore	3.350
16	Turkey	-1.906	16	France	-4.983	16	South Africa	3.013
17	Malaysia	-1.913		Belgium	.		Belgium	.
18	Brazil	-1.921		Italy	.		Italy	.

Top 5 Countries with Highest National Averages in:	Trust	Materialism	Risk Aversion
1	Norway	South Africa	Germany
2	Sweden	Malaysia	Brazil
3	Finland	Singapore	Finland
4	Australia	Turkey	Hong Kong
5	Hong Kong	Hong Kong	Australia

Top 5 Countries with Lowest National Averages in:	Trust	Materialism	Risk Aversion
1	Brazil	France	South Africa
2	Malaysia	Brazil	Singapore
3	Turkey	Norway	South Korea
4	France	Finland	Poland
5	Poland	Sweden	Turkey

Table 2- Descriptive Statistics

Panel A- Descriptive statistics for the pooled sample

Firm level Variables	**N**	**Mean**	**Median**	**Std Dev**	**Min**	**Q1**	**Q3**	**Max**
Sample for *Market-based Comparability*								
Market-based Comparability (%)	2,370,808	-4.05	-2.73	3.70	-13.75	-5.66	-1.26	-0.38
Quarterly Buy-and-hold Return	293,824	0.021	0.003	0.258	-0.771	-0.125	0.132	2.145
Total Assets (in $Mil)	18,229	9,748	205	92,429	1	49	1,149	2,952,182
MB	18,229	1.73	1.15	1.59	0.32	0.69	2.11	6.76
Leverage	18,229	0.46	0.47	0.24	0.05	0.26	0.64	0.86
ROA	18,229	-0.02	0.01	0.12	-0.40	-0.02	0.05	0.15
Sample for *Accruals-based Comparability*								
Accruals-based Comparability (%)	2,114,646	-7.27	-4.74	7.06	-34.97	-9.45	-2.52	-0.29
Total Accruals	25,262	-0.028	-0.006	0.548	-62.674	-0.056	0.035	6.644
CFO	25,262	0.006	0.045	0.310	-8.388	-0.038	0.109	16.960
Total Assets (in $Mil)	25,262	2,218	111	13,653	1	30	461	446,963
MB	25,262	3.79	1.30	76.34	-720	0.72	2.40	6155
Leverage	25,262	0.46	0.45	0.82	0.00	0.25	0.62	70.37
ROA	25,262	-0.05	0.02	0.25	-1.36	-0.07	0.07	0.41
Country level Variables								
Enforcement of IFRS	18	0.39	0	0.50	0	0	1	1
Legal Strength	18	1.15	1.40	0.73	-0.22	0.52	1.73	1.97
Regulatory Strength	18	1.20	1.25	0.59	0.03	0.84	1.74	1.95
GDP (in $Bil)	18	1,129	596	1,012	231	330	1,884	3,470
Per Capita GDP (in $)	18	34,647	38,130	20,820	6,473	12,180	45,521	88,100
Culture Variables								
Trust	38	-1.65	-1.69	0.20	-1.95	-1.80	-1.52	-1.25
Differences in Trust	196	0.23	0.19	0.16	0.002	0.10	0.34	0.69
Materialism	26	-4.14	-4.30	0.64	-5.01	-4.62	-3.63	-2.84
Differences in Materialism	155	0.73	0.61	0.53	0.002	0.29	1.09	2.14
Risk Aversion	26	3.84	3.81	0.44	2.72	3.47	4.15	4.64
Differences in Risk Aversion	155	0.52	0.44	0.38	0.009	0.21	0.75	1.68

Table 2 Panel A shows descriptive statistics of observations that have the necessary data between 2005 and 2015. The sample comes from countries that have adopted IFRS and have at least 200 firm-year observations, leading to 18 countries for *Market-based Comparability* and 15 countries for *Accruals-based Comparability*. The unit of observation is a firm-year for *Total Accruals*, *CFO*, *Total Assets*, *MB*, *Leverage*, and *ROA*. The unit of observation is a firm-quarter for *Quarterly Buy-and-hold Return*. The unit of observation for *Accruals-based Comparability* and *Market-based Comparability* is a pair of firm-years from different countries but from the same year and two-digit SIC industry. For *Trust*, *Materialism*, and *Risk Aversion*, the table shows the descriptive statistics of the numeric responses to the WVS questions. The unit of observation is a country-survey year. The unit of observation for *Differences in Trust, Differences in Materialism*, and *Differences in Risk Aversion* is a pair of country-survey years. Variable definitions are in Appendix A-Variable Definitions.

Panel B- Descriptive statistics by country

Country	Enforcement of IFRS	Legal Strength	Regulatory Strength	GDP ($ Bil)	Per Capita GDP ($)
Australia	0	1.77	1.75	1,146	51,486
Belgium	0	1.36	1.29	481	44,068
Brazil	0	-0.22	0.03	1,884	9,444
Germany	1	1.70	1.57	3,470	42,433
Spain	0	1.08	1.07	1,388	30,205
Finland	1	1.97	1.77	251	46,799
France	0	1.44	1.20	2,642	40,774
UK	1	1.71	1.74	2,662	42,426
Hong Kong	1	1.59	1.95	239	33,883
Italy	0	0.38	0.84	2,105	35,486
South Korea	0	0.96	0.92	1,142	23,067
Malaysia	0	0.52	0.58	252	8,862
Norway	1	1.95	1.50	433	88,100
Poland	0	0.62	0.91	464	12,180
Singapore	0	1.73	1.92	231	45,521
Sweden	1	1.93	1.71	497	52,870
Turkey	1	0.06	0.34	695	9,571
South Africa	0	0.11	0.45	330	6,473

Table 2 Panel B shows the mean country level variables for 18 countries that require IFRS during the sample period of 2005-2015. The dummy variable *Enforcement* equals one for countries that have established a proactive review of financial statements to monitor the compliance with IFRS. While Finland, Germany, Norway, and UK strengthened the enforcement of IFRS concurrently with IFRS adoption, Hong Kong, Sweden, and Turkey strengthened their enforcement after IFRS adoption. Thus, for Hong Kong, Sweden, and Turkey, *Enforcement* equals one only for the years after strengthening enforcement. *Legal Strength* is the Rule of Law index from Kaufman et al. (2009). Higher value means that a government provides stronger legal protection for contract enforcement, property rights, etc. *Regulatory Strength* is the Regulatory Quality index from Kaufman et al. (2009). Higher value for *Regulatory Strength* indicates that a country has a government system that is more capable of formulating and implementing regulations for private sector development.

Panel C- Distribution of firm-years within each country and year

Sample for *Market-based Comparability*

	2008	2009	2010	2011	2012	2013	2014	2015	National Total
Australia	0	0	7	31	499	866	875	774	3,052
Belgium	17	26	40	32	27	40	35	23	240
Brazil	0	0	0	0	0	127	138	89	354
Germany	151	211	274	294	292	301	286	106	1,915
Spain	16	45	48	48	52	48	49	41	347
Finland	32	34	37	45	37	50	39	41	315
France	135	202	279	301	295	302	296	112	1,922
UK	57	169	330	410	476	503	502	365	2,812
Hong Kong	0	0	0	0	43	64	66	64	237
Italy	52	96	130	134	131	129	125	59	856
South Korea	0	0	0	0	0	12	864	782	1,658
Malaysia	0	0	0	0	0	206	353	374	933
Norway	22	23	35	35	52	70	67	66	370
Poland	20	42	95	130	155	193	202	129	966
Singapore	0	0	0	0	0	129	222	205	556
Sweden	75	94	105	123	146	143	146	148	980
Turkey	0	0	5	13	30	105	162	152	467
South Africa	0	31	33	33	44	34	44	30	249
Annual Total	577	973	1,418	1,629	2,279	3,322	4,471	3,560	18,229

Sample for *Accruals-based Comparability*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	National Total
Australia	0	15	11	27	815	918	950	920	854	767	5,277
Brazil	0	0	0	0	0	106	102	113	105	26	452
Germany	287	331	335	307	286	264	243	224	216	89	2,582
Finland	32	43	44	42	31	31	29	29	29	27	337
France	213	259	242	237	244	225	222	214	212	52	2,120
UK	191	288	485	536	536	497	472	476	468	176	4,125
Italy	50	87	99	101	107	92	92	93	88	0	809
South Korea	0	0	0	0	0	10	553	928	968	870	3,329
Malaysia	0	0	0	0	0	316	430	423	439	329	1,937
Norway	52	72	91	79	73	75	79	66	65	62	714
Poland	19	42	84	113	121	148	159	163	163	97	1,109
Singapore	0	0	0	0	0	101	206	201	185	122	815
Sweden	83	90	96	101	108	103	105	112	106	94	998
Turkey	0	0	0	0	12	22	38	106	121	118	417
South Africa	14	28	24	25	35	25	26	25	27	12	241
Annual Total	941	1,255	1,511	1,568	2,368	2,933	3,706	4,093	4,046	2,841	25,262

Table 2 Panel C shows the distribution of 18,229 firm-years for *Market-based Comparability* and 25,262 firm-years for *Accruals-based Comparability*. While the sample period is from 2005 to 2015, the sample for *Market-based Comparability* exists from 2008 because estimating *Market-based Comparability* requires previous four years of data and most firms use IFRS since 2005. The sample for *Accruals-based Comparability* exists until 2014 because estimating *Accruals-based Comparability* requires one-year-ahead CFO. The countries in each sample have a minimum of 200 firm-years so that there are sufficient observations in comparing firm-year observations between two countries.

Table 3- Correlation between national mean trust, materialism, and risk aversion and enforcement

	Enforcement	Legal Strength	Regulatory Strength	Trust	Materialism	Risk Aversion	GDP	Per Capita GDP
Enforcement	1	***0.46***	***0.44***	***0.53***	-0.18	0.34	0.04	***0.41***
(P-Value)		***(0.0524)***	***(0.0676)***	***(0.0227)***	(0.5102)	(0.2018)	(0.8739)	***(0.0874)***
Legal Strength	***0.46***	1	***0.95***	***0.83***	-0.43	0.29	0.01	***0.84***
	(0.0524)		***(<.0001)***	***(<.0001)***	(0.1006)	(0.2683)	(0.956)	***(<.0001)***
Regulatory Strength	0.44	***0.95***	1	***0.78***	-0.28	0.25	-0.02	***0.74***
	(0.0676)	***(<.0001)***		***(0.0002)***	(0.2915)	(0.3473)	(0.9226)	***(0.0004)***
Trust	***0.53***	***0.83***	***0.78***	1	-0.40	0.15	-0.21	***0.87***
	(0.0227)	***(<.0001)***	***(0.0002)***		(0.1199)	(0.5733)	(0.4012)	***(<.0001)***
Materialism	-0.18	-0.43	-0.28	-0.40	1	***-0.57***	-0.41	***-0.53***
	(0.5102)	(0.1006)	(0.2915)	(0.1199)		***(0.0201)***	(0.1117)	***(0.0367)***
Risk Aversion	0.34	0.29	0.25	0.15	***-0.57***	1	***0.47***	0.21
	(0.2018)	(0.2683)	(0.3473)	(0.5733)	***(0.0201)***		***(0.0657)***	(0.4318)
GDP	0.04	0.01	-0.02	-0.21	-0.41	0.47	1	0.05
	(0.8739)	(0.956)	(0.9226)	(0.4012)	(0.1117)	(0.0657)		(0.8557)
Per Capita GDP	***0.41***	***0.84***	***0.74***	***0.87***	***-0.53***	0.21	0.05	1.00
	(0.0874)	***(<.0001)***	***(0.0004)***	***(<.0001)***	***(0.0367)***	(0.4318)	(0.8557)	

Table 3 shows the Pearson correlation between national mean trust, materialism, and risk aversion and enforcement variables. Numbers in parentheses are p-values, and the number of observations is 18 except for *Materialism* and *Risk Aversion* which are available only for 16 countries (Italy and Belgium are missing). Correlations that are significant at 10% level are italicized and in bold fonts. All variables are defined in Appendix A-Variable Definitions.

Table 4- Cultural differences and cross-country accounting comparability

To the right: Cultural aspects that differ across countries	Dependent variable: Market-based Comparability				Dependent variable: Accruals-based Comparability			
	Trust	Materialism	Risk Aversion	All Aspects	Trust	Materialism	Risk Aversion	All Aspects
Differences in Trust	-0.497***			-0.452***	-7.730***			-7.707***
	(-2.961)			(-2.857)	(-6.349)			(-6.516)
Differences in Materialism		-0.247***		-0.237***		-1.176***		-1.128***
		(-5.132)		(-5.028)		(-3.217)		(-3.351)
Differences in Risk Aversion			-0.270***	-0.279***			-1.797***	-2.180***
			(-3.373)	(-3.658)			(-2.877)	(-3.631)
Log of Total Assets-i	0.205***	0.223***	0.223***	0.223***	-0.040	-0.043	-0.041	-0.045
	(7.450)	(7.347)	(7.379)	(7.372)	(-1.170)	(-1.170)	(-1.141)	(-1.241)
Log of Total Assets-k	0.195***	0.209***	0.210***	0.210***	0.077**	0.083**	0.088**	0.075*
	(7.203)	(7.019)	(7.050)	(7.043)	(2.063)	(2.062)	(2.222)	(1.873)
MB-i	0.148***	0.138***	0.138***	0.138***	-0.083***	-0.084***	-0.085***	-0.084***
	(16.661)	(14.054)	(14.098)	(14.026)	(-6.653)	(-6.280)	(-6.457)	(-6.349)
MB-k	0.154***	0.144***	0.144***	0.144***	-0.091***	-0.093***	-0.094***	-0.093***
	(16.818)	(14.241)	(14.293)	(14.237)	(-4.846)	(-4.513)	(-4.608)	(-4.553)
Leverage-i	-2.352***	-2.233***	-2.240***	-2.239***	0.266	0.164	0.128	0.213
	(-15.331)	(-13.506)	(-13.499)	(-13.557)	(0.808)	(0.501)	(0.389)	(0.655)
Leverage-k	-2.354***	-2.217***	-2.224***	-2.222***	0.045	-0.034	-0.092	-0.093
	(-14.835)	(-12.994)	(-12.984)	(-13.039)	(0.129)	(-0.099)	(-0.262)	(-0.275)
ROA-i	3.876***	3.715***	3.703***	3.712***	4.871***	4.813***	4.759***	4.845***
	(6.846)	(6.267)	(6.245)	(6.273)	(6.478)	(6.311)	(6.220)	(6.354)
ROA-k	3.917***	3.767***	3.754***	3.764***	4.947***	4.897***	4.831***	4.856***
	(6.982)	(6.400)	(6.377)	(6.405)	(7.768)	(7.568)	(7.513)	(7.656)
Enforcement-i	0.406	1.400	1.124	1.640	-1.012	-0.910	-0.740	-0.851
	(0.157)	(0.526)	(0.431)	(0.632)	(-1.229)	(-0.949)	(-0.785)	(-1.027)
Enforcement-k	0.135	0.597	0.782	0.406	-0.270	0.008	0.168	-0.171
	(0.054)	(0.275)	(0.371)	(0.193)	(-0.332)	(0.009)	(0.194)	(-0.215)
Legal Strength-i	-0.411	-0.644	-0.480	-0.393	-0.066	-0.113	0.536	0.554
	(-1.125)	(-1.574)	(-1.221)	(-0.989)	(-0.029)	(-0.047)	(0.229)	(0.237)

Legal Strength-k	-0.346	-0.470	-0.306	-0.227	0.589	0.507	1.075	1.133
	(-0.934)	(-1.139)	(-0.769)	(-0.566)	(0.285)	(0.221)	(0.491)	(0.522)
Regulatory Strength-i	0.978***	1.034***	0.940***	0.919***	0.940	0.907	0.256	0.234
	(3.149)	(3.050)	(2.731)	(2.684)	(0.850)	(0.765)	(0.229)	(0.213)
Regulatory Strength-k	0.796**	0.811**	0.718**	0.707**	-1.323	-1.113	-1.613	-1.846
	(2.536)	(2.304)	(2.017)	(1.992)	(-1.022)	(-0.783)	(-1.182)	(-1.367)
Log of GDP-i	0.191	0.845	0.691	0.977	19.525*	21.277**	22.385**	23.703**
	(0.111)	(0.477)	(0.399)	(0.565)	(1.948)	(2.034)	(2.109)	(2.141)
Log of GDP-k	0.150	0.796	0.641	0.941	8.167	10.461	12.395	11.863
	(0.090)	(0.467)	(0.386)	(0.568)	(0.850)	(1.035)	(1.216)	(1.161)
Log of GDP Per Capita-i	0.192	-0.404	-0.277	-0.627	-16.296	-18.372*	-19.033*	-19.969*
	(0.114)	(-0.233)	(-0.162)	(-0.369)	(-1.621)	(-1.765)	(-1.781)	(-1.786)
Log of GDP Per Capita-k	0.330	-0.209	-0.080	-0.448	-1.995	-4.591	-6.057	-4.862
	(0.200)	(-0.123)	(-0.048)	(-0.272)	(-0.213)	(-0.470)	(-0.607)	(-0.482)
Constant	-14.584	-11.323	-12.096	-8.485	-9.116	11.428	13.673	8.294
	(-1.200)	(-0.881)	(-0.953)	(-0.679)	(-0.156)	(0.187)	(0.223)	(0.129)
Observations	2,370,371	2,100,646	2,100,646	2,100,646	2,114,646	1,967,074	1,967,074	1,967,074
R-squared	0.177	0.182	0.182	0.182	0.306	0.297	0.298	0.310
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered errors	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

I estimate the equation with observations from countries that have adopted IFRS, and the sample period is 2005-2015. I include country-*i* and -*k* fixed effects, year fixed-effects, and cluster standard errors by the pair of countries under comparison.

The dependent variables are measures of accounting comparability. I estimate *Market-based Comparability* as the difference in the translation of economic events, which is captured with quarterly buy-and-hold return, into quarterly earnings between firms *i* and *k*. Firms *i* and *k* are from the same two-digit SIC industry but are incorporated in different countries, and I measure accounting comparability between the two firms for each year. Translation of economic events is captured with γ_{0i} and γ_{1i} estimates from:

$$\frac{NI_{iq}}{MVE_{iq}} = \gamma_{0i} + \gamma_{1i} RET_{iq} + e_{iq} \qquad (1)$$

where *NI* is net income, *MVE* is market value of equity, *RET* is return, and *i* and *q* denote firm and quarter. The coefficients are measured for each year using 14 to 16 previous quarters from the current year-end and are used in the next step:

$$E(NI)_{iq}^{i} = \hat{\gamma}_{0i} + \hat{\gamma}_{1i} RET_{iq} \qquad (2)$$

$$E(NI)_{kq}^{i} = \hat{\gamma}_{0k} + \hat{\gamma}_{1k} RET_{iq} \qquad (3)$$

where firm *i*'s quarter *t* return is inserted into the regressions (2) and (3). The predicted values are $E(NI)_{iq}^{i}$ and $E(NI)_{kq}^{i}$, that are firm *i*'s and *k*'s expected quarterly earnings when firm *i*'s quarterly return, which reflects firm *i*'s economic events, is inserted into each firm's accounting systems. Superscript on $E(NI)_{iq}^{i}$ and $E(NI)_{kq}^{i}$ indicate the firm whose return is being inserted, and subscripts *i* and *k* indicate the firm whose coefficient estimates are being used. *Market-based Comparability* is estimated as:

$$Market-based\ Comparability_{i-k,year} = -\frac{1}{16} \times \sum_{t-15}^{t} \left| E(NI)_{iq}^{i} - E(NI)_{kq}^{i} \right| \times 100 \qquad (4)$$

Where *i-k* is the pair of firm *i*- and *k*-years, *year* and *t* are the year and fourth quarter of the year whose *Market-based Comparability* is being measured.

I estimate *Accruals-based Comparability* as the similarity in the association between one-year-ahead CFO and current total accruals. I measure the association by cross-sectionally regressing one-year-ahead CFO on current total accruals of firm-years from the same country, two-digit SIC industry, and fiscal year:

$$CFO_{i,t+1} = \beta_0 + \beta_1 \text{Total Accruals}_{i,t} + \varepsilon \qquad (5)$$

where *CFO* and total accruals denote cash flows from operations and total accruals, scaled by total assets of the previous period. *i* and *t* denote firm and fiscal year. In the next step, I insert firm *i*'s year *t* total accruals into the equations with β_0 and β_1 coefficient estimates for firms *i* and *k* and year *t*, where firms *i* and *k* are from different countries but from the same industry:

$$E(CFO)_{i,t+1}^{i} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{it} \qquad (6)$$

$$E(CFO)_{k,t+1}^{i} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{it} \qquad (7)$$

$$E(CFO)_{i,t+1}^{k} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{k,t} \qquad (8)$$

$$E(CFO)_{k,t+1}^{k} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{k,t} \qquad (9)$$

$E(CFO)_{t+1}$ is the expected one-year-ahead CFO when two managers recognize the same level of current total accruals. Superscripts denotes the firm whose total accruals is being inserted, and the subscripts *i* or *k* denote the firm whose coefficient estimates are being used. *Accruals-based Comparability* is the absolute difference in the $E(CFO)_{t+1}$ between firms *i* and *k* averaged over a pair of the same firms-years:

$$Accruals - based\ Comparability_{i-k,t} =$$

$$-\frac{1}{2}\times\left\{\left|E(CFO)^{i}_{i,t+1} - E(CFO)^{i}_{k,t+1}\right| + \left|E(CFO)^{k}_{i,t+1} - E(CFO)^{k}_{k,t+1}\right|\right\}\times 100 \qquad (10)$$

The independent variables of interest are *Cultural Differences*. *Differences in Trust* is the absolute differences between two countries in national mean WVS responses to *Trust*. *Differences in Materialism* and *Differences in Risk Aversion* are the absolute differences in national mean WVS responses to *Materialism* and *Risk Aversion*. Other variables are defined in Appendix A – Variable Definitions.

Table 5– Moderating effect of strong enforcement

To the right: Cultural aspects that differ across countries	Dependent variable: Market-based Comparability			Dependent variable: Accruals-based comparability		
	Trust	Materialism	Risk Aversion	Trust	Materialism	Risk Aversion
Differences in Trust	-0.634***			-9.345***		
	(-3.643)			(-6.478)		
Differences in Trust* Both Strong Enforcement	0.565**			8.414***		
	(2.138)			(4.062)		
Differences in Materialism		-0.231***			-1.070***	
		(-4.282)			(-2.795)	
Differences in Materialism* Both Strong Enforcement		-0.091			-0.814	
		(-0.610)			(-0.841)	
Differences in Risk Aversion			-0.306***			-1.705**
			(-3.579)			(-2.541)
Differences in Risk Aversion* Both Strong Enforcement			0.436***			-0.517
			(2.798)			(-0.506)
Both Strong Enforcement	-0.234***	-0.036	-0.294***	-2.783***	-0.383	-0.546
	(-3.447)	(-0.374)	(-3.094)	(-3.802)	(-0.515)	(-0.642)
Log of Total Assets-i	0.205***	0.223***	0.224***	-0.046	-0.044	-0.043
	(7.442)	(7.347)	(7.385)	(-1.365)	(-1.196)	(-1.185)
Log of Total Assets-k	0.195***	0.209***	0.210***	0.072*	0.083**	0.088**
	(7.195)	(7.019)	(7.056)	(1.901)	(2.062)	(2.204)
MB-i	0.148***	0.138***	0.138***	-0.081***	-0.084***	-0.084***
	(16.644)	(14.037)	(14.115)	(-6.457)	(-6.237)	(-6.411)
MB-k	0.154***	0.144***	0.144***	-0.089***	-0.092***	-0.093***
	(16.810)	(14.236)	(14.316)	(-4.706)	(-4.479)	(-4.551)
Leverage-i	-2.347***	-2.232***	-2.238***	0.353	0.184	0.157
	(-15.318)	(-13.496)	(-13.495)	(1.101)	(0.570)	(0.484)
Leverage-k	-2.349***	-2.216***	-2.221***	0.112	-0.019	-0.068
	(-14.834)	(-12.989)	(-12.987)	(0.335)	(-0.055)	(-0.197)
ROA-i	3.882***	3.717***	3.705***	4.964***	4.834***	4.789***
	(6.864)	(6.271)	(6.255)	(6.716)	(6.388)	(6.318)
ROA-k	3.923***	3.768***	3.756***	5.000***	4.908***	4.850***
	(7.000)	(6.403)	(6.388)	(8.006)	(7.645)	(7.615)
Enforcement-i	0.466	1.435	1.065	-0.642	-0.561	-0.279
	(0.180)	(0.538)	(0.407)	(-0.682)	(-0.527)	(-0.267)
Enforcement-k	0.185	0.637	0.928	-0.010	0.369	0.648
	(0.074)	(0.293)	(0.437)	(-0.011)	(0.358)	(0.646)
Legal Strength-i	-0.458	-0.679*	-0.540	0.021	0.072	0.852
	(-1.261)	(-1.678)	(-1.389)	(0.010)	(0.031)	(0.365)
Legal Strength-k	-0.389	-0.505	-0.366	0.891	0.699	1.456
	(-1.057)	(-1.239)	(-0.927)	(0.434)	(0.311)	(0.670)

Regulatory Strength-i	0.985***	1.032***	0.971***	0.832	0.671	-0.086
	(3.190)	(3.030)	(2.841)	(0.788)	(0.594)	(-0.080)
Regulatory Strength-k	0.800**	0.809**	0.748**	-1.239	-1.264	-1.869
	(2.552)	(2.286)	(2.118)	(-0.971)	(-0.914)	(-1.410)
Log of GDP-i	0.171	0.836	0.588	21.274**	21.763**	23.270**
	(0.099)	(0.472)	(0.339)	(2.224)	(2.107)	(2.255)
Log of GDP-k	0.123	0.788	0.537	9.627	10.206	12.338
	(0.074)	(0.461)	(0.321)	(1.034)	(1.013)	(1.229)
Log of GDP Per Capita-i	0.134	-0.411	-0.230	-17.269*	-18.617*	-19.510*
	(0.079)	(-0.236)	(-0.135)	(-1.803)	(-1.812)	(-1.876)
Log of GDP Per Capita-k	0.279	-0.215	-0.033	-2.896	-4.155	-5.658
	(0.169)	(-0.127)	(-0.020)	(-0.317)	(-0.426)	(-0.573)
Constant	-12.895	-10.941	-11.555	-11.804	7.580	8.400
	(-1.060)	(-0.850)	(-0.912)	(-0.197)	(0.125)	(0.137)
Observations	2,370,371	2,100,646	2,100,646	2,114,646	1,967,074	1,967,074
R-squared	0.177	0.182	0.182	0.310	0.298	0.298
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered errors	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

I estimate the equation with observations from countries that have adopted IFRS, and the sample period is 2005-2015. I include country-*i* and -*k* fixed effects, year fixed-effects, and cluster standard errors by the pair of countries under comparison.

The dependent variables are measures of accounting comparability. I estimate *Market-based Comparability* as the difference in the translation of economic events, which is captured with quarterly buy-and-hold return, into quarterly earnings between firms *i* and *k*. Firms *i* and *k* are from the same two-digit SIC industry but are incorporated in different countries, and I measure accounting comparability between the two firms for each year. Translation of economic events is captured with γ_{0i} and γ_{1i} estimates from:

$$\frac{NI_{iq}}{MVE_{iq}} = \gamma_{0i} + \gamma_{1i} RET_{iq} + e_{iq} \qquad (1)$$

where *NI* is net income, *MVE* is market value of equity, *RET* is return, and *i* and *q* denote firm and quarter. The coefficients are measured for each year using 14 to 16 previous quarters from the current year-end and are used in the next step:

$$E(NI)^{i}_{iq} = \hat{\gamma}_{0i} + \hat{\gamma}_{1i} RET_{iq} \qquad (2)$$

$$E(NI)^{i}_{kq} = \hat{\gamma}_{0k} + \hat{\gamma}_{1k} RET_{iq} \qquad (3)$$

where firm *i*'s quarter *t* return is inserted into the regressions (2) and (3). The predicted values are $E(NI)^{i}_{iq}$ and $E(NI)^{i}_{kq}$, that are firm *i*'s and *k*'s expected quarterly earnings when firm *i*'s quarterly return, which reflects firm *i*'s economic events, is inserted into each firm's accounting systems. Superscript on $E(NI)^{i}_{iq}$ and $E(NI)^{i}_{kq}$ indicate the firm whose return is being inserted, and subscripts *i* and *k* indicate the firm whose coefficient estimates are being used. *Market-based Comparability* is estimated as:

$$Market-based\ Comparability_{i-k,year} = -\frac{1}{16}\times\sum_{t-15}^{t}\left|E(NI)_{iq}^{i} - E(NI)_{kq}^{i}\right|\times 100 \qquad (4)$$

Where *i*-*k* is the pair of firm *i*- and *k*-years, *year* and *t* are the year and fourth quarter of the year whose *Market-based Comparability* is being measured.

I estimate *Accruals-based Comparability* as the similarity in the association between one-year-ahead CFO and current total accruals. I measure the association by cross-sectionally regressing one-year-ahead CFO on current total accruals of firm-years from the same country, two-digit SIC industry, and fiscal year:

$$CFO_{i,t+1} = \beta_0 + \beta_1 \text{Total Accruals}_{i,t} + \varepsilon \qquad (5)$$

where *CFO* and total accruals denote cash flows from operations and total accruals, scaled by total assets of the previous period. *i* and *t* denote firm and fiscal year. In the next step, I insert firm *i*'s year *t* total accruals into the equations with β_0 and β_1 coefficient estimates for firms *i* and *k* and year *t*, where firms *i* and *k* are from different countries but from the same industry:

$$E(CFO)_{i,t+1}^{i} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{it} \qquad (6)$$

$$E(CFO)_{k,t+1}^{i} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{it} \qquad (7)$$

$$E(CFO)_{i,t+1}^{k} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{k,t} \qquad (8)$$

$$E(CFO)_{k,t+1}^{k} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{k,t} \qquad (9)$$

$E(CFO)_{t+1}$ is the expected one-year-ahead CFO when two managers recognize the same level of current total accruals. Superscripts denotes the firm whose total accruals is being inserted, and the subscripts *i* or *k* denote the firm whose coefficient estimates are being used. *Accruals-based Comparability* is the absolute difference in the $E(CFO)_{t+1}$ between firms *i* and *k* averaged over a pair of the same firms-years:

$$Accruals-based\ Comparability_{i-k,t} =$$

$$-\frac{1}{2}\times\left\{\left|E(CFO)_{i,t+1}^{i} - E(CFO)_{k,t+1}^{i}\right| + \left|E(CFO)_{i,t+1}^{k} - E(CFO)_{k,t+1}^{k}\right|\right\}\times 100 \qquad (10)$$

Differences in Trust is the absolute differences between two countries in national mean WVS responses to *Trust*. *Differences in Materialism* and *Differences in Risk Aversion* are the absolute differences in national mean WVS responses to *Materialism* and *Risk Aversion*. *Both Strong Enforcement* is a dummy variable that equals one when both countries being compared have proactive enforcements of IFRS according to Christensen et al. (2013). Other variables are defined in Appendix A – Variable Definitions.

Table 6– Moderating effect of strong legal and regulatory systems

Panel A. Legal system

To the right: Cultural aspects that differ across countries	Dependent variable: Market-based Comparability			Dependent variable: Accruals-based comparability		
	Trust	Materialism	Risk Aversion	Trust	Materialism	Risk Aversion
Differences in Trust	-0.467**			-9.645***		
	(-2.372)			(-4.124)		
Differences in Trust* Both Strong Legal System	0.636**			5.885		
	(2.318)			(1.231)		
Differences in Materialism		-0.240***			-1.044**	
		(-4.666)			(-2.436)	
Differences in Materialism* Both Strong Legal System		-0.055			-1.273	
		(-0.627)			(-1.211)	
Differences in Risk Aversion			-0.283***			-1.840***
			(-3.485)			(-2.835)
Differences in Risk Aversion* Both Strong Legal System			0.114			-0.098
			(0.700)			(-0.074)
Both Strong Legal System	-0.042	0.194**	0.130	-2.215	0.671	0.480
	(-0.572)	(2.359)	(1.564)	(-1.240)	(0.541)	(0.355)
Log of Total Assets-i	0.205***	0.223***	0.223***	-0.040	-0.043	-0.042
	(7.448)	(7.341)	(7.373)	(-1.146)	(-1.170)	(-1.153)
Log of Total Assets-k	0.195***	0.209***	0.210***	0.076**	0.083**	0.087**
	(7.201)	(7.011)	(7.045)	(2.033)	(2.062)	(2.211)
MB-i	0.148***	0.138***	0.138***	-0.082***	-0.084***	-0.085***
	(16.637)	(14.036)	(14.063)	(-6.566)	(-6.304)	(-6.478)
MB-k	0.154***	0.144***	0.144***	-0.091***	-0.093***	-0.094***
	(16.797)	(14.220)	(14.260)	(-4.746)	(-4.550)	(-4.641)
Leverage-i	-2.351***	-2.231***	-2.239***	0.252	0.173	0.137
	(-15.322)	(-13.481)	(-13.486)	(0.752)	(0.503)	(0.398)
Leverage-k	-2.353***	-2.215***	-2.222***	0.022	-0.031	-0.086
	(-14.827)	(-12.969)	(-12.971)	(0.062)	(-0.085)	(-0.238)
ROA-i	3.878***	3.718***	3.704***	4.870***	4.820***	4.764***
	(6.848)	(6.269)	(6.252)	(6.526)	(6.211)	(6.132)
ROA-k	3.919***	3.769***	3.755***	4.956***	4.893***	4.830***
	(6.984)	(6.401)	(6.384)	(7.924)	(7.566)	(7.520)
Enforcement-i	0.235	1.208	1.044	-0.922	-0.935	-0.748
	(0.090)	(0.449)	(0.397)	(-1.127)	(-0.993)	(-0.800)
Enforcement-k	-0.036	0.785	0.855	-0.191	-0.011	0.177
	(-0.014)	(0.360)	(0.404)	(-0.235)	(-0.013)	(0.206)
Legal Strength-i	-0.480	-0.940**	-0.747*	0.920	-0.466	0.058
	(-1.229)	(-2.214)	(-1.843)	(0.526)	(-0.215)	(0.028)
Legal Strength-k	-0.414	-0.765*	-0.573	1.490	0.220	0.668

	(-1.047)	(-1.799)	(-1.401)	(0.997)	(0.117)	(0.380)
Regulatory Strength-i	0.991***	1.067***	0.927**	0.886	1.054	0.403
	(3.183)	(3.073)	(2.579)	(0.831)	(0.860)	(0.351)
Regulatory Strength-k	0.806**	0.843**	0.704*	-1.309	-0.984	-1.504
	(2.555)	(2.353)	(1.902)	(-1.024)	(-0.703)	(-1.129)
Log of GDP-i	0.092	0.689	0.624	17.702*	22.274**	22.722**
	(0.053)	(0.384)	(0.356)	(1.885)	(2.178)	(2.187)
Log of GDP-k	0.051	0.641	0.574	7.601	11.128	12.334
	(0.030)	(0.372)	(0.344)	(0.794)	(1.086)	(1.200)
Log of GDP Per Capita-i	0.308	-0.255	-0.195	-15.246	-19.015*	-19.069*
	(0.180)	(-0.145)	(-0.113)	(-1.534)	(-1.828)	(-1.792)
Log of GDP Per Capita-k	0.448	-0.060	0.001	-2.171	-4.957	-5.723
	(0.268)	(-0.035)	(0.001)	(-0.230)	(-0.501)	(-0.573)
Constant	-15.541	-11.461	-11.964	-3.806	11.164	9.413
	(-1.270)	(-0.901)	(-0.951)	(-0.065)	(0.180)	(0.153)
Observations	2,370,371	2,100,646	2,100,646	2,114,646	1,967,074	1,967,074
R-squared	0.177	0.182	0.182	0.308	0.297	0.298
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered errors	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Panel B. Regulatory system

To the right: Cultural aspects that differ across countries	Dependent variable: Market-based Comparability			Dependent variable: Accruals-based comparability		
	Trust	Materialism	Risk Aversion	Trust	Materialism	Risk Aversion
Differences in Trust	-0.455**			-8.579***		
	(-2.518)			(-6.172)		
Differences in Trust* Both Strong Regulatory System	0.621			2.935		
	(1.334)			(0.798)		
Differences in Materialism		-0.228***			-1.117***	
		(-4.127)			(-2.793)	
Differences in Materialism* Both Strong Regulatory System		-0.127			-0.512	
		(-1.344)			(-0.553)	
Differences in Risk Aversion			-0.309***			-1.655**
			(-3.764)			(-2.493)
Differences in Risk Aversion* Both Strong Regulatory System			0.203			-1.807
			(0.941)			(-1.347)
Both Strong Regulatory System	0.064	0.325***	0.258***	-1.748***	-0.348	0.422
	(0.809)	(4.990)	(2.893)	(-2.642)	(-0.380)	(0.374)
Log of Total Assets-i	0.205***	0.223***	0.223***	-0.040	-0.043	-0.041
	(7.444)	(7.344)	(7.377)	(-1.169)	(-1.164)	(-1.141)
Log of Total Assets-k	0.195***	0.209***	0.210***	0.077**	0.083**	0.088**
	(7.197)	(7.014)	(7.047)	(2.055)	(2.069)	(2.211)
MB-i	0.149***	0.139***	0.138***	-0.082***	-0.084***	-0.084***
	(16.542)	(13.995)	(14.001)	(-6.444)	(-6.192)	(-6.372)
MB-k	0.155***	0.145***	0.145***	-0.092***	-0.093***	-0.094***
	(16.694)	(14.165)	(14.191)	(-4.820)	(-4.529)	(-4.628)
Leverage-i	-2.349***	-2.227***	-2.237***	0.262	0.162	0.130
	(-15.335)	(-13.462)	(-13.485)	(0.797)	(0.488)	(0.390)
Leverage-k	-2.352***	-2.210***	-2.220***	0.035	-0.036	-0.090
	(-14.844)	(-12.958)	(-12.974)	(0.101)	(-0.102)	(-0.253)
ROA-i	3.886***	3.731***	3.712***	4.872***	4.814***	4.765***
	(6.893)	(6.307)	(6.285)	(6.539)	(6.303)	(6.222)
ROA-k	3.927***	3.782***	3.763***	4.944***	4.895***	4.833***
	(7.026)	(6.435)	(6.416)	(7.750)	(7.535)	(7.511)
Enforcement-i	0.080	1.046	0.994	-0.790	-0.809	-0.668
	(0.031)	(0.386)	(0.377)	(-0.974)	(-0.854)	(-0.716)
Enforcement-k	-0.199	0.978	0.991	-0.072	0.105	0.237
	(-0.079)	(0.449)	(0.473)	(-0.088)	(0.117)	(0.271)
Legal Strength-i	-0.468	-0.638	-0.526	0.848	0.210	0.730
	(-1.304)	(-1.577)	(-1.360)	(0.467)	(0.100)	(0.355)
Legal Strength-k	-0.400	-0.463	-0.351	1.412	0.785	1.280
	(-1.107)	(-1.142)	(-0.905)	(0.846)	(0.397)	(0.672)

Regulatory Strength-i	0.895***	0.878***	0.810**	1.034	0.929	0.326
	(3.118)	(2.759)	(2.496)	(0.875)	(0.773)	(0.286)
Regulatory Strength-k	0.708**	0.654*	0.586*	-1.220	-1.065	-1.512
	(2.360)	(1.913)	(1.694)	(-0.939)	(-0.755)	(-1.109)
Log of GDP-i	-0.054	0.556	0.538	18.375*	20.789**	22.232**
	(-0.031)	(0.310)	(0.308)	(1.892)	(2.048)	(2.173)
Log of GDP-k	-0.100	0.507	0.488	7.936	10.339	12.346
	(-0.060)	(0.296)	(0.295)	(0.825)	(1.023)	(1.216)
Log of GDP Per Capita-i	0.407	-0.170	-0.183	-15.272	-17.902*	-18.811*
	(0.239)	(-0.096)	(-0.106)	(-1.546)	(-1.753)	(-1.802)
Log of GDP Per Capita-k	0.551	0.025	0.014	-1.923	-4.496	-5.942
	(0.332)	(0.015)	(0.008)	(-0.206)	(-0.462)	(-0.597)
Constant	-15.451	-11.902	-11.437	-13.879	8.645	10.549
	(-1.262)	(-0.912)	(-0.891)	(-0.236)	(0.142)	(0.171)
Observations	2,370,371	2,100,646	2,100,646	2,114,646	1,967,074	1,967,074
R-squared	0.177	0.182	0.182	0.308	0.297	0.298
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered errors	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

I estimate the equation with observations from countries that have adopted IFRS, and the sample period is 2005-2015. I include country-*i* and -*k* fixed effects, year fixed-effects, and cluster standard errors by the pair of countries under comparison.

The dependent variables are measures of accounting comparability. I estimate *Market-based Comparability* as the difference in the translation of economic events, which is captured with quarterly buy-and-hold return, into quarterly earnings between firms *i* and *k*. Firms *i* and *k* are from the same two-digit SIC industry but are incorporated in different countries, and I measure accounting comparability between the two firms for each year. Translation of economic events is captured with γ_{0i} and γ_{1i} estimates from:

$$\frac{NI_{iq}}{MVE_{iq}} = \gamma_{0i} + \gamma_{1i} RET_{iq} + e_{iq} \qquad (1)$$

where *NI* is net income, *MVE* is market value of equity, *RET* is return, and *i* and *q* denote firm and quarter. The coefficients are measured for each year using 14 to 16 previous quarters from the current year-end and are used in the next step:

$$E(NI)^{i}_{iq} = \hat{\gamma}_{0i} + \hat{\gamma}_{1i} RET_{iq} \qquad (2)$$

$$E(NI)^{i}_{kq} = \hat{\gamma}_{0k} + \hat{\gamma}_{1k} RET_{iq} \qquad (3)$$

where firm *i*'s quarter *t* return is inserted into the regressions (2) and (3). The predicted values are $E(NI)^{i}_{iq}$ and $E(NI)^{i}_{kq}$, that are firm *i*'s and *k*'s expected quarterly earnings when firm *i*'s quarterly return, which reflects firm *i*'s economic events, is inserted into each firm's accounting systems. Superscript on $E(NI)^{i}_{iq}$ and $E(NI)^{i}_{kq}$ indicate the firm whose return is being inserted, and subscripts *i* and *k* indicate the firm whose coefficient estimates are being used. *Market-based Comparability* is estimated as:

$$Market-based\ Comparability_{i-k,year} = -\frac{1}{16}\times\sum_{t-15}^{t}\left|E(NI)_{iq}^{i} - E(NI)_{kq}^{i}\right|\times 100 \quad (4)$$

Where *i-k* is the pair of firm *i*- and *k*-years, *year* and *t* are the year and fourth quarter of the year whose *Market-based Comparability* is being measured.

I estimate *Accruals-based Comparability* as the similarity in the association between one-year-ahead CFO and current total accruals. I measure the association by cross-sectionally regressing one-year-ahead CFO on current total accruals of firm-years from the same country, two-digit SIC industry, and fiscal year:

$$CFO_{i,t+1} = \beta_0 + \beta_1 \text{Total Accruals}_{i,t} + \varepsilon \quad (5)$$

where *CFO* and total accruals denote cash flows from operations and total accruals, scaled by total assets of the previous period. *i* and *t* denote firm and fiscal year. In the next step, I insert firm *i*'s year *t* total accruals into the equations with β_0 and β_1 coefficient estimates for firms *i* and *k* and year *t*, where firms *i* and *k* are from different countries but from the same industry:

$$E(CFO)_{i,t+1}^{i} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{it} \quad (6)$$

$$E(CFO)_{k,t+1}^{i} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{it} \quad (7)$$

$$E(CFO)_{i,t+1}^{k} = \hat{\beta}_{0i} + \hat{\beta}_{1i} Total\ Accruals_{k,t} \quad (8)$$

$$E(CFO)_{k,t+1}^{k} = \hat{\beta}_{0k} + \hat{\beta}_{1k} Total\ Accruals_{k,t} \quad (9)$$

$E(CFO)_{t+1}$ is the expected one-year-ahead CFO when two managers recognize the same level of current total accruals. Superscripts denotes the firm whose total accruals is being inserted, and the subscripts *i* or *k* denote the firm whose coefficient estimates are being used. *Accruals-based Comparability* is the absolute difference in the $E(CFO)_{t+1}$ between firms *i* and *k* averaged over a pair of the same firms-years:

$$Accruals-based\ Comparability_{i-k,t} =$$

$$-\frac{1}{2}\times\left\{\left|E(CFO)_{i,t+1}^{i} - E(CFO)_{k,t+1}^{i}\right| + \left|E(CFO)_{i,t+1}^{k} - E(CFO)_{k,t+1}^{k}\right|\right\}\times 100 \quad (10)$$

Differences in Trust is the absolute differences between two countries in national mean WVS responses to *Trust*. *Differences in Materialism* and *Differences in Risk Aversion* are the absolute differences in national mean WVS responses to *Materialism* and *Risk Aversion*. *Both Strong Regulatory System* and *Both Strong Legal System* are dummy variables that equal one when both countries being compared are in the top quartile for having strong regulatory and legal systems according to Kaufman et al. (2009) indices. Other variables are defined in Appendix A – Variable Definitions.

Table 7– Robustness test with variables aggregated at country-survey year level

To the right: Cultural aspects that differ across countries	Dependent variable: Market-based Comparability				Dependent variable: Accruals-based Comparability			
	Trust	Materialism	Risk Aversion	All Aspects	Trust	Materialism	Risk Aversion	All Aspects
Differences in Trust	-0.841***			-0.768**	-6.009***			-5.611***
	(-2.837)			(-2.397)	(-6.915)			(-5.901)
Differences in Materialism		-0.289***		-0.239**		-1.099***		-0.745**
		(-3.149)		(-2.524)		(-3.313)		(-2.576)
Differences in Risk Aversion			-0.123	-0.085			-1.429**	-1.605***
			(-0.688)	(-0.457)			(-2.584)	(-3.137)
Log of Total Assets-i	0.307**	0.291	0.289	0.305*	-0.118	0.224	0.122	0.057
	(2.033)	(1.607)	(1.587)	(1.681)	(-0.293)	(0.509)	(0.285)	(0.146)
Log of Total Assets-k	0.370**	0.368**	0.358**	0.373**	0.452	0.624	0.459	0.550
	(2.503)	(2.099)	(2.025)	(2.128)	(0.803)	(1.019)	(0.745)	(0.927)
MB-i	0.084	0.088	0.094	0.037	-1.452***	-1.092**	-1.021**	-1.314***
	(0.613)	(0.634)	(0.667)	(0.265)	(-3.317)	(-2.313)	(-2.105)	(-2.946)
MB-k	0.128	0.139	0.144	0.087	-1.287***	-1.166***	-1.201***	-1.154***
	(0.959)	(1.045)	(1.056)	(0.644)	(-4.371)	(-3.322)	(-3.416)	(-3.562)
Leverage-i	-3.416**	-3.584**	-3.536**	-3.729**	6.926	6.643	6.820	7.778*
	(-2.258)	(-2.106)	(-2.084)	(-2.224)	(1.578)	(1.288)	(1.329)	(1.696)
Leverage-k	-3.813**	-3.826**	-3.711**	-3.957**	9.816**	15.079***	14.070***	9.405**
	(-2.508)	(-2.249)	(-2.184)	(-2.363)	(2.331)	(3.456)	(3.118)	(2.180)
ROA-i	11.443***	12.526***	12.048***	12.223***	-1.879	-7.418	-8.512	-4.973
	(4.136)	(3.275)	(3.119)	(3.266)	(-0.204)	(-0.765)	(-0.888)	(-0.565)
ROA-k	9.909***	10.729***	10.299***	10.424***	11.276*	10.679	10.923	11.422*
	(3.706)	(2.854)	(2.704)	(2.834)	(1.823)	(1.494)	(1.566)	(1.796)
Enforcement-i	-1.944	-5.121	-0.284	0.558	-4.991**	-4.365*	-4.311*	-4.491*
	(-0.155)	(-0.359)	(-0.021)	(0.042)	(-1.990)	(-1.685)	(-1.662)	(-1.737)
Enforcement-k	-3.762	-6.479	-5.356	-4.037	-0.544	-0.922	-1.174	-0.872
	(-0.279)	(-0.583)	(-0.485)	(-0.357)	(-0.224)	(-0.363)	(-0.457)	(-0.357)
Legal Strength-i	7.642***	8.006***	8.033***	8.506***	10.640**	10.731**	11.633**	10.522**
	(3.654)	(2.834)	(2.732)	(2.884)	(2.181)	(2.020)	(2.274)	(2.187)
Legal Strength-k	5.715***	7.204**	6.906**	7.794**	10.781**	14.649***	15.832***	13.147**
	(2.834)	(2.523)	(2.370)	(2.591)	(2.131)	(2.732)	(2.837)	(2.465)

Regulatory Strength-i	-1.395	-2.931	-3.114*	-2.943	-3.825	-7.735**	-8.927**	-6.894*
	(-1.056)	(-1.613)	(-1.663)	(-1.595)	(-1.312)	(-2.039)	(-2.300)	(-1.913)
Regulatory Strength-k	-0.784	-3.132	-2.970	-3.031	-0.852	-4.596	-5.683*	-2.908
	(-0.583)	(-1.612)	(-1.521)	(-1.529)	(-0.329)	(-1.373)	(-1.662)	(-0.920)
Log of GDP-i	-0.118	-1.011	0.392	1.133	-18.114	-34.009	-36.359*	-26.483
	(-0.014)	(-0.113)	(0.044)	(0.126)	(-0.857)	(-1.594)	(-1.714)	(-1.290)
Log of GDP-k	-1.139	-3.012	-2.071	-0.677	-13.819	-17.953	-20.263	-16.792
	(-0.132)	(-0.321)	(-0.221)	(-0.071)	(-0.557)	(-0.693)	(-0.775)	(-0.675)
Log of GDP Per Capita-i	-1.313	-0.442	-1.936	-2.923	22.166	40.084*	43.141*	32.159
	(-0.144)	(-0.046)	(-0.200)	(-0.304)	(0.982)	(1.744)	(1.883)	(1.460)
Log of GDP Per Capita-k	-0.946	1.951	0.712	-0.854	16.555	21.893	25.550	20.194
	(-0.107)	(0.200)	(0.073)	(-0.088)	(0.635)	(0.795)	(0.918)	(0.764)
Constant	12.692	-5.078	8.181	18.960	-227.091**	-338.931***	-377.065***	-291.915***
	(0.246)	(-0.091)	(0.145)	(0.345)	(-2.295)	(-3.267)	(-3.621)	(-2.821)
Observations	385	303	303	303	378	326	326	326
R-squared	0.723	0.726	0.719	0.731	0.694	0.672	0.669	0.716
Survey Year i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey Year k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered errors	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The sample observations come from countries that have adopted IFRS between 2005-2015. The dependent variable is either *Accruals-based Comparability* or *Market-based Comparability*, which is measured for a pair of firm-years and then averaged over a pair of country-survey years. The values for *Cultural Difference* differ for each pair of country-survey years, and other control variables are also averaged over a country-survey year. I include country-*i*, country-*k*, survey year-*i*, and survey year-*k* fixed effects, and cluster standard errors by the pair of countries under comparison. More variable definitions are provided in Appendix A – Variable Definitions.

Table 8– Robustness test controlling for absolute differences of control variables

To the right: Cultural aspects that differ across countries	Dependent variable: Market-based Comparability				Dependent variable: Accruals-based Comparability			
	Trust	Materialism	Risk Aversion	All Aspects	Trust	Materialism	Risk Aversion	All Aspects
Differences in Trust	-0.950***			-0.750**	-4.276***			-3.443***
	(-3.387)			(-2.555)	(-3.734)			(-3.039)
Differences in Materialism		-0.108*		-0.102*		-0.945***		-1.040***
		(-1.969)		(-1.900)		(-2.798)		(-3.188)
Differences in Risk Aversion			-0.158*	-0.158*			-1.550**	-1.743***
			(-1.915)	(-1.923)			(-2.555)	(-2.965)
Log of Total Assets-i&k	0.032***	0.054***	0.054***	0.054***	-0.074**	-0.079**	-0.077**	-0.078**
	(2.620)	(4.320)	(4.328)	(4.308)	(-2.557)	(-2.597)	(-2.498)	(-2.538)
MB-i&k	0.060***	0.059***	0.059***	0.059***	-0.023**	-0.024**	-0.025**	-0.025**
	(10.273)	(8.821)	(8.831)	(8.841)	(-2.348)	(-2.243)	(-2.299)	(-2.350)
Leverage-i&k	-3.170***	-3.155***	-3.155***	-3.159***	-0.852***	-0.899***	-0.906***	-0.919***
	(-22.626)	(-20.688)	(-20.659)	(-20.747)	(-5.699)	(-5.971)	(-6.024)	(-6.044)
ROA-i&k	-4.297***	-4.204***	-4.202***	-4.202***	-7.992***	-7.904***	-7.879***	-7.861***
	(-17.048)	(-16.437)	(-16.452)	(-16.439)	(-12.604)	(-12.186)	(-12.198)	(-12.227)
Both Strong Enforcement-i&k	-0.538**	-0.502**	-0.511**	-0.560**	0.065	0.629	0.633	0.496
	(-2.213)	(-2.165)	(-2.257)	(-2.445)	(0.116)	(1.097)	(1.125)	(0.926)
Both Weak Enforcement-i&k	0.555**	0.505**	0.502**	0.552**	-1.378**	-1.807***	-1.847***	-1.538**
	(2.267)	(2.237)	(2.267)	(2.433)	(-2.218)	(-2.759)	(-3.000)	(-2.549)
Regulatory Strength-i&k	0.672***	0.484***	0.436***	0.545***	-0.710	-0.907	-1.226	-1.034
	(4.887)	(3.823)	(3.324)	(4.071)	(-0.685)	(-0.879)	(-1.203)	(-1.003)
Legal Strength-i&k	-0.481***	-0.544***	-0.512***	-0.454***	-1.182*	-2.125**	-1.942**	-1.380
	(-4.133)	(-4.798)	(-4.361)	(-4.070)	(-1.715)	(-2.408)	(-2.193)	(-1.595)
Log of GDP-i&k	-0.019	-0.018	-0.028	-0.023	0.087	0.133	0.033	0.094
	(-1.007)	(-0.976)	(-1.517)	(-1.166)	(0.671)	(1.066)	(0.265)	(0.829)
Log of GDP Per Capita-i&k	0.034	0.041*	0.040	0.046**	0.305*	0.391**	0.377**	0.392**
	(1.431)	(1.725)	(1.624)	(2.043)	(1.959)	(2.004)	(2.008)	(2.109)
Constant	-3.804***	-4.267***	-4.142***	-4.093***	-13.912***	-14.908***	-13.591***	-13.345***

	(-11.875)	(-14.254)	(-13.105)	(-13.417)	(-7.516)	(-6.519)	(-6.075)	(-6.164)
Observations	2,370,371	2,100,646	2,100,646	2,100,646	2,114,646	1,967,074	1,967,074	1,967,074
R-squared	0.151	0.158	0.158	0.158	0.326	0.326	0.327	0.330
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country i fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country k fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered errors	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair	By country-pair

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The sample observations come from countries that have adopted IFRS between 2005-2015. The dependent variables are one of the two measures of accounting comparability: *Market-based Comparability* or *Accruals-based Comparability*. The independent variables of interest are the three measures of differences in cultural aspects: *Differences in Trust, Differences in Materialism,* and *Differences in Risk Aversion*. Continuous control variables are the absolute differences in the variables between firm-*i* and -*k* or between the countries where firm-*i* and -*k* are headquartered in. For example, *ROA-i&k* = |*ROA-i - ROA-k* |. The dummy variables *Both Strong Enforcement* and *Both Weak Enforcement* equal one when the two countries being compared both have strong or weak enforcement of IFRS, respectively. I include country-*i* and -*k* fixed effects, year fixed effects, and cluster standard errors by the pair of countries under comparison. More variable definitions are provided in Appendix A – Variable Definitions.