National Culture, Corporate Governance Practices, and Firm Performance*

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Abstract

In this paper, we examine the universality of "good" corporate governance practices as exemplified by the Anglo-American governance paradigm. Using a new database from Governance Metrics International featuring highly granular measures of corporate governance practices across a large number of countries for the period 2006-2011, we first find that the national cultural dimension of individualism is positively associated with transparent disclosure and corporate behavior standards, and uncertainty avoidance is negatively associated with transparent disclosure and minority shareholder protection. We further find that within countries, there is a largely positive association between firm-level corporate governance practices and firm performance; however, across countries, the association is largely negative. We conclude that national culture matters in firms' adoption of "good" corporate governance practices, and that the effect of firm-level corporate governance practices on firm performance depends on whether firms are compared within a country or across countries.

Keywords: Anglo-American governance paradigm; corporate governance; firm performance; hierarchical linear model; individualism; national culture; relational governance paradigm; uncertainty avoidance
JEL Classification: G18; G31; G32

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Abstract

In this paper, we examine the universality of "good" corporate governance practices as exemplified by the Anglo-American governance paradigm. Using a new database from Governance Metrics International featuring highly granular measures of corporate governance practices across a large number of countries for the period 2006-2011, we first find that the national cultural dimension of individualism is positively associated with transparent disclosure and corporate behavior standards, and uncertainty avoidance is negatively associated with transparent disclosure and minority shareholder protection. We further find that within countries, there is a largely positive association between firm-level corporate governance practices and firm performance; however, across countries, the association is largely negative. We conclude that national culture matters in firms' adoption of "good" corporate governance practices, and that the effect of firm-level corporate governance practices on firm performance depends on whether firms are compared within a country or across countries.

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1. Introduction

Prior literature provides mixed evidence on whether good corporate governance leads to better firm performance (see, for example, La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2002; Klapper and Love, 2004; Durnev and Kim, 2005; Core, Guay, and Rusticus, 2006; Bhagat, Bolton, and Romano, 2008). Despite the inconclusive evidence, influential international organizations including the Organisation for Economic Co-operation and Development (OECD) and the World Bank, securities regulators, proxy advisory firms, and corporate governance rating firms have converged in defining "good" corporate governance practices, including transparent disclosure, equity-based pay, and board independence (OECD, 2004; World Bank, 2001; the U.S. Sarbanes-Oxley Act; the New York Stock Exchange listing rules; Daines, Gow, and Larcker, 2010). This *universalist* perspective implies that across all countries, firms that adopt these explicit, formal corporate governance practices should outperform those that do not. In this paper, we examine whether national culture influences the very definition of "good" corporate governance practices, and thus the optimal set of corporate governance practices could vary across countries.

Prior studies have identified two broad corporate governance paradigms across countries, the *Anglo-American governance paradigm* and the *relational governance paradigm* (e.g., Shleifer and Vishny, 1997). Both of them address the agency conflicts between firm outsiders and insiders, but differ in the relative importance of protecting outsiders' versus insiders' interests. The Anglo-American paradigm emphasizes protection of outside investors' interests through country-level legal protection and firm-level internal mechanisms such as board independence and disclosure, and external mechanisms such as the market for corporate control. On the other hand, the relational paradigm is more supportive of insiders' control rights, and relies on information sharing and monitoring among firm insiders such as large shareholders and major creditors.[1]

Notwithstanding the fact that both of these corporate governance paradigms are practiced around the world, the universalist perspective promotes a "one-size-fits-all" solution to agency problems, suggesting that a common set of corporate governance practices should be adopted by firms across

[1] The German and Japanese bank-based financial systems are good examples of this paradigm (La Porta et al., 1998; Becht and Röell, 1999; Aguilera and Jackson, 2003).

countries. Correspondingly, most if not all firm-level corporate governance ratings focus on corporate governance practices protecting outside investors, and thus measure the proximity to the Anglo-American paradigm rather than governance quality per se (Khanna, Kogan, and Palepu, 2006). However, these practices may not be suited to firms operating in countries where the relational paradigm dominates. For example, while disclosure facilitates the protection of outside investors, an emphasis in countries governed by the Anglo-American paradigm, it is less useful under the relational paradigm, which emphasizes information-sharing among firm insiders (i.e., large shareholders and major creditors).

In this paper, we develop hypotheses on the role of national culture in determining firm-level corporate governance practices and the implications of these practices for firm performance. In particular, we focus on Hofstede's (1980, 2001) widely-used cultural dimensions of individualism (vs. collectivism) and uncertainty avoidance. Individualist societies promote a universalist norm and emphasize equality among individuals, which should be associated with more emphasis on protecting outside investors. High uncertainty avoidance societies dislike ambiguity and unstructured situations, leading to a preference for debt over equity financing and a bank-based over stock market-based financial system. This is congruent with the relational paradigm that protect firm insiders than outsiders.

Using a new database from Governance Metrics International (GMI) featuring highly granular measures of corporate governance practices across a large number of countries for the period 2006-2011, we first construct corporate governance indices on transparent disclosure, minority shareholder protection, and corporate behavior standards that are largely congruent with the Anglo-American paradigm. Second, we assess the country- and firm-level determinants of these corporate governance practices. We focus on the extent to which corporate governance practices differ across countries, and whether these differences are predicted by a country's informal institutions, notably national culture (Hofstede, 1980, 2001), after accounting for the role of formal institutions. We find that Hofstede's individualism dimension is positively and significantly associated with transparent disclosure and corporate behavior standards, and his uncertainty avoidance dimension is negatively and significantly associated with transparent disclosure and minority shareholder protection.

Third, we evaluate the implications of our corporate governance indices for firm performance. We find that minority shareholder protection and corporate behavior standards measured at the firm level

are positively and significantly associated with firm performance. However, in many cases, corporate governance practices measured at the country level are negatively and significantly associated with the performance of an average firm in a given country, inconsistent with the universalist view. We conclude that national culture matters in firms' adoption of corporate governance practices, and that within countries, there is a largely positive association between firm-level corporate governance practices and firm performance; however, across countries, the association is largely negative.

Finally, we conduct additional analyses to test the robustness of our main findings. We address endogeneity concerns related to culture by employing an instrumental variables approach. The effects of culture on firm-level corporate governance practices largely remain. We include two additional cultural dimensions—Hofstede's (2001) power distance and masculinity—in the baseline models. We find that most of the effects of individualism and uncertainty avoidance remain, and that the two additional cultural dimensions are significantly associated with firm-level corporate governance practices. We examine the relations between Hofstede's cultural dimensions and the eight constituent corporate governance scores that make up our three corporate governance indices, as well as the relations between the eight scores and firm performance. The findings are largely consistent with our main results based on the three corporate governance indices.

Our paper makes the following important contributions to the literature. First, we highlight the role of national culture in explaining cross-country variation in firm-level corporate governance practices by constructing our own corporate governance indices measured in 4,457 firms across 50 countries.[2] Our study employs one of the largest datasets on firm-level corporate governance practices in an international setting. By providing evidence that culture influences firms' choice of governance practices, our study offers insights into the nature of the country fixed effects that Doidge, Karolyi, and Stulz (2007) and Aggarwal, Erel, Stulz, and Williamson (2009) find explain most of the variation in firm governance ratings. Second, through creating more granular measures of corporate governance practices, we provide a richer insight into the country- and firm-level determinants of different aspects of corporate governance practices. Third, we contribute to the debate on whether corporate governance matters for firm

[2] It is worth underscoring that all corporate governance rating agencies embrace the Anglo-American paradigm in constructing their check lists of different practices and thus in scoring firms around the world in terms of their compliance with "good" practices.

performance by showing that within countries, "good" (i.e., explicit and formal) firm-level corporate governance practices do predict better firm performance; however, across countries, the relation is largely negative.

Finally, our paper also contributes to the broad question of whether country-level investor protection laws and firm-level corporate governance practices are complements or substitutes (see, for example, Aggarwal et al., 2009). Different from prior work, we employ a dataset that has broader worldwide coverage (in terms of both the number of countries and the number of firms) and a hierarchical linear regression model that is more appropriate to examine cross-level (i.e., country- versus firm-level) interactions. This richer data and modeling framework allow us to uncover the complex relation between firm-level corporate governance practices and firm performance, and to highlight the role of culture in shaping this relation.

The remainder of the paper is structured as follows. We review the related literature and describe the construction of our corporate governance indices in Section 2. Section 3 develops our theoretical framework and derives our hypotheses. Section 4 describes the construction of our sample and provides descriptive statistics. Section 5 discusses the empirical methodology. Section 6 presents our main results. Section 7 considers alternative specifications and implements robustness checks. Section 8 concludes.

2. Literature review and measures of corporate governance

Related literature

Our paper is related to two strands of the international finance literature. The first strand examines country- and firm-level variation in corporate governance practices and their determinants. Country-level studies identify a number of factors leading to stronger legal protection of investors, including legal origin (La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 1998), religion (Stulz and Williamson, 2003), electoral system (Pagano and Volpin, 2005), and national culture (Licht, Goldschmidt, and Schwartz, 2005).[3] Using cross-country firm-level data, Doidge et al. (2007) find that

[3] However, Khanna, Kogan, and Palepu (2006) find that firms' actual corporate governance practices deviate from their countries' formal statutes regarding legal protection of investors and exhibit considerable variation in the cross-section.

country fixed effects can explain up to three-quarters of the variance in firm-level corporate governance practices. This raises the question of what drives cross-country differences in corporate governance practices. In this paper, we examine whether culture is an important driver of such differences after accounting for the role of formal institutions.

The second strand examines the effects of country- and firm-level variation in corporate governance practices on firm performance. Three papers in an international context find that firm-level corporate governance practices as measured by congruence with the Anglo-American paradigm are related to higher firm value (La Porta et al., 2002; Durnev and Kim, 2005; Aggarwal et al., 2009). However, three other papers find that the effect of firm-level corporate governance practices on firm performance is conditional on a country's financial and legal systems, and firm characteristics (Anderson and Gupta, 2009; Bebchuk and Hamdani, 2009; Black, de Carvalho, and Gorga, 2012).

So far, the existing literature largely takes a universalist perspective implying there is one model of good corporate governance practices around the world, and generally adopts the Anglo-American paradigm as the standard (see, for example, Licht, 2014 for a dissenting view). However, there is rising awareness that the very definition of "good" corporate governance practices may be influenced by national culture, and thus the optimal corporate governance practices could vary across countries—a cultural perspective. In particular, an alternative to the Anglo-American paradigm is the *relational governance paradigm* characterized by bank financing and monitoring, large blockholders, crossholdings, and weak markets for corporate control (Aguilera and Jackson, 2003; Yoshikawa and Rasheed, 2009). Kwok and Tadesse (2006) find that national culture plays a significant role in shaping the stock market-based (e.g., the U.S. and the U.K.) versus bank-based (e.g., continental Europe and Japan) financial systems around the world. Licht et al. (2005) demonstrate that culture is the foundation of the rule of law and other forms of country-level investor protection statutes.[4] The cultural perspective implies a long-term causal relation where cultural norms and values shape formal institutions and firm-level corporate governance practices over a period of decades and even centuries (Williamson, 2000; Licht, 2001). In this paper, our objectives are to assess whether culture shapes firm-level corporate governance practices, and

[4] Kwok and Tadesse (2006) and Licht et al. (2005) employ instrumental variables to support the causal role of culture.

to examine whether the association between firm-level corporate governance practices and firm performance varies across cultural settings.

Construction of firm-level corporate governance indices

In the first part of our investigation, we examine existing cross-country corporate governance measures and construct new and more comprehensive firm-level corporate governance indices. Black et al. (2012) point out that currently available cross-country corporate governance databases are limited in terms of the aspects of corporate governance measured, the breadth of country coverage, and the number of years of coverage. For example, the S&P ratings based on 98 disclosure items (e.g., Khanna, Palepu, and Srinivasan, 2004; Durnev and Kim, 2005) are available for 901 firms from 40 countries in 2002. The Credit Lyonnais Securities Asia (CLSA) ratings based on analyst responses to 57 questions (e.g., Durnev and Kim, 2005; Klapper and Love, 2004) are available for 495 firms from 25 Asian countries in 2000. The RiskMetrics (formerly ISS) governance ratings based on 55 disclosure items (e.g., Aggarwal et al., 2009) are available for 1,710 firms from 22 developed countries in 2003.

In this study, we employ firm-level corporate governance data compiled by GMI to construct new governance indices. GMI measures corporate governance practices for firms covered by the MSCI World Index and the MSCI EAFE Index over the period 2006-2011. We use 72 questions and answers on governance attributes, which GMI groups into eight categories: (1) board accountability, (2) financial disclosure and internal controls, (3) shareholder rights, (4) remuneration, (5) market for corporate control, (6) corporate behavior – employee relationship, (7) corporate behavior – environment, and (8) corporate behavior – reputation (see Appendix I for details). For each of these questions, GMI assesses whether a firm attains a minimum standard and records yes/no/not applicable.

The sample used to construct our own governance indices contains 22,650 firm-year observations for approximately 4,500 firms in 50 countries. The panel is unbalanced as the number of firms grows considerably over time (from 3,091 in 2006 to 4,276 in 2011). First, we code answers to 72 original questions into 61 well-defined governance attributes in the eight categories.[5] For example, under "board

[5] In total, there are seven cases in which a particular attribute is based on consolidating answers to multiple questions.

accountability (BA)," the attribute BA2 is created by consolidating the answers to three related questions. Specifically, BA2 takes a value of one if answer to question 1.10g "Do any of the board members serve on the boards of at least three other public companies?" is "No," takes a value of 0.5 if the answer to question 1.10g is "Yes" and the answer to question 1.10h "Do 25% to 49.9% of directors serve on the boards of at least three other public companies?" is "No," and takes a value of zero if the answer to question 1.10h is "Yes" or the answer to question 1.10i "Do 50% or more of directors serve on the boards of at least three other public companies?" is "Yes."

Second, we sum the values of the attributes in each category to obtain an unbalanced panel of eight raw governance summary scores. For example, the board accountability (BA) raw score is the sum of twenty attributes. The market for corporate control (MC) raw score is the sum of five attributes. Given that different summary scores contribute different amounts of variance to our composite governance indices—the output of the factor analysis that we describe below—we standardize each summary score by subtracting its panel data mean and dividing by its panel data standard deviation, so that each summary score in the panel contributes the same amount of variance to the composite governance indices.

Third, in preparation for our factor analysis, we collapse the unbalanced panel of eight standardized summary scores from step 2 into a cross-section by averaging over years for each firm.[6]

Finally, we implement a pooled cross-country factor analysis that yields three composite governance indices. The principal component factor analysis reduces a larger set of correlated variables (i.e., the eight summary scores) into a smaller set of largely uncorrelated composite variables (i.e., the three governance indices) that account for the most cross-firm variance in a parsimonious way. The three resulting factors or composite governance indices are defined by the following summary scores with the largest positive weights: (1) board accountability, financial disclosure and internal control, and remuneration, (2) market for corporate control and shareholder rights, and (3) corporate behavior – employee relationship, corporate behavior – environment, and corporate behavior – reputation. Given the underlying components of these three indices, we label them "transparent disclosure," "minority

[6] Using a cross-section of time series averages adds stability to the factor analysis. It is worth noting that conducting the factor analysis separately by year also produces the same set of three factors.

shareholder protection," and "corporate behavior standards," respectively.[7] In our subsequent empirical analysis, the three composite firm-level corporate governance indices are constructed as averages of the underlying standardized summary scores.[8]

Table 1, Panel A presents correlations between our three country-level corporate governance indices and selected geographic and demographic variables including religion, arable land, population density, continent, colonial history, and fractionalization (see variable definitions in Appendix III). Consistent with the observation that most corporate governance indices represent practices from the Anglo-American paradigm, transparent disclosure is higher in Protestant countries, higher in North America (lower in South America), higher in countries with a British colonial history (lower in countries with a Spanish or Portuguese colonial history), and higher in countries with diverse religious beliefs. Similarly, minority shareholder protection is higher in Protestant countries, lower in South America, lower in countries with a Dutch, Spanish, or Portuguese colonial history, and lower in countries with diverse ethnic backgrounds. Corporate behavior standards are higher in Protestant countries, higher in Europe (lower in Asia), lower in countries with diverse ethnic or linguistic backgrounds, and higher in countries with diverse religious beliefs. Overall, two of our corporate governance indices (transparent disclosure and minority shareholder protection) are congruent with the Anglo-American paradigm and represent corporate governance solutions to the classical agency problems inherent in modern corporations.

In summary, different from prior studies, our eight summary governance scores and the resulting three composite governance indices are constructed from a large multi-year cross-country cross-firm sample. Further, unlike a single overall measure of corporate governance practices, our three composite governance indices are more granular and capture different aspects of corporate governance practices.

3. Theoretical framework and hypotheses

[7] Appendix II reports the weight for each component based on the principal component factor analysis and diagnostics. Both correlated and uncorrelated rotations produce the same set of three factors.
[8] Our main findings remain unchanged if we use the factor loading weights to create the composite governance indices. Results are available upon request.

Cultural determinants of firm-level corporate governance practices

In the second part of our investigation, we examine the cultural determinants of firm-level corporate governance practices. According to Shleifer and Vishny (1997, p. 737), corporate governance "deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment." Under this model, the key challenges to investors receiving returns are agency problems derived from the separation of ownership and control, and information asymmetry between corporate insiders and outside capital providers. These challenges can be addressed both at the country level with investor protection laws and regulations and at the firm level with internal and external corporate governance mechanisms. However, different cultural values (e.g., individualism and uncertainty avoidance) and different corporate governance paradigms (i.e., Anglo-American versus relational) view protection of outsiders' versus insiders' interests differently and therefore rely on different corporate governance mechanisms (Aguilera and Jackson, 2003; Licht, 2014).

The cultural perspective holds that national culture influences capital providers and their representatives (such as corporate boards) prefer some solutions to agency problems and information asymmetry over others (Kwok and Tadesse, 2006; Shao, Kwok, and Guedhami, 2010; Nash and Patel, 2014). Institutional economists view cultural values as "unwritten codes of conduct" (North, 1990, p. 4) that define culturally appropriate decisions and behaviors and hence determine how specific formal institutions develop and whether formal institutions of one society can be adopted by another (Greif, 1994; Williamson, 2000, Figure 1). Recently, researchers have raised questions about whether economic globalization leads to a convergence of corporate governance (Branson, 2001; Khanna et al., 2006; Yoshikawa and Rasheed, 2009; Nash and Patel, 2014), and have pointed out that culture continues to play an important role. For example, the development and implementation of formal corporate governance standards (i.e., written codes of conduct endorsed by governments and business organizations) is influenced by a country's culture (Haxhi and van Ees, 2010), and the corporate governance practices prevailing in the U.S. are often adapted to match local cultural values (Buck and Shahrim, 2005; Licht et al., 2005).

How might cultural values shape different societies' solution to the problems of agency conflicts and information asymmetry? To answer this question, we rely on the widely-accepted cultural framework

developed by Hofstede (1980) who identified four cultural dimensions: individualism (versus collectivism), uncertainty avoidance, power distance, and masculinity. Of the four dimensions, our focus is on individualism and uncertainty avoidance, because both influence the means through which a society protects firm outsiders' versus insiders' rights.

Individualism emphasizes equality and independence among individuals, whereas collectivism emphasizes the group's interests and harmony. The norm in individualist countries is universalist (what is good and right applies to everyone), while in collectivist countries it is particularist (obligations of relationships take precedence) (Trompenaars, 1993; Hofstede, 2001).[9] Accordingly, in a corporate setting, firms in individualist countries should give equal priority to protecting inside and outside investors, for example, by having more transparency to the public and enhancing minority shareholders' voting rights. In contrast, firms in collectivist countries should give priority to maintaining the interests of inside investors (i.e., large shareholders and major creditors). Furthermore, because individualism emphasizes equality, information asymmetry is undesirable, and hence firms in individualist countries should focus on transparency.

The practices evaluated by current corporate governance ratings, such as disclosure, board independence, equity-based compensation, minority shareholder rights, and the market for corporate control, are consistent with the need to reduce agency conflicts faced by outside investors and to reduce information asymmetry, and thus are expected to prevail in individualist countries.[10]

In contrast, as a result of their focus on group harmony and in-group favoritism, firms in collectivist countries should rely more on interlocking directorships (for example, between the firm and large creditors) and within-group information-sharing to protect insiders' interests, and are expected to have lower corporate governance ratings on transparent disclosure and minority shareholder protection.

[9] Consistent with this view, Zheng, El Ghoul, Guedhami, and Kwok (2013) find that bank officers in collectivist countries are more likely to favor relationships over rules than their counterparts in individualist countries, which translates into a higher level of corruption in bank lending.

[10] There is a second link between individualism and transparency/minority shareholder protection. Recent research shows that individualism is positively associated with corporate risk taking (Li, Griffin, Yue, and Zhao, 2013; Shao, Kwok, and Zhang, 2013). A high level of corporate risk taking is associated with more information asymmetry to outside investors and thus, in high individualist countries, there is a greater need for transparency and protection of outside investors' rights.

With respect to corporate behavior standards, individualist values respect the interests and rights of all stakeholders while collectivist values favor group members over outsiders. Thus, firms in individualist countries are likely to have higher ratings on the protection of employees and the environment.

Based on the above discussion, our first hypothesis is as follows:

H1: Individualism is positively associated with transparent disclosure, minority shareholder protection, and corporate behavior standards.

Uncertainty avoidance captures a society's intolerance for ambiguity and unstructured situations. Cultures with high uncertainty avoidance attempt to mitigate stress and anxiety caused by uncertainty through seeking out conditions of safety and security (Hofstede, 2001),[11] leading to a preference for debt over equity financing (Licht, 2001) and a bank-based over stock market-based financial system (Kwok and Tadesse, 2006). Debt financing is relational and conflicts of interest between lenders and borrowers are more likely to be resolved through informal means (Zheng et al., 2013). In addition, conflicts of interest between managers and shareholders should be less severe in high uncertainty-avoidance countries because of their reliance on a bank-based financial system that is characterized by large shareholders and major creditors, reducing the need for minority shareholder protection. The information asymmetry problem is also less severe because of effective information sharing among large shareholders and major creditors, reducing the need for transparent disclosure. In contrast, cultures with low uncertainty avoidance embrace risk and favor equity financing. Equity financing is more transaction- than relationship-based and involves many small, uninformed investors, and hence calls for a higher level of transparency and stronger protection of minority shareholders.

The link between uncertainty avoidance and corporate behavior standards is less clear. On the one hand, high uncertainty avoidance emphasizes the use of rules to reduce ambiguity, and hence should be associated with a focus on workplace safety, environment protection, and misconduct monitoring. On the

[11] For example, performance-based compensation is not as widely used in high uncertainty avoidant countries due to a preference for clarity and security. Schuler and Rogovsky (1998) find that multinational firms operating in countries with high levels of uncertainty avoidance offer more certainty in their compensation schemes through seniority- or skill-based compensation, while performance-based compensation practices are a better fit in high individualist countries.

other hand, high uncertainty avoidance is associated with bank-based financing and informed large shareholders, reducing the need for practices that enhance a firm's public image and reputation.

Our second hypothesis is thus as follows:

H2: Uncertainty avoidance is negatively associated with transparent disclosure and minority shareholder protection.

Performance implications of firm-level corporate governance practices

In the third part of our investigation, we examine the performance implications of firm-level corporate governance practices. The universalist perspective on corporate governance practices—the one-size-fits-all model—implies that adherence to the Anglo-American paradigm should be positively associated with firm performance within a country and across all countries. This global advantage viewpoint implies that both firms and countries benefit from good corporate governance practices, and that these benefits exceed the costs of implementation. We propose an alternative viewpoint, focusing on local advantage, that firms, but not countries, benefit from good corporate governance practices. According to this local advantage viewpoint, firms are assessed within a country by their investors, which leads to high valuations for firms following comparatively "good" corporate governance practices. Thus, within a country, the costs of "good" corporate governance practices are compensated by the higher valuation, leading to a positive within-country relation between corporate governance practices and firm value. However, countries that favor "good" corporate governance practices through either regulation or cultural preferences might impose costs on firms in those countries that overwhelm the benefits of such practices. Thus, depending on the cost-benefit tradeoff, country-level corporate governance practices may be unrelated to or, due to their costs, negatively related to average country-level firm values.

The above arguments lead to our third hypothesis:

H3: There is a positive within-country association between firm-level corporate governance practices and firm performance; there is a zero or negative association between country-level corporate governance practices and average country-level firm performance.

According to the cultural perspective, measures of corporate governance are more relevant to assessing firm quality in some countries than in others. Individualist values are congruent with the Anglo-

American paradigm which is characterized by explicit, formal contracts rather than informal relationships. Practices associated with this paradigm align incentives between managers and shareholders and reduce information asymmetry, leading managers to make value-maximizing decisions that result in better performance. This implies a positive relation between "good" corporate governance practices and firm performance in individualist cultures. Collectivist values, on the other hand, focus on informal, relational ties, which should weaken the association between formal governance practices and firm performance. Similar arguments can be made for uncertainty avoidance. Motivated by a desire for certainty and control, firms in countries high on uncertainty avoidance favor alternative corporate governance practices based on information-sharing among and monitoring by insiders, resulting in a weaker relation between "good" governance practices and firm performance.

The cultural perspective thus leads to our fourth and final hypothesis:

H4: The positive within-country association between firm-level corporate governance and firm performance is stronger in high individualist countries and is weaker in high uncertainty avoidant countries.

4. Sample formation and variable construction

Sample formation

Our main data sources are GMI for firm-level governance attributes over the period 2006-2011, and Thomson Reuter's Worldscope for firm-level financial data over the period 2005-2012. The GMI sample covers 4,457 unique firms with 22,650 firm-year observations from 50 countries. We construct eight governance summary scores based on this sample, so the resulting three composite governance indices reflect the broadest possible set of countries, firms, and years. After dropping observations with missing data for country- and firm-level control variables and employing a lead-lag regression specification, we obtain a sample that comprises 16,593 firm-year observations for 3,439 unique firms from 38 countries.

Measures of national culture

The two measures of national culture that we use in our analysis are Hofstede's (1980, 2001) dimensions of individualism and uncertainty avoidance (see Appendix III for a detailed discussion). It is

worth noting that the specific items used to construct these measures are distinct from the context of corporate governance that we study here. For example, the most heavily weighted item in constructing the uncertainty avoidance index is "Competition between employees usually does more harm than good." This item, like others in the index, represents a guideline for appropriate behavior and does not directly translate into corporate governance practices. Nonetheless, both of these cultural measures have a natural interpretation in terms of addressing agency problems and information asymmetry in a corporate context, as discussed in Section 3.[12]

Table 1, Panel B presents correlations between Hofstede's four cultural dimensions and selected geographic and demographic variables including religion, arable land, population density, continent, colonial history, and fractionalization. Consistent with Hofstede's framework, we show that individualism is higher in Protestant countries, higher in Europe and North America (lower in Asia and South America), and higher in countries with a British colonial history; uncertainty avoidance is higher in Catholic and Orthodox countries (lower in Protestant countries), higher in South America (lower in Asia), and lower in countries with a British colonial history.

Measures of investor protection and economic/institutional development

To characterize the level of investor protection in each country, we use four measures (see Appendix III for detailed variable definitions and data sources). First, we use Spamann's (2010) revised anti-director rights index, which measures how strongly the legal system favors minority shareholders against managers or dominant shareholders.[13] Second, we use La Porta et al.'s (1998) rule of law, an

[12] We note that Hofstede's cultural dimensions were derived from a sample of IBM employees in the 1970s, well before the beginning of our sample period and thus reducing endogeneity concerns. Williamson (2000) and Licht et al. (2005) further point out that cultural values change very slowly, perhaps on the order of centuries. In addition, cultural values, as a fundamental institution (Williamson, 2000), produce culture-compatible institutions that in turn reinforce the stability of culture. Changes in cultural patterns come mainly from outside (Hofstede, 2001), through natural forces (e.g., changes of climate and spread of diseases), or human forces (e.g., trade, conquest, and technological breakthrough). Nonetheless, any changes in cultural values that have occurred over the past 40 years would weaken our conjectured linkages between the measures of national culture and corporate governance practices. Similarly, to the extent that IBM employees do not share the same cultural values as investors, this would also weaken the conjectured linkages between the measures of national culture and corporate governance practices. Finding robust effects of national culture on corporate governance would thus reinforce the belief that cultural values are enduring norms that are widely shared within a nation.

[13] All of our main findings remain qualitatively unaffected when we use Djankov, La Porta, Lopez-de-Silanes, and Shleifer's (2008) revised anti-director rights index.

indicator of the effectiveness of regulatory enforcement. Third, we use La Porta et al.'s (1998) legal origin, which identifies the origin of the company law or commercial code in a country (Reynolds and Flores, 1989) and classifies countries into legal families. Common law countries have been shown to have the strongest protection of outside investors—both shareholders and creditors, whereas French civil law countries have the weakest protection; German civil law and Scandinavian countries fall in between (La Porta et al., 1998). Common law is an indicator variable that takes a value of one for Common law, and zero otherwise.

Finally, we use two indicators of a country's economic and institutional development: annual GDP per capita from the World Bank, and Demirguc-Kunt and Levine's (2001) financial structure, an index of stock market development based on measures of the size, activity, and efficiency of a country's stock market relative to its credit market.[14]

Measures of firm performance and firm-level characteristics

To measure firm performance, we employ two measures. Tobin's Q is the ratio of the sum of the market value of equity and the book value of debt to book assets. ROA is return to assets, computed as operating income before depreciation scaled by total assets.

Turning to firm-level characteristics, firm size, in terms of total assets, is measured as the logarithm of millions of U.S. dollars (in 2011 dollars). Sales growth is the annual growth of net sales (net sales_t / net sales_{t-1}) averaged over the past three years. Leverage is the ratio of total liabilities to total assets. Cash holdings is the ratio of liquid assets to total assets. To capture firms' financing needs, we use a measure of dependence on external finance (Rajan and Zingales, 1998) defined as capital expenditures minus cash flows from operations divided by capital expenditures. Tangibility is the amount of fixed assets divided by total assets. Closely-held shares is defined by the data provider, Worldscope, as shares held by corporate insiders and blockholders with more than 5% ownership. ADR (American Depository Receipt) is an indicator variable that takes a value of one if the firm is listed on a major U.S. exchange

[14] All of our main findings remain qualitatively unaffected when we include Djankov, McLiesh, and Shleifer's (2007) creditor rights index as an additional control.

through ADRs, and zero otherwise. All firm-level continuous variables are winsorized at the 1st and 99th percentiles to reduce the impact of outliers.

5. Empirical methodology

Multilevel data and hierarchical linear models

Our data structure is multilevel. At the country level, we have firms from 38 different countries. At the firm level, we have over 3,000 firms for up to six years. In our data, the set of firm-year observations nested within countries form the base-level unit of analysis, while the set of country-year observations serve as the higher-level unit of analysis. To explore our data, we employ a hierarchical linear model (HLM, see Raudenbush and Bryk, 2002; Goldstein, 2003, for an introduction).

There are three distinct benefits from using an HLM in our setting (Li, Griffin, Yue, and Zhao, 2011, 2013). First, the HLM framework using a country mean-centered approach to firm-level variables cleanly separates the variance in firm-level outcomes into what is determined by the country- versus firm-level explanatory variables.

Second, the HLM framework corrects for the distortion introduced by varying sample sizes across countries. Unlike the OLS regression where each firm-level observation receives equal weight, the HLM regression simultaneously models regressions at both the country-level and the firm-level, with the country-level regression weighted by the precision of the firm-level data.

Third and finally, the HLM framework accurately incorporates cross-level interactions between the country- and firm-level variables, capturing the cross-country heterogeneity in within-country firm-level associations.

Mean-centering the data

We process our panel data to help decompose the country-, year-, and firm-level variations in corporate governance practices and firm performance. For each country-level independent variable, we center by its grand mean (averaged across countries and years wherever applicable) and then by its annual

mean (averaged across countries within the same year), so that every transformed variable has a mean of zero. We add the suffix "*_ctry*" to each of these variables.

For each firm-level independent variable, in a first step we center by its grand mean (averaged across countries, firms, and years) and then by its annual mean (averaged across countries and firms within the same year), so that every transformed variable has a mean of zero. In a second step we create country-year-level mean values (averaged across firms within a country in each year) from the grand-mean- and annual-mean-centered firm-level variables from step 1 and add the suffix "*_ctry_yr_mean*" to each of these variables. In a final step we create within-country firm-year-level residuals by taking the grand-mean- and annual-mean-centered firm-level variables from step 1 and subtracting the corresponding country-year-level means from step 2. We refer to these firm-year-level deviations separately from their corresponding country-year-level means by adding the suffix "*_firm_yr_dev*." In a nutshell, this sequential centering process ensures that the resulting data have zero means within a country-year, within a year, and across the entire panel.[15]

By centering the firm-year-level variables within a country-year and adding the country-year-level means to the set of predictors, we completely separate the covariances at two levels: between countries and between firm-years (Raudenbush and Bryk, 2002). Furthermore, this decomposition allows us to explore the potentially differential effects of firm characteristics such as the ADR listing status at both the (individual) firm level and the (average) country level. Finally, using mean-centered independent variables makes estimation of the cross-level interactions more efficient and interpretation of the intercept clear: the expected value of the dependent variable when all independent variables are at their means (Aiken and West, 1991).

Model specifications

[15] Our model specifications ultimately contain some variables that have constant country-level values (such as the measures of cultural dimensions and the investor protection variables), one variable that has country-year-level values (GDP per capita), and other variables that have country-year-level and firm-year-level values (such as firm size and leverage), where the country-level values are all grand-mean- and annual-mean-centered and the firm-level values are all country-year-mean-centered.

In the second part of our investigation, we examine the relation between Hofstede's (1980, 2001) cultural dimensions and firm-level corporate governance practices. We regress firm-year-level observations of corporate governance on one-year-lagged variables that capture firm characteristics, national culture, and country-level investor protection and economic/institutional development. Our HLM specification is as follows:[16]

$$\begin{aligned} &Corporate\ governance\ index_{i,j,t} = f(Firm-level\ control\_firm\_yr\_dev_{i,j,t-1}, \\ &Firm-level\ control\_ctry\_yr\_mean_{j,t-1}, Individualism\_ctry_j, Uncertainty\ avoidance\_ctry_j, \\ &Country-level\ control\_ctry_j, Industry\ \&\ Year\ fixed\ effects) + e_{i,j,t-1}, \end{aligned} \tag{1}$$

where for firm *i* from country *j* in year *t*, *Corporate governance index* can be one of the three composite indices as defined earlier. We include in Equation (1) industry fixed effects (based on two-digit standard industry classification (SIC) codes) to control for industry-level differences in governance practices, and year fixed effects to control for overall temporal variation. We estimate this model using an iterative maximum likelihood fitting procedure available in the MLwiN program.

In the third part of our investigation, we examine the relation between firm-level corporate governance practices and firm performance. We regress firm-year-level observations of firm performance on one-year-lagged variables that capture firm characteristics including governance practices, national culture, country-level investor protection and economic/institutional development, and industry and year fixed effects. Our HLM specification is as follows:[17]

$$\begin{aligned} &Firm\ performance_{i,j,t} = f(Firm-level\ CG\_firm\_yr\_dev_{i,j,t-1}, \\ &Firm-level\ CG\_ctry\_yr\_mean_{j,t-1}, Firm-level\ control\_firm\_yr\_dev_{i,j,t-1}, \\ &Firm-level\ control\_ctry\_yr\_mean_{j,t-1}, Individualism\_ctry_j, Uncertainty\ Avoidance\_ctry_j, \\ &Country-level\ control\_ctry_j, Industry\ \&\ Year\ fixed\ effects) + e_{i,j,t-1}, \end{aligned} \tag{2}$$

where for firm *i* from country *j* in year *t*, *Firm performance* can be one of the two performance measures—Tobin's Q and ROA. To capture the conditioning effects of individualism, uncertainty avoidance, and financial structure on the relation between corporate governance practices and firm performance, we add nine interactions to Equation (2). In particular, we interact each of the three

[16] We use a random intercept and fixed slopes model.
[17] We add cross-level interactions, allowing the country slopes to vary in combination with hypothesized conditioning variables.

corporate governance indices measured as firm-year-level deviations with the three country-level variables.

6. Main results

Descriptive statistics

Table 2, Panel A summarizes our sample coverage across countries and over time. The number of firms included by country varies from Colombia, Panama, and Peru on the low end to the U.K., Japan, and the U.S. on the high end. The GMI coverage is increasing over time. Figure 1 further shows that among our 38 sample countries, the three with the highest score on individualism are: the U.S. (9.1), Australia (9.0), and the U.K. (8.9), while the three with the lowest score on individualism are Panama (1.1), Columbia (1.3), and Indonesia (1.4). The three countries with the highest score on uncertainty avoidance are Greece (11.2), Portugal (10.4), and Belgium (9.4), while the countries with the lowest score on uncertainty avoidance are Singapore (0.8), Denmark (2.3), Hong Kong (2.9), and Sweden (2.9).

Table 2, Panel B provides summary statistics for both the three corporate governance indices at the country-mean level and all country-level variables. The three countries with the highest score on transparent disclosure are Ireland (0.61), the U.K. (0.60), and the U.S. (0.48), while the three with the lowest score on transparent disclosure are Colombia (-1.75), Japan (-1.48), and Chile (-1.23). The three countries with the highest score on minority shareholder protection are Canada (0.80), Norway (0.78), and Finland (0.78), while the three with the lowest score on minority shareholder protection are Colombia (-0.60), France (-0.50), and Malaysia (-0.47). The three countries with the highest score on corporate behavior standards are South Africa (0.59), Austria (0.57), and Japan (0.56), while the three with the lowest score on corporate behavior standards are the Philippines (-0.72), Hong Kong (-0.67), and Malaysia (-0.59). Panel C provides the summary statistics for firm-level variables.

Table 2, Panel D presents Pearson correlations among the firm-level variables measured as firm-year-level deviations (*_firm_yr_dev*) using 2011 data. We find that the three governance indices are all positively and significantly correlated. Between the three governance indices and two firm performance measures, we find that there are three negative and significant correlations and one positive and

significant correlation. However, simple correlations do not control for other confounding firm and country-level variables that may mask the true relation between governance and performance.

Table 2, Panel E presents Pearson correlations between the firm-level variables measured as country-level means (*_ctry_yr_mean*) and country-level variables (*_ctry*). We find that individualism is positively and significantly associated with transparent disclosure and corporate behavior standards, and uncertainty avoidance is negatively and significantly associated with transparent disclosure. We also find that uncertainty avoidance is negatively and significantly associated with Tobin's Q, and individualism is negatively and significantly associated with ROA.

In the next section, we employ HLM to formally test our hypotheses.

Relation between national culture and firm-level corporate governance practices

To examine the relation between national culture and firm-level corporate governance practices, the second part of our investigation focuses on testing hypotheses H1 and H2. Table 3 presents the estimation results of Equation (1).

When transparent disclosure is the dependent variable, we find that all firm characteristics measured at the firm level and the country level are significantly associated with this corporate governance practice. More specifically, using firm-level deviations, we find that firm size, leverage, and ADR are positively and significantly associated with transparent disclosure, while cash holdings, dependence on external finance, and closely-held shares are negatively and significantly associated with transparent disclosure. Using the country-level means, we find that the effects are sometimes consistent with, and are other times inconsistent with, the effects of the firm-level deviations. For example, large firms and countries with large firms are more likely to adopt transparent disclosure, because these firms are more likely to be under close scrutiny and these firms are also more likely to have more resources available to comply with disclosure requirements. In contrast, although firms cross-listed via ADR are more likely to adopt transparent disclosure, countries with many cross-listed firms are less likely to adopt transparent disclosure. On the one hand, ADR firms have to meet the host countries' higher standards of disclosure. On the other hand, the very reason for ADR firms to seek cross-listings on major exchanges is that their home countries tend to have lower standards of governance.

Importantly, we find that individualism is positively and significantly associated with transparent disclosure and uncertainty avoidance is negatively and significantly associated with transparent disclosure, consistent with hypotheses H1 and H2. Further, we find that the rule of law is negatively and significantly associated with transparent disclosure, while Common law and GDP per capita are positively and significantly associated with transparent disclosure. Thus, the rule of law serves as a substitute to transparent disclosure, while Common law, with its emphasis on enforcement, serves as a complement to transparent disclosure. Finally, countries with greater economic development (as captured by higher GDP per capita) are associated with more transparent disclosure, consistent with these countries having the resources to implement transparent disclosure.

The economic significance of our measures of national culture on transparent disclosure is noteworthy. Assuming a causal relation, a one standard deviation increase in individualism increases the transparent disclosure index by 0.311 standard deviations, and a one standard deviation increase in uncertainty avoidance decreases the transparent disclosure index by 0.298 standard deviations. By contrast, a one standard deviation increase in the rule of law (ln(GDP per capita)) decreases (increases) the transparent disclosure index by 0.332 (0.444) standard deviations.

When minority shareholder protection is the dependent variable, we find that all firm characteristics measured as firm-level deviations (with the exception of ADR) are significantly associated with this governance practice. Using firm-level deviations, we find that firm size, cash holdings, and closely-held shares are positively and significantly associated with minority shareholder protection, while dependence on external finance is negatively and significantly associated with minority shareholder protection. Cash holdings measured as country-level means is negatively and significantly, while dependence on external finance and closely-held shares measured as country-level means are positively and significantly associated with minority shareholder protection. The effects of the country-level means are sometimes consistent with, and are other times inconsistent with, the effects of the firm-level deviations.

Importantly, we find that individualism is not significantly associated with minority shareholder protection, inconsistent with hypothesis H1, while uncertainty avoidance is negatively and significantly associated with minority shareholder protection, consistent with hypothesis H2. Further, we find that

GDP per capita is positively and significantly associated with minority shareholder protection, while financial structure is negatively and significantly associated with minority shareholder protection, suggesting a substitute effect.[18]

The economic significance of uncertainty avoidance on minority shareholder protection is noteworthy. Assuming a causal relation, a one standard deviation increase in uncertainty avoidance reduces the minority shareholder protection index by 0. 332 standard deviations.

When corporate behavior standards is the dependent variable, we find that most firm characteristics measured as firm-level deviations and country-level means are significantly associated with this governance practice. Using firm-level deviations, we find that firm size, leverage, and ADR are positively and significantly associated with corporate behavior standards, while dependence on external finance and closely-held shares are negatively and significantly associated with corporate behavior standards. In three cases, the country-level means have effects that are consistent with those of the firm-level deviations.

Importantly, we find that individualism is positively and significantly associated with corporate behavior standards, consistent with hypothesis H1. Further, we find that none of other country-level independent variables (with the exception of anti-director rights) is significantly associated with corporate behavior standards. The economic significance of our cultural dimension variable on corporate behavior standards is noteworthy. Assuming a causal relation, a one standard deviation increase in individualism increases the corporate behavior standards index by 0.237 standard deviations.

Overall, the two cultural dimensions have consistent effects on the three corporate governance indices, largely supporting hypotheses H1 and H2. There is a positive and significant association between individualism and firm-level transparent disclosure and corporate behavior standards and there is a negative and significant association between uncertainty avoidance and firm-level transparent disclosure and minority shareholder protection. We now turn to examine the value implications of adopting those governance practices.

[18] A good example of this substitution effect is the U.S. which has one of the best developed stock markets in the world while the average score for minority shareholder protection for the U.S. firms in our sample is a relative low −0.38.

Relation between firm-level corporate governance practices and firm performance

To examine the relation between firm-level corporate governance practices and firm performance, the third part of our investigation focuses on testing hypotheses H3 and H4. Table 4 presents the estimation results of Equation (2).

We find that all three corporate governance indices measured either at the firm or country level are significantly associated with firm performance. We first find that minority shareholder protection at the firm level is positively and significantly associated with both Tobin's Q and ROA. Minority shareholder protection at the country level is also positively and significantly associated with Tobin's Q. More minority shareholder protection attracts more equity capital at both the firm and the country levels, leading to higher valuation. The evidence on the role of minority shareholder protection for Tobin's Q is consistent with the global advantage viewpoint.

We further find that corporate behavior standards at the firm level is positively and significantly associated with both Tobin's Q and ROA. In contrast, corporate behavior standards at the country level is negatively and significantly associated with both Tobin's Q and ROA. At the firm level, an explicit corporate behavior standards signals clear corporate strategies, which are appreciated by equity investors, leading to higher capital inflow and higher valuation. On the other hand, at the country level, an explicit corporate behavior standards may indicate high levels of government regulation and oversight, which constrain individual firms' operations, resulting in lower firm valuation. The evidence on the role of corporate behavior standards for Tobin's Q and ROA is consistent with the local advantage viewpoint. Finally, we find that transparent disclosure at the country level is negatively and significantly associated with ROA.

Turning to the country-level variables, we find that one cultural dimension—uncertainty avoidance—is negatively and significantly associated with both Tobin's Q and ROA. In addition, Common law and GDP per capita are negatively and significantly associated with both Tobin's Q and ROA.

When examining the cross-level interactions between our three firm-level corporate governance indices and the two measures of national culture, we find mixed support for our cultural hypothesis H4. In particular, we find that the interaction between corporate behavior standards and individualism is negative

and significant, which reduces the positive effect of corporate behavior standards on Tobin's Q, opposite to hypothesis H4. We find that the interaction between transparent disclosure and uncertainty avoidance is positive and significant when the dependent variable is ROA. Given that there is no main effect of firm-level transparent disclosure on firm performance, this result does not speak to hypothesis H4. We further find that the interaction between minority shareholder protection and uncertainty avoidance is positive and significant when the dependent variable is Tobin's Q, which runs counter to hypothesis H4. However, the interaction between corporate behavior standards and uncertainty avoidance is negative and significant when the dependent variable is either Tobin's Q or ROA, consistent with hypothesis H4.

When examining the cross-level interactions between our three firm-level corporate governance indices and financial structure, we find that the interactions between minority shareholder protection and financial structure and between corporate behavior standards and financial structure are positive and significant when the dependent variable is Tobin's Q, which increases the positive effect of corporate governance practices on Tobin's Q. We further find that the interactions between the three corporate governance indices and financial structure are positive and significant when the dependent variable is ROA. Overall, our evidence supports the view that country-level financial structure and firm-level corporate governance practices serve as complements not substitutes.[19]

7. Alternative Specifications and Robustness Checks

Using the Instrumental Variables Approach

Naturally, there are alternatives to a simple causal link between the set of country- and firm-level explanatory variables that we use and firm-level corporate governance practices. For example, it is easy to see that ADR and corporate governance practices may have a bi-directional relation: ADR listings may promote good corporate governance practices, and at the same time good corporate governance practices may increase the chance that a firm has an ADR listing. Similarly, GDP per capita might also have a bi-directional story: Higher incomes may encourage the adoption of good corporate governance practices, while at the same time country-level good corporate governance practices may lead to a stronger

[19] When the cross-level interactions between country-level cultural dimensions and financial structure and firm-level corporate governance indices are excluded, the remaining coefficients are unaffected.

economy. Formal and informal institutions such as the rule of law and culture change sufficiently slowly that they are less plausibly caused by corporate governance practices over the time horizon that we use here. Similarly, some of the cultural dimensions that we use to predict corporate governance practices in the 2000s were measured in the 1970s. Our variables therefore differ in their susceptibility to reverse causation or endogeneity.

Nevertheless, to address the endogeneity concern about country-level corporate governance practices and culture, we employ the instrumental variables approach. Following Kwok and Tadesse (2006) and Siegel, Licht, and Schwartz (2011), we use the following set of instrumental variables to isolate the exogenous components of our measures of culture: religion, demography, and geography. These factors are identified as potential determinants of culture based on prior theory (Hofstede, 2001). For religion, we use data on countries' dominant religion circa 1900 from the World Christian Encyclopedia (Barrett, Kurian, and Johnson, 2001)—Roman Catholic, Protestant, Orthodox, Muslim, and Hindu.[20] We obtain information on arable land and population of each country as of 1961 from the World Bank. We use the continent of a country as a proxy for geography.

Table 5 presents the results from the instrumental variables approach. Panel A shows that the religion and geography variables are significantly associated with the two cultural dimensions. Panel B shows that the components of the cultural measures that are predetermined by the more enduring differences in religion and geography still have similar statistically significant effects on firm-level corporate governance practices as the uninstrumented results in Table 3.

In summary, the substantial lag between the measurement of national cultural dimensions and the measurement of firm-level corporate governance practices together with the instrumental variables approach help rule out alternative causal interpretations of our results.

Employing the Full Set of Hofstede's Measures

As a robustness check, we add Hofstede's two other cultural dimensions—power distance and masculinity—to our specifications in Equations (1) and (2). Power distance measures the acceptance of hierarchy or power differential within a society. We expect that high power distance societies are less

[20] We thank Jordan Siegel for sharing his data on religion.

likely to protect minority shareholders and less likely to justify their corporate actions through defining explicit corporate behavior standards. Masculinity measures the acceptance of rigid gender roles in a society and a focus on work success relative to fostering the wellbeing of others. We expect that high masculinity societies are less likely to protect minority shareholders.

Table 6 presents the estimation results. We find that the significant associations between both individualism and uncertainty avoidance and the firm-level corporate governance indices largely remain (with the exception that individualism loses its significant association with the corporate behavior standards index). Furthermore, consistent with our conjecture, we find that power distance is negatively and significantly associated with minority shareholder protection and corporate behavior standards; however, contrary to our conjecture, we find that masculinity is positively and significantly associated with corporate behavior standards.

In summary, when including the full set of Hofstede's cultural dimensions, individualism and uncertainty avoidance continue to predict firm-level corporate governance practices across countries.

Using the Eight Corporate Governance Scores

Our three corporate governance indices are derived from eight well-defined corporate governance summary scores covering: board accountability, financial disclosure and internal control, remuneration, market for corporate control, shareholder rights, corporate behavior – employee relationship, corporate behavior – environment, and corporate behavior – reputation. The determinants and effects of these individual scores are of great interest to regulators and corporate boards in determining corporate governance practices. Table 7 presents the results from this investigation.

Panel A reports results on the cultural determinants of the eight summary scores. We find that the positive association between individualism and transparent disclosure is due to individualism's positive associations with board accountability and remuneration, and that the positive association between individualism and corporate behavior standards is due to individualism's positive associations with corporate behavior – employee relationship and corporate behavior – reputation. Further, we find that the negative association between uncertainty avoidance and transparent disclosure is due to uncertainty avoidance's negative associations with board accountability, and the negative association between

uncertainty avoidance and minority shareholder protection is due to uncertainty avoidance's negative association with shareholder rights.

Panel B presents the relations between the eight summary scores and firm performance when the dependent variable is Tobin's Q. Due to high correlations among the eight corporate governance summary scores, when examining the effects of the eight scores on firm performance, we examine one score at a time. Although there is no overall significant association between transparent disclosure and Tobin's Q, we find that financial disclosure at the firm level and board accountability at the country level are negatively associated with Tobin's Q. We find that the positive firm-level association between minority shareholder protection and firm performance is due to the market for corporate control's positive association with firm performance, and the positive country-level association between minority shareholder protection and firm performance is due to the positive association between shareholder rights and firm performance. We further find that the positive firm-level association between corporate behavior standards and firm performance is due to all three components' positive association with firm performance, and the negative country-level association between corporate behavior standards and firm performance is due to corporate behavior employee relationship and corporate behavior – environment's negative associations with firm performance.

Panel C presents the relations between the eight summary scores and firm performance when the dependent variable is ROA. Although there is no significant firm-level association between transparent disclosure and ROA, we find that board accountability at the firm level is negatively, while remuneration at the firm level is positively, associated with ROA. We find that the negative country-level association between transparent disclosure and firm performance is due to all three components' negative associations with firm performance. We further find that the positive firm-level association between minority shareholder protection and firm performance is due to market for corporate control's positive association with firm performance. We finally find that the positive firm-level association between corporate behavior standards and firm performance is due to all three components' positive associations with firm performance, and the negative country-level association between corporate behavior standards and firm performance is due to corporate behavior – employee relationship and corporate behavior – environment's negative associations with firm performance. We conclude that the results on the

determinants and effects of individual summary score are largely consistent with those of the three corporate governance indices used in our primary analyses.

In summary, using the instrumental variables approach, including Hofstede's two additional cultural dimensions (power distance and masculinity), and examining the eight constituent corporate governance summary scores that make up our three corporate governance indices, we find that the main effects of culture on firm-level corporate governance practices largely remain unchanged so as the effects of firm-level corporate governance practices on firm performance.

8. Conclusions

In this paper, we examine the universality of "good" corporate governance practices as exemplified by the Anglo-American paradigm. In the first part of our investigation, using a new database from Governance Metrics International (GMI), we first construct three corporate governance indices—transparent disclosure, minority shareholder protection, and corporate behavior standards—based on over 4,500 firms from 50 countries for the period 2006-2011. In the second part of our investigation, we find that the national cultural dimension of individualism is positively associated with transparent disclosure and corporate behavior standards, and the uncertainty avoidance dimension is negatively associated with transparent disclosure and minority shareholder protection. In the third part of our investigation, we further find that firm-level corporate governance practices as measured by minority shareholder protection and corporate behavior standards are positively associated with firm performance. At the country-level, minority shareholder protection is positively associated with Tobin's Q; however, corporate behavior standards is negatively associated with both measures of firm performance, and transparent disclosure is negatively associated with ROA.

We conclude that culture matters in firms' adoption of "good" corporate governance practices, irrespective of whether these practices are congruent with the Anglo-American paradigm. Furthermore, within countries, there is a largely positive association between firm-level corporate governance practices and firm performance; however, across countries, the association is largely negative. Our findings are relevant to both academics and practitioners, including securities regulators, policy makers, and fund managers around the world. Investment communities interested in "good" corporate governance practices

can use the cultural region of a firm as a guide for the level of corporate governance practices prevalent in that region. When making investment choices within a country, our findings suggest that good corporate governance practices at the firm level are associated with better investment performance. When choosing countries to invest in, there is mixed evidence on the cross-country association between firm-level corporate governance practices and investment performance, calling into question the universalist perspective. More research thus is needed on the complex relation at the country-level between corporate governance practices and firm performance given its important policy implications.

Appendix I: Construction of the eight corporate governance summary scores

This table provides the scoring scheme as well as the original GMI questions that are used to create our eight corporate governance summary scores. Mean score values are based on the full GMI sample covering 4,457 firms in 50 countries (involving 22,650 firm-year observations) for the period 2006-2011.

Score item	Scoring scheme	GMI code	Question description	Mean
Board Accountability				
BA1	BAindicator1=0; 1 if yes; 0 if missing	1.10a	Do the non-executive members of the board have a formal session without the executive members at least once a year?	0.624
BA2	BAindicator2=1 if no, 0.5 if yes & 1.10h no	1.10g	Do any of the board members serve on the boards of at least three other public companies?	0.762
	0 if yes	1.10h	Do 25% to 49.9% of directors serve on the boards of at least three other public companies?	
	0 if yes, ignore missing	1.10i	Do 50% or more of directors serve on the boards of at least three other public companies?	
BA3	BAindicator3=0; 1 if yes; 0 is missing	1.13d	Do all non-executive board members own shares after excluding options held?	0.515
BA4	BAindicator4=0, 1 if yes; 0 if missing	1.1c	Can the non-executive chair be classified as independent?	0.282
BA5	BAindicator5=1 if no; 0.5 if yes & 1.2h no	1.2g	Can 25% to 49.9% of the company's board members be classified as independent?	0.780
	0 if yes	1.2h	Can 0% to 24.9% of the company's board members be classified as independent?	
BA6	BAindicator6=0, 1 if yes; 0 if missing	1.6d	Are all or a majority of the governance or nomination committee members non-executive board members?	0.750
BA7	BAindicator7=1; 0 if yes; 0 if missing	1.6f	Does the CEO sit on the governance or nomination committee?	0.925
BA8	BAindicator8=0; 1 if yes; 0 if missing	1.9e	Did all members attend at least 75% of the board meetings and his or her committee meetings?	0.645
BA9	BAindicator9=0; 1 if 1.10e no	1.10e	Are there more than 15 board members?	0.933
BA10	BAindicator10=1, 0 if yes; 0 if missing	1.10m	Have any directors served on the board for 10 or more years?	0.317
BA11	BAindicator11=0.5, 1 if yes; 0 if missing or NULL	1.10o	If the board has a non-executive Chairman, does that Chairman have substantial industry knowledge?	0.341
BA12	BAindicator12=1, 0.5 if 1.12f yes	1.12f	Have there been related-party transactions in the past three years?	0.606
	0 if 1.12g or 1.12h yes	1.12g	Has there been a related-party transaction involving the Chairman, CEO, President, COO, or CFO or a relative of the Chairman, CEO, President, COO, or CFO, or the controlling shareholder, if any, within the last three years?	
		1.12h	Did related-party transactions in the aggregate amount to at least one percent of this company's revenues for any single year within the last three years?	
BA13	BAindicator13=0, 1 if yes; 0 if missing	1.13e	Has the number of company shares held by officers and directors as a group increased by 10% or more over the last 12 months?	0.243
BA14	BAindicator14=1, 0 if yes; 0 if missing	1.13f	Has the number of company shares held by officers and directors as a group decreased by 10% or more over the last 12 months?	0.704
BA15	BAindicator15=1, 0 if yes; 0 if missing	1.14b	Within the last three years, has the company failed to adopt the specific recommendations (or a comparable alternative) of a shareholder proposal approved by a majority of the votes cast?	0.948
BA16	BAindicator16=0, 1 if yes	1.1f	Can the designated "lead" or senior non-executive board member be classified as independent?	0.328
BA17	BAindicator17=0, 1 if yes; 0 if missing	1.3d	Are some board members subject to nomination, election, or appointment by a constituency group?	0.115
BA18	BAindicator18=0, 1 if yes; 0 if missing	1.3g	Does the company accept shareholder nominations for board candidates?	0.756
BA19	BAindicator19=0, 1 if yes; 0 if missing	1.3h	Does the company use, or has it adopted, some form of majority voting in the election of directors?	0.594
BA20	BAindicator20=1, 0.5 if 1.9f yes; 0 if missing	1.9f	Have one or more members missed 25% or more of the board meetings and his or her committee meetings?	0.696

	0 if 1.9g yes; 0 if missing	1.9g	Have more than 25% of the board members missed 25% or more of the board meetings and his or her committee meetings?	
Financial Disclosure and Internal Controls				
FD1	FDindicator1=0, 1 if yes; 0 if missing	2.10d	Has the board adopted a separate committee or subcommittee responsible for oversight of risk management?	0.043
FD2	FDindicator2=0, 1 if yes	2.1a	Is there an audit committee?	0.870
FD3	FDindicator3=0, 1 if yes; 0 is missing	2.1c	Is the audit committee wholly composed of non-executive board members?	0.842
FD4	FDindicator4=0, 1 if 2.2d yes or 2.2g yes; 0 if missing	2.2d	Is there at least one non-executive member of the audit committee who has general expertise in accounting or financial management?	0.798
		2.2g	Is there at least one non-executive member of the audit committee who has recent expertise in accounting or financial management?	
FD5	FDindicator5=0, 1 if yes; 0 if missing	2.2t	Does the audit committee have sole authority to approve any non-audit services from the company's outside auditor?	0.649
FD6	FDindicator6=1, 0 if yes; 0 if missing	2.4d	Does the company use its outside auditors for internal audit services?	0.864
FD7	FDindicator7=1, 0 if yes; 0 if missing	2.4j	Did the company pay its auditor less for audit and audit-related services than for other services in the last year reported?	0.891
Shareholder Rights				
SR1	SRindicator1=1, 0 if yes; 1 if missing	3.3h	Must shares be deposited or blocked from trading in order to vote?	0.913
SR2	SRindicator2=0, 1 if yes; 0 if missing	3.4a	Do all common or ordinary equity shares have one-share, one-vote, with no restrictions?	0.823
SR3	SRindicator3=1, 0 if yes; 0 if missing	3.4b	If there are classes of stock with different voting rights, does the class that is widely held have lower voting rights than other classes held by insiders or other core shareholders?	0.930
SR4	SRindicator4=1, 0 if yes; 0 if missing	3.4d	Are voting rights capped at a certain percentage, no matter how many shares the investor owns?	0.963
SR5	SRindicator5=1, 0 if yes; 0 if missing	3.4f	Are voting rights different depending on the duration of ownership?	0.979
SR6	SRindicator6=1, 0 if yes; 0 if missing	3.4g	Does the company require a minimum amount of shares in order to vote?	0.897
SR7	SRindicator7=0, 1 if 3.8a yes; 0 if missing	3.8a	Do shareowners have a right to convene an EGM (or "Special Meeting")?	0.746
SR8	SRindicator7b=0, 1 if 3.8b yes; 0 if missing	3.8b	Do shareholders have a right to convene an EGM with 10% or less of the shares requesting one?	0.566
Remuneration				
MR1	MRindicator1=0, 1 if 4.1b yes; 0 if missing	4.1b	Is the remuneration committee wholly composed of non-executive board members?	0.766
MR2	MRindicator2=1, 0 if yes; 0 if missing	4.1e	Does the CEO/Managing Director sit on the remuneration committee?	0.964
MR3	MRindicator3=1, 0 if yes; 0 if missing	4.1h	Are there no independent board members on the remuneration committee?	0.963
MR4	MRindicator4=0, 1 if yes; 0 if missing	4.3b	Does the company disclose specific numeric performance targets for the upcoming fiscal year (not the prior fiscal year) for at least one of the performance objectives (not just a target award percentage of salary)?	0.170
MR5	Mrindicator5=1, 0 if yes; 0.5 if missing or Null	4.4o	If the company has a change of control or termination provision, does the CEO and/or do key executives receive three or more times annual salary at the time of a change of control or termination?	0.682
MR6	MRindicator6=1, 0 if yes; 0.5 if missing or Null	4.4v	For the last fiscal year, was total CEO compensation more than 2.99 times higher than that of the next highest compensated key executive?	0.549
MR7	MRindicator7=1, 0 if either 4.8s or 4.8t yes; 0.5 if missing	4.8s	Is total potential dilution as a result of stock options outstanding, plus stock options approved for grant but not yet granted, 20% to 24.99%?	0.803
		4.8t	Is total potential dilution as a result of stock options outstanding, plus stock options approved for grant but not yet granted, more than 25%?	

MR8	MRindicator8=1, 0 if yes; 0 if missing	4.8u	Does the company have an evergreen plan covering executives or members of senior management?	0.983
Market for Corporate Control				
MC1	MCindicator1=1, 0 if 5.1a yes; 0 if missing	5.1a	Has the company adopted a shareholder rights plan ("poison pill")?	0.841
	0.5 if either 5.1b or 5.1c or 5.1d yes	5.1b	Has the company's shareholder rights plan ("poison pill") been ratified by a shareholder vote?	
		5.1c	Does the company's shareholder rights plan include a TIDE provision or a three-year sunset provision?	
		5.1d	Does the shareholder rights plan include a provision allowing it to be redeemed by a vote of the majority of shareholders other than the potential acquirer ("chewable" pill)?	
MC2	MCindicator2=1, 0 if yes; 0.5 if missing	5.3b	Is the company involved in a series of cross-shareholdings with other (related or unrelated) companies?	0.961
MC3	MCindicator3=1, 0 if yes	5.3j	Are minority shareholders in the company's home market historically at risk of not receiving "tagalong rights" in a major company transaction?	0.987
MC4	MCindicator4=1, 0 if 5.4b yes; 0 if missing	5.4b	Does the company have a staggered ("classified") board?	0.515
MC5	MCindicator5=0, 1 if 5.4d yes; 0 if missing	5.4d	Can directors be removed without cause?	0.701
Corporate Behavior- Employee Relationship				
CBS1	CBSindicator1=0, 1 if 6.1c yes; 0 if missing	6.1c	Does the company have a policy addressing workplace safety?	0.530
CBS2	CBSindicator2=0, 1 if 6.1d yes; 0 if missing	6.1d	Does the company comply with an external workplace code such as the ILO Fundamental Conventions or SA 8000 or the U.N. Global Compact?	0.142
CBS3	CBSindicator3=0, 1 if 6.1e yes; 0 if missing	6.1e	Does the company disclose its workplace safety record in the annual report or in another form accessible to shareholders?	0.271
CBS4	CBSindicator4=0, 1 if 6.1f yes; 0 if missing	6.1f	Does an independent outside body audit the company's workplace safety practices?	0.095
Corporate Behavior- Environment				
CBE1	CBEindicator1=0, 1 if 6.3e yes; 0 if missing	6.3e	Does the company disclose its environmental performance in its annual report, on its website, or in a special environmental report?	0.393
CBE2	CBEindicator2=0, 1 if 6.3f yes; 0 if missing	6.3f	Does the company follow the Global Reporting Initiative, Accounting for Sustainability, or other internationally recognized environmental reporting framework to disclose its environmental performance?	0.162
CBE3	CBEindicator3=0, 1 if 6.3i yes; 0 if missing	6.3i	Does the company adhere to a nationally or internationally recognized environmental code of conduct such as the International Chamber of Commerce (ICC) Business Charter for Sustainable Development, CERES, or something comparable?	0.167
CBE4	CBEindicator4=0, 1 if 6.3k yes; 0 if missing	6.3k	Does the company report to shareholders on its exposure to and management of climate change risks?	0.299
CBE5	CBEindicator5=0, 1 if 6.3l yes; 0 if missing	6.3l	Does the company specifically disclose its Greenhouse Gas (GHG) emissions?	0.110
CBE6	CBEindicator6=0, 1 if 6.3n yes; 0 if missing	6.3n	Are specific targets for reducing environmental exposures (e.g., GHG emissions, water use, hazardous waste, toxins, landfill, degradation, spills, etc) disclosed?	0.078
Corporate Behavior- Reputation				
CBP1	CBPindicator1=0, 1 if 6.5f yes; 0 if missing	6.5f	Does the company disclose its policy regarding corporate level political donations?	0.413
CBP2	CBPindicator2=0, 1 if 6.5h yes; 0 if missing	6.5h	Is there a board committee responsible for environmental, health, and safety concerns?	0.146
CBP3	CBPindicator3=0, 1 if 6.5i yes; 0 if missing	6.5i	Does the company have a policy that prohibits money laundering, corruption, and bribery by company employees and agents of the corporation?	0.824

Appendix II. Construction of the three corporate governance indices

This table describes the process to construct our three corporate governance indices from the eight corporate governance summary scores. We first standardize each summary score by subtracting its panel data (22,650 firm-year observations) mean and dividing by its panel data standard deviation. We then collapse our panel of eight standardized governance scores into a single cross-section (of 4,457 firm-level observations) by averaging across years, then on the collapsed data, we center around country means. Finally, we conduct a principal component factor analysis on the eight resulting governance scores. We identify three latent factors (in boldface). To determine which of the governance scores each of the three latent factors loads on, we rotate the factor loading matrix (pattern matrix) using correlated rotation (oblique promax) and apply the 0.5 threshold on factor loadings to identify significant loadings (in boldface).[21] The rotated loading matrix shows that Factor 1 loads significantly on board accountability (BA), financial disclosure and internal controls (FD), and remuneration (MR), Factor 2 on shareholder rights (SR) and market for corporate control (MC), and Factor 3 on corporate behavior – employee relationship (CBS), corporate behavior – environment (CBE), and corporate behavior – reputation (CBP). Accordingly, we name Factor 1 as "transparent disclosure" (= (BA+FD+MR)/3), Factor 2 as "minority shareholder protection" (= (SR+MC)/2), and Factor 3 as "corporate behavior standards" (= (CBS+CBE+CBP)/3).

Factor analysis/correlation — Number of observations = 4,457
Method: principal-component factors — Retained factors = 3
Rotation: oblique promax — Number of parameters = 21

Factor	Eigenvalue	Proportion of variance	Cumulative variance
Factor1	**1.37523**	0.1719	0.4338
Factor2	**1.08154**	0.1352	0.569
Factor3	**2.09544**	0.2619	0.2619
Factor4	0.9095	0.1137	0.6827
Factor5	0.83169	0.104	0.7867
Factor6	0.70299	0.0879	0.8745
Factor7	0.6654	0.0832	0.9577
Factor8	0.33821	0.0423	1.000

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor 1	Factor 2	Factor 3	Uniqueness
BA	**0.719**	-0.072	0.034	0.478
FD	**0.745**	-0.085	-0.042	0.456
MR	**0.561**	0.170	0.006	0.639
MC	-0.207	**0.772**	0.096	0.380
SR	0.190	**0.671**	-0.097	0.492
CBS	-0.026	-0.014	**0.871**	0.247
CBE	-0.049	0.053	**0.873**	0.244
CBP	0.166	-0.031	**0.654**	0.512

[21] We obtain the same factor structure when we use orthogonal rotation. Moreover, the same factor structure remains when we conduct regional analysis on firms belonging to countries of Anglo-American, Germanic, Franco, and Asian cultures separately.

Appendix III. Variable definitions and data sources

Hofstede country-level cultural dimensions:

Individualism: The index is a weighted sum of the following four statements:

1) Have sufficient time for your personal or family life
2) Have good physical working conditions (good ventilation and lighting, adequate work space, etc.)
3) Have security of employment
4) Have an element of variety and adventure in the job

High individualism is indicated by ratings of "of very little or no importance" to items (2) and (3), and ratings of "of utmost importance" to items (1) and (4). Individualism refers to the strength of the ties people have to others within the community. A high score on individualism indicates a loose connection with people. In countries with a high individualist score there is a lack of interpersonal connection and little sharing of responsibility, beyond family and perhaps a few close friends. A society with a low individualism score would have strong group cohesion, and there would be a large amount of loyalty and respect for members of the group. The group itself is also larger and people take more responsibility for each other's well-being.

Uncertainty avoidance: The index is a weighted sum of the following one question and three statements:

1) How often do you feel nervous or tense at work?
2) One can be a good manager without having precise answers to most questions that subordinates may raise about their work
3) Competition between employees usually does more harm than good
4) A company's or organization's rules should not be broken—not even when the employee thinks it is in the company's best interest

High uncertainty avoidance is indicated by answering "always" to the first question, and ratings of "strongly disagree" to item (2), and ratings of "strongly agree" to items (3) and (4). Uncertainty avoidance captures the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. This feeling leads them to beliefs promising certainty and to maintaining institutions protecting conformity. Strong uncertainty avoidance societies maintain rigid codes of belief and behavior and are intolerant towards deviant persons and ideas. Weak uncertainty avoidance societies maintain a more relaxed atmosphere in which practice counts more than principles and deviance is more easily tolerated.

Power distance: The index is a weighted sum of the following one question and three statements:

1) Have a good working relationship with your direct superior
2) Be consulted by your direct superior in his/her decisions
3) How frequently, in your experience, are subordinates afraid to express disagreement with their superiors?
4) An organization structure in which certain subordinates have two bosses should be avoided at all costs

High power distance is indicated by ratings of "of utmost importance" to item (1), ratings of "of very little or no importance" to item (2), answering "very frequently" to item (3), and ratings of "strongly agree" to item (4). Power distance captures the extent to which the less powerful members of institutions and organizations within a society expect and accept that power is distributed unequally.

Masculinity: The index is a weighted sum of the following four statements:

1) Work with people who cooperate well with one another
2) Have an opportunity for advancement to higher level jobs
3) Most people can be trusted
4) When people have failed in life it is often their own fault

Masculinity is indicated by ratings of "of very little or no importance " to item (1), ratings of "of utmost importance" to item (2), ratings of "strongly disagree" to item (3), and ratings of "strongly agree" to item (4). Masculinity is the opposite of Femininity. Masculinity stands for a society in which emotional gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which emotional gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life.

Country-level control variables:

Anti-director rights index: Revised anti-director rights index from Spamann (2010). The index is formed by summing across six subindices capturing shareholder rights: (1) vote by mail, (2) obstacles to the actual exercise of the right to vote (i.e., the requirement that shares be deposited before the shareholders' meeting), (3) minority representation on the board of directors through cumulative voting or proportional representation, (4) an oppressed minority mechanism to seek redress in case of expropriation, (5) preemptive rights to subscribe to new securities issued by the company, and (6) the right to call a special shareholder meeting.

Rule of law: From La Porta et al. (1998). Based on the assessment of the law and order tradition in the country produced by country risk rating agency International Country Risk (ICR). Average of the guide months of April and October of the monthly index between 1982 and 1995. Scale from zero to six, with lower scores for less tradition for law and order.

Common law: From La Porta et al. (1998). An indicator variable that takes a value of one if a country's legal origin is English Common law, and zero otherwise.

GDP per capita: From the World Bank. Logarithm of GPD per capita.

Financial structure index: From Demirguc-Kunt and Levine (2001). An index of stock market development based on measures of size, activity, and efficiency of a country's stock market relative to its credit market.

Firm-year level variables:

Tobin's Q: Ratio of the sum of market value of equity and book value of debt to book assets.

ROA: Operating income before depreciation scaled by total assets.

Size: Logarithm of U.S. dollars in millions (in 2011 dollars).

Sales growth: Annual growth of net sales (net $sales_t$ / net $sales_{t-1}$) averaged over the past three years.

Leverage: Ratio of total liabilities to total assets.

Cash holdings: Ratio of liquid assets held by firms to total assets.

Dependence on external finance: From Rajan and Zingales (1998). It is defined as capital expenditures minus cash flows from operations divided by capital expenditures. This variable for non-U.S. firms is computed using their U.S. industry peers' capital expenditures and cash flows.

Tangibility: Amount of fixed assets divided by total assets.

Closely-held shares: Percentage of shares held by insiders (including senior corporate officers and directors and their immediate families), shares held in trusts, shares held by another corporation (except shares held in a fiduciary capacity by financial institutions), shares held by pension/benefit plans, and shares held by individuals who hold 5% or more of shares outstanding. For firms with more than one class of shares, closely-held shares for each class are added together.

ADR: An indicator variable that takes a value of one if a firm is listed on the U.S. exchange through ADR, and zero otherwise.

Instrumental variables:

IV_Catholic, IV_Protestant, IV_Orthodox, IV_Muslim, IV_Hindu: From Barrett, Kurian, and Johnson (2001). Indicator variables that take a value of one if Catholicism/Protestantism/Orthodox Christianity/Islam/Hinduism is a country's dominant religion circa 1900, and zero otherwise.

IV_Arable land: From the World Bank. Area of arable land as a percentage of total land area in 1961.

IV_Population density: From the World Bank. Logarithm of the number of people per square kilometer residing in a country in 1961.

IV_Africa, IV_Asia, ***IV_Europe, IV_Oceania, IV_North America***, ***IV_South America:*** Indicator variables that take a value of one if a country belongs to the respective continent, and zero otherwise.

IV_colony_France, IV_colony_Netherlands, IV_colony_United Kingdom, IV_colony_Iberia: From Hensel (2009). Indicator variables that take a value of one if a country had been colonized by the respective country (Iberia includes Spain and Portugal) before 1900, and zero otherwise.

IV_frac_ethnic, IV_frac_language, IV_frac_religion: From Alesina et al. (2003). The probability that two randomly selected individuals from a population belong to different ethnic/linguistic/religious groups.

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Figure 1. Scatter plot of individualism and uncertainty avoidance across countries

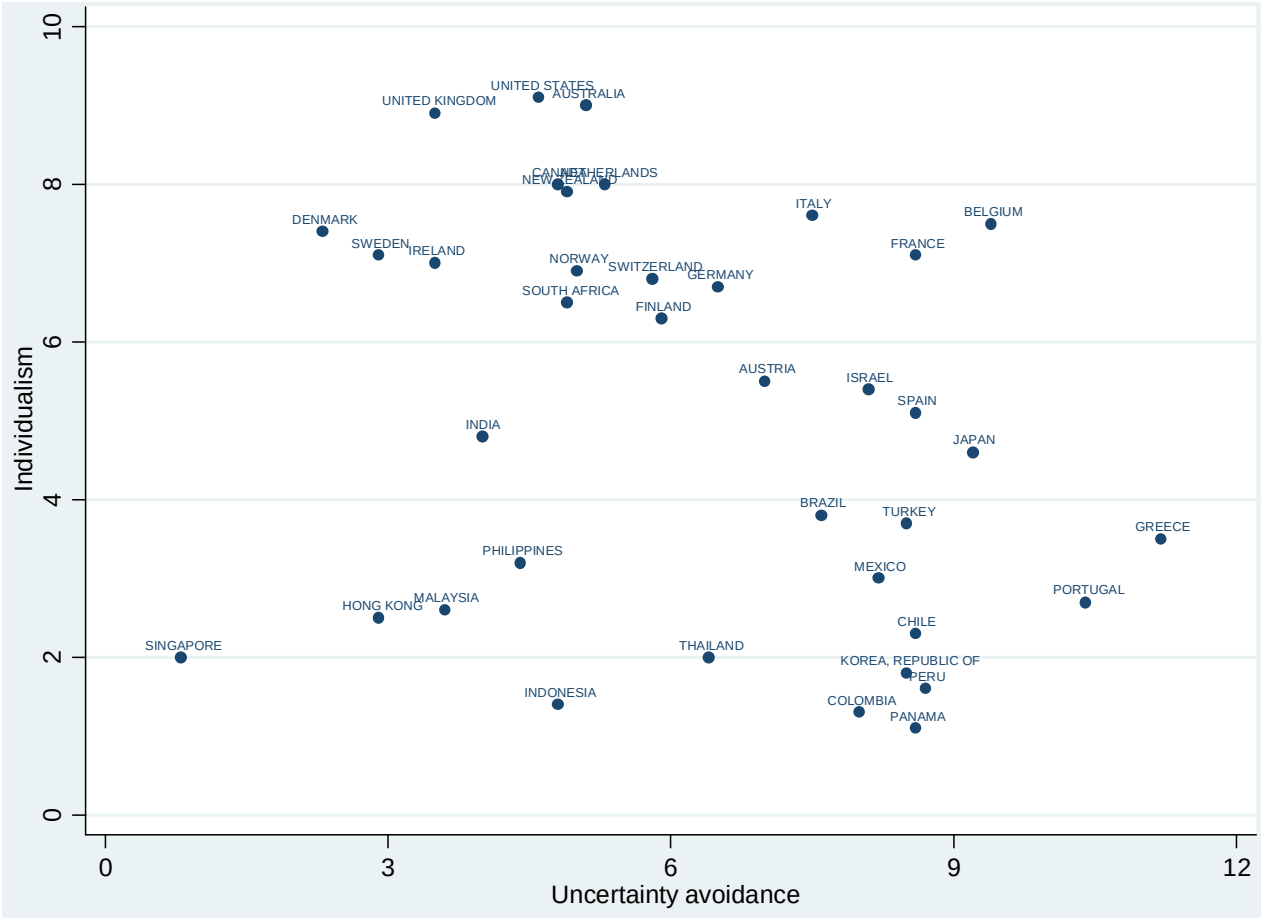

Table 1. Correlations between corporate governance indices, cultural dimensions, and instrumental variables

This table presents pairwise correlations between country averages of the corporate governance indices, the cultural dimensions, and the instrumental variables based on 38 countries. Variable definitions are provided in Appendix III. Panel A reports correlations between the three corporate governance indices and the instrumental variables. Panel B reports correlations between the four cultural dimensions and the instrumental variables. Superscripts a, b, and c indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Correlations between corporate governance indices and instrumental variables

	Transparent disclosure	Minority shareholder protection	Corporate behavior standards
IV_Catholic	-0.296[c]	-0.394[b]	-0.142
IV_Protestant	0.625[a]	0.430[a]	0.524[a]
IV_Orthodox	-0.198	0.082	0.128
IV_Muslim	-0.127	-0.202	-0.196
IV_Hindu	0.034	0.010	-0.208
IV_Arable land	0.002	0.087	0.193
IV_Population density	-0.189	-0.001	-0.172
IV_Africa	0.113	-0.06	0.219
IV_Asia	-0.187	-0.066	-0.496[a]
IV_Europe	0.140	0.237	0.449[a]
IV_North America	0.349[b]	0.009	0.118
IV_South America	-0.434[a]	-0.360[b]	-0.257
IV_colony_France	-0.016	-0.269	0.043
IV_colony_Netherlands	0.042	-0.321[b]	-0.103
IV_colony_United Kingdom	0.572[a]	0.197	-0.106
IV_colony_Iberia	-0.446[a]	-0.302[c]	-0.082
IV_frac_ethnic	0.018	-0.361[b]	-0.288[c]
IV_frac_language	0.233	-0.164	-0.372[b]
IV_frac_religion	0.408[b]	0.015	0.283[c]

Panel B: Correlations between cultural dimensions and instrumental variables

	Individualism	Uncertainty avoidance	Power distance	Masculinity
IV_Catholic	-0.223	0.438[a]	0.286[c]	0.180
IV_Protestant	0.712[a]	-0.435[a]	-0.623[a]	-0.270
IV_Orthodox	-0.101	0.332[b]	0.047	0.062
IV_Muslim	-0.178	-0.022	0.326[b]	-0.027
IV_Hindu	-0.155	-0.104	0.176	-0.057
IV_Arable land	0.335[b]	0.016	-0.190	-0.033
IV_Population density	-0.130	-0.131	0.095	0.134
IV_Africa	0.095	-0.093	-0.033	0.113
IV_Asia	-0.506[a]	-0.302[c]	0.520[a]	0.134
IV_Europe	0.471[a]	0.151	-0.527[a]	-0.238
IV_North America	0.329[b]	-0.153	-0.145	0.089
IV_South America	-0.494[a]	0.356[b]	0.374[b]	-0.008
IV_colony_France	0.135	0.156	0.105	-0.057
IV_colony_Netherlands	0.069	0.027	0.088	-0.177
IV_colony_United Kingdom	0.375[b]	-0.456[a]	-0.198	0.280[c]
IV_colony_Iberia	-0.323[b]	0.402[b]	0.209	-0.195
IV_frac_ethnic	-0.271[c]	0.003	0.381[b]	0.156
IV_frac_language	-0.072	-0.280[c]	0.298[c]	0.013
IV_frac_religion	0.416[a]	-0.340[b]	-0.197	0.259

Table 2. Descriptive statistics

This table presents descriptive statistics for key variables in our analyses. Our sample contains 16,593 firm-year observations from 38 countries for the period 2006-2011 for which we have corporate governance data from GMI and firm characteristics data from Worldscope. All firm-level variables are winsorized at the 1% level in both tails of the distribution. Variable definitions are provided in Appendix III. Panel A reports sample coverage in terms of the number of firms covered in each country-year. Panel B reports country-level summary statistics for the three corporate governance indices and other country-level variables. Panel C reports summary statistics for the firm-level variables. Panel D reports pairwise correlations between the firm-level variables measured as firm-level deviations (*_firm_yr_dev*) based on 2011 data. Panel E reports pairwise correlations between the country-level variables and country-year means of the firm-level variables based on 38 countries in 2011. Superscripts a, b, and c indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Sample coverage across countries and over time

	Year						
Country	2006	2007	2008	2009	2010	2011	All
Australia	58	58	64	73	150	157	560
Austria	10	11	11	12	13	17	74
Belgium	13	14	14	17	19	17	94
Brazil	13	12	19	29	36	47	156
Canada	75	80	79	87	92	87	500
Chile	9	9	11	11	11	13	64
Colombia	1	1	3	3	3	6	17
Denmark	16	16	16	18	19	18	103
Finland	22	23	23	25	25	26	144
France	70	70	75	80	82	83	460
Germany	53	51	50	56	56	59	325
Greece	5	4	7	9	8	13	46
Hong Kong	29	30	35	39	40	42	215
India	17	19	32	37	37	45	187
Indonesia	2	1	7	10	10	15	45
Ireland	12	12	13	15	15	17	84
Israel	4	4	6	8	9	10	41
Italy	20	19	21	24	29	33	146
Japan	299	304	316	338	346	347	1,950
Korea, Republic of	37	35	41	7	62	72	254
Malaysia	9	9	16	18	19	20	91
Mexico	4	0	1	10	14	7	36
Netherlands	22	22	22	24	26	26	142
New Zealand	9	8	9	10	10	10	56
Norway	12	13	13	14	14	18	84
Panama	0	0	0	1	1	1	3
Peru	0	0	0	1	1	1	3
Philippines	1	1	3	3	5	6	19
Portugal	6	6	7	7	7	8	41
Singapore	27	30	30	32	33	33	185
South Africa	23	23	27	29	31	32	165
Spain	26	25	28	29	32	30	170
Sweden	32	32	36	36	36	36	208
Switzerland	29	29	31	33	37	40	199
Thailand	4	4	5	9	9	9	40
Turkey	6	5	6	9	9	11	46
United Kingdom	230	238	260	287	315	318	1,648
United States	1,251	1,219	1,248	1,427	1,430	1,417	7,992
No. of observations	2,456	2,437	2,585	2,877	3,091	3,147	16,593

Panel B: Country-level summary statistics

	Transparent disclosure	Minority shareholder protection	Corporate behavior standards	Individualism	Uncertainty avoidance	Anti-director rights	Rule of law	Common law	Ln(GDP per capita)	Financial structure
Australia	0.42	0.54	0.13	9	5.1	4	4.69	1	10.68	0.50
Austria	-0.31	0.34	0.57	5.5	7	4	4.86	0	10.69	-0.73
Belgium	-0.42	-0.41	-0.49	7.5	9.4	2	4.34	0	10.65	-0.66
Brazil	-1.19	-0.01	0.23	3.8	7.6	5	2.74	0	9.03	0.65
Canada	0.38	0.80	0.50	8	4.8	4	4.70	1	10.63	0.41
Chile	-1.23	-0.44	-0.48	2.3	8.6	5	4.19	0	9.23	0.25
Colombia	-1.75	-0.60	0.14	1.3	8	4	2.23	0	8.56	-0.47
Denmark	-0.45	0.64	0.30	7.4	2.3	4	4.71	0	10.92	0.15
Finland	0.18	0.78	0.47	6.3	5.9	4	4.83	0	10.69	-0.53
France	-0.43	-0.50	0.03	7.1	8.6	5	4.22	0	10.57	-0.17
Germany	-0.30	0.46	0.52	6.7	6.5	4	4.57	0	10.57	-0.10
Greece	-0.75	0.45	0.42	3.5	11.2	3	3.62	0	10.19	-0.34
Hong Kong	-0.54	0.51	-0.67	2.5	2.9	4	3.92	1	10.32	2.10
India	-0.19	0.34	-0.14	4.8	4	4	3.23	1	6.97	-0.14
Indonesia	-0.38	0.01	-0.29	1.4	4.8	4	2.13	0	7.74	-0.50
Ireland	0.61	0.58	-0.01	7	3.5	4	4.54	1	10.86	-0.06
Israel	-0.45	0.42	-0.49	5.4	8.1	4	3.94	1	10.13	-0.06
Italy	-0.27	0.32	0.54	7.6	7.5	4	3.72	0	10.44	-0.57
Japan	-1.48	0.05	0.56	4.6	9.2	5	4.59	0	10.53	-0.19
Korea, Republic of	-0.83	0.13	0.07	1.8	8.5	6	3.80	0	9.86	0.89
Malaysia	-0.38	-0.47	-0.59	2.6	3.6	4	3.34	1	8.91	2.93
Mexico	-1.01	-0.04	-0.57	3	8.2	3	2.59	0	9.07	0.68
Netherlands	-0.05	-0.08	0.40	8	5.3	4	4.67	0	10.74	0.11
New Zealand	0.32	0.55	0.26	7.9	4.9	5	4.71	1	10.28	-0.29
Norway	-0.08	0.78	0.44	6.9	5	4	4.70	0	11.29	-0.33
Panama	-0.31	-0.40	-0.55	1.1	8.6	3	2.88	0	8.87	-0.92
Peru	-0.02	0.55	-0.31	1.6	8.7	5	2.47	0	8.46	0.16
Philippines	-0.46	0.41	-0.72	3.2	4.4	5	2.51	0	7.52	0.71
Portugal	-0.91	-0.06	-0.04	2.7	10.4	4	3.94	0	9.96	-0.75
Singapore	-0.38	0.57	-0.38	2	0.8	4	4.85	1	10.46	1.18
South Africa	0.02	0.03	0.59	6.5	4.9	5	2.95	1	8.68	0.83
Spain	-0.73	0.34	0.17	5.1	8.6	6	4.12	0	10.33	0.02
Sweden	0.08	0.45	0.22	7.1	2.9	4	4.70	0	10.75	0.91
Switzerland	-0.09	0.08	0.50	6.8	5.8	3	4.91	0	11.04	2.03

Thailand	-0.28	0.09	-0.17	2	6.4	4	3.44	1	8.24	0.39
Turkey	-1.17	0.17	0.17	3.7	8.5	4	2.84	0	9.10	1.23
United Kingdom	0.60	0.58	0.15	8.9	3.5	5	4.61	1	10.59	0.92
United States	0.48	-0.38	-0.09	9.1	4.6	2	4.58	1	10.72	1.96

Panel C: Firm-level summary statistics

	No. of obs.	Mean	Standard deviation	5th percentile	50th percentile	95th percentile
Transparent disclosure	16,593	0.056	0.810	-1.580	0.283	1.035
Minority shareholder protection	16,593	-0.035	0.742	-1.572	0.193	1.142
Corporate behavior standards	16,593	0.079	0.765	-0.890	-0.080	1.513
Tobin's Q	16,593	1.785	1.046	0.884	1.443	3.982
ROA	16,593	0.090	0.097	-0.056	0.082	0.256
Size	16,593	15.083	1.472	12.703	15.038	17.569
Sales growth	16,593	1.129	0.205	0.912	1.087	1.470
Leverage	16,593	0.528	0.214	0.148	0.540	0.868
Cash holdings	16,593	0.140	0.146	0.006	0.089	0.463
Dependence on external finance	16,593	1.000	0.427	0.550	0.960	1.611
Tangibility	16,593	0.320	0.252	0.020	0.256	0.831
Closely-held shares	16,593	24.597	21.839	0.190	19.000	67.840
ADR	16,593	0.122	0.327	0.000	0.000	1.000

Panel D: Correlations between the firm-level variables

	Transparent disclosure	Minority shareholder protection	Corporate behavior standards	Tobin's Q	ROA	Size	Sales growth	Leverage	Cash holdings	Dependence on external finance	Tangibility	Closely-held shares	ADR
Transparent disclosure	1.000												
Minority shareholder protection	0.059[a]	1.000											
Corporate behavior standards	0.209[a]	0.064[a]	1.000										
Tobin's Q	-0.064[a]	-0.021	-0.051[a]	1.000									
ROA	-0.037[b]	0.007	0.054[a]	0.587[a]	1.000								
Size	0.178[a]	0.088[a]	0.374[a]	-0.322[a]	-0.173[a]	1.000							
Sales growth	-0.095[a]	-0.019	-0.092[a]	0.215[a]	0.135[a]	-0.085[a]	1.000						
Leverage	0.159[a]	0.039[b]	0.131[a]	-0.214[a]	-0.258[a]	0.519[a]	-0.146[a]	1.000					
Cash holdings	-0.060[a]	-0.046[a]	-0.134[a]	0.357[a]	0.153[a]	-0.286[a]	0.125[a]	-0.295[a]	1.000				
Dependence on external finance	-0.063[a]	-0.041[a]	-0.087[a]	-0.052[a]	-0.212[a]	0.003	0.279[a]	0.013	0.030[c]	1.000			
Tangibility	-0.017	0.043[a]	0.173[a]	-0.052[a]	0.012	-0.063[a]	0.015	-0.101[a]	-0.374[a]	0.006	1.000		
Closely-held shares	-0.128[a]	0.038[b]	-0.102[a]	0.067[a]	0.035[b]	-0.116[a]	0.059[a]	-0.073[a]	0.059[a]	0.025	0.027[c]	1.000	
ADR	0.148[a]	-0.014	0.235[a]	-0.015	-0.008	0.197[a]	-0.050[a]	0.036[b]	-0.021	-0.010	0.025	-0.101[a]	1.000

Panel E: Correlations between the country-level variables and country-means of the firm-level variables

	Transp.	Shr. protect.	Corp. behav.	Tobin's Q	ROA	Size	Sales growth	Lev.	Cash	External finance	Tangibility	Closely-held shares	ADR	Individualism	Uncertainty avoidance	Anti-director	Rule of law	Common law	Ln(GDP per capita)	Financia structur
Transparency	1.000																			
Shr. protect.	0.294[b]	1.000																		
Corp. behav.	0.297[b]	0.481[a]	1.000																	
Tobin's Q	0.086	-0.210	-0.390[a]	1.000																
ROA	-0.048	-0.219	-0.474[a]	0.862[a]	1.000															
Size	-0.463[a]	-0.093	0.012	-0.332[b]	-0.230	1.000														
Sales growth	-0.323[b]	-0.177	-0.667[a]	0.336[b]	0.457[a]	0.060	1.000													
Leverage	-0.141	-0.128	0.077	-0.428[a]	-0.530[a]	0.453[a]	-0.395[a]	1.000												
Cash	-0.127	0.078	-0.274[c]	0.116	0.053	-0.075	0.186	-0.101	1.000											
External fin.	0.007	0.354[b]	0.150	-0.417[a]	-0.471[a]	0.092	0.283[c]	-0.022	0.271[c]	1.000										
Tangibility	-0.020	-0.032	-0.139	-0.075	0.176	-0.301[b]	0.119	-0.226	-0.137	0.001	1.000									
Closely-held shares	-0.562[a]	-0.210	-0.453[a]	0.090	0.236	0.459[a]	0.319[b]	0.169	-0.166	-0.214	0.113	1.000								
ADR	-0.117	0.239	0.087	0.162	0.199	0.099	0.283[c]	-0.500[a]	-0.068	0.039	-0.139	0.145	1.000							
Individualism	0.651[a]	0.185	0.591[a]	-0.210	-0.350[b]	-0.228	-0.526[a]	0.111	-0.453[a]	0.040	-0.170	-0.472[a]	-0.177	1.000						
Uncertainty avoidance	-0.514[a]	-0.189	0.090	-0.279[c]	-0.161	0.322[b]	0.011	0.144	-0.160	0.046	0.050	0.364[b]	0.088	-0.199	1.000					
Anti-director	-0.216	0.323[b]	0.057	0.030	0.050	0.096	0.049	-0.073	0.005	0.058	-0.056	0.138	0.189	-0.207	0.020	1.000				
Rule of law	0.510[a]	0.226	0.519[a]	-0.357[b]	-0.532[a]	-0.220	-0.712[a]	0.165	-0.172	-0.052	-0.125	-0.535[a]	-0.198	0.644[a]	-0.275[c]	-0.120	1.000			
Common law	0.489[a]	0.101	-0.184	0.232	0.098	-0.385[a]	0.074	-0.114	0.098	0.196	0.070	-0.271[c]	-0.086	0.214	-0.542[a]	-0.073	0.207	1.000		
Ln(GDP per capita)	0.428[a]	0.328[b]	0.608[a]	-0.464[a]	-0.559[a]	-0.124	-0.612[a]	0.035	-0.084	0.135	-0.118	-0.559[a]	-0.007	0.610[a]	-0.089	-0.175	0.844[a]	0.033	1.000	
Fin. structure	0.080	-0.115	-0.231	0.238	0.111	0.014	0.111	-0.189	0.409[b]	0.157	-0.217	-0.165	0.063	-0.013	-0.464[a]	-0.048	0.021	0.412[b]	0.022	1.000

Table 3. Explaining firm-level corporate governance practices

This table presents estimation results for the HLM specification in Equation (1). Our sample contains 16,593 firm-year observations from 38 countries for the period 2006-2011 for which we have corporate governance data from GMI and firm characteristics data from Worldscope. All firm-level variables are winsorized at the 1% level in both tails of the distribution. Variable definitions are provided in Appendix III. One-year-lagged firm- and country-level variables for the period 2005-2010 are used to predict three corporate governance indices for the period 2006-2011. Firm-level independent variables are decomposed into firm-level deviations *(_firm_yr_dev)* and country-level means *(_ctry_yr_mean).* Country-level controls are included in the column under *_ctry*. All country-level variables and country-mean of firm-level variables are grand-mean- and annual-mean-centered, while all firm-level variables are country-year-mean-centered. Two-digit SIC industry fixed effects and year fixed effects are included but not reported. Standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Transparent disclosure			Minority shareholder protection			Corporate behavior standards		
	_firm_yr_dev	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*
Firm Characteristics									
Size	0.0211***	0.103***		0.036***	0.064		0.221***	0.254***	
	[0.00265]	[0.0318]		[0.004]	[0.046]		[0.004]	[0.041]	
Leverage	0.136***	-0.950***		-0.044*	0.132		0.184***	-0.202	
	[0.0171]	[0.218]		[0.026]	[0.311]		[0.024]	[0.282]	
Cash holdings	-0.090***	-2.183***		0.151***	-0.848*		0.026	-1.995***	
	[0.025]	[0.339]		[0.038]	[0.497]		[0.035]	[0.452]	
Dependence on external finance	-0.033***	-0.329***		-0.0510***	0.632***		-0.159***	-0.225**	
	[0.010]	[0.0786]		[0.011]	[0.117]		[0.010]	[0.107]	
Closely-held shares	-0.003***	0.004**		0.001***	0.004*		-0.002***	-0.005**	
	[0.000]	[0.002]		[0.000]	[0.002]		[0.000]	[0.002]	
ADR	0.136***	-0.415***		-0.00793	-0.147		0.233***	-0.069	
	[0.011]	[0.124]		[0.017]	[0.164]		[0.016]	[0.147]	
Country Characteristics									
Individualism			0.099***			-0.015			0.071***
			[0.037]			[0.030]			[0.026]
Uncertainty avoidance			-0.098***			-0.100***			-0.008
			[0.035]			[0.028]			[0.024]
Anti-director rights			-0.003			0.081			0.094*
			[0.077]			[0.062]			[0.052]
Rule of law			-0.309***			-0.096			0.024
			[0.117]			[0.109]			[0.095]

Common law	0.471***	0.150	-0.079
	[0.169]	[0.136]	[0.116]
Ln(GDP per capita)	0.327***	0.218***	0.005
	[0.054]	[0.069]	[0.061]
Financial structure	-0.106	-0.190***	-0.023
	[0.088]	[0.071]	[0.061]
Intercept	0.195	0.347*	-0.340*
	[0.173]	[0.203]	[0.183]
Industry FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
No. of countries	38	38	38
No. of observations	16,593	16,593	16,593

Table 4. The relation between firm-level corporate governance and firm performance

This table presents estimation results for the HLM specification in Equation (2). All firm-level variables are winsorized at the 1% level in both tails of the distribution. Variable definitions are provided in Appendix III. Independent variables (including three corporate governance indices) for the period 2006-2011 are used to predict firm performance for the period 2007-2012. The Tobin's Q (ROA) regression contains 19,028 (18,829) firm-years from 38 countries. Firm performance is measured in Tobin's Q and ROA, both scaled up by 100. Firm-level independent variables are decomposed into firm-level deviations *(_firm_yr_dev)* and country-level means *(_ctry_yr_mean).* Country-level controls are included in the column under *_ctry*. Interactions between financial structure and firm characteristics (measured as firm-level deviations) are reported under the column *_ctry* × *_firm_yr_dev*. All country-level variables and country-mean of firm-level variables are grand-mean- and annual-mean-centered, while all firm-level variables are country-year-mean-centered. Two-digit SIC industry fixed effects and year fixed effects are included but not reported. Standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Tobin's Q			ROA		
	_firm_yr_dev	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*
Firm Characteristics						
Transparent disclosure	-1.107	-5.577		0.0593	-1.133**	
	[1.550]	[6.069]		[0.166]	[0.574]	
Minority shareholder protection	2.873**	10.544**		0.299**	0.672	
	[1.200]	[4.193]		[0.129]	[0.427]	
Corporate behavior standards	12.483***	-14.701**		1.148***	-1.559**	
	[1.112]	[6.517]		[0.119]	[0.617]	
Size	-16.051***	-17.020***		-0.636***	-0.949**	
	[0.553]	[4.678]		[0.0595]	[0.439]	
Sales growth	47.203***	-19.537		2.045***	-2.752	
	[3.333]	[23.48]		[0.358]	[2.421]	
Leverage	-5.760*	23.842		-3.501***	0.324	
	[3.402]	[31.19]		[0.365]	[3.056]	
Tangibility	-22.964***	5.222		-0.272	4.864*	
	[3.559]	[29.19]		[0.382]	[2.731]	
Closely-held shares	0.137***	-0.504***		-0.0126***	-0.0362**	
	[0.0323]	[0.179]		[0.00346]	[0.0176]	
ADR	9.377***	37.560**		0.073	3.096**	
	[2.165]	[14.87]		[0.232]	[1.347]	
Country Characteristics						
Individualism			1.147			0.222
			[1.755]			[0.156]
Uncertainty avoidance			-3.699**			-0.431***
			[1.574]			[0.138]
Anti-director rights			-4.591			-0.341
			[3.136]			[0.267]
Rule of law			2.248			-0.265
			[6.656]			[0.595]
Common law			-19.571**			-1.302*
			[7.858]			[0.691]
Ln(GDP per capita)			-22.943***			-1.937***
			[4.937]			[0.450]
Financial structure			3.177			-0.00812
			[3.736]			[0.324]

Cross-Level Interactions	*_ctry × _firm_yr_dev*	*_ctry × _firm_yr_dev*
Transparent disclosure × Individualism	-0.283 [0.717]	0.0272 [0.0769]
Minority shareholder protection × Individualism	0.630 [0.862]	-0.0821 [0.0922]
Corporate behavior standards × Individualism	-1.200** [0.563]	-0.0154 [0.0605]
Transparent disclosure × Uncertainty avoidance	0.437 [0.950]	0.194* [0.102]
Minority shareholder protection × Uncertainty avoidance	2.958*** [1.110]	0.138 [0.118]
Corporate behavior standards × Uncertainty avoidance	-3.621*** [0.624]	-0.232*** [0.0670]
Transparent disclosure × Financial structure	1.447 [2.010]	0.357* [0.215]
Minority shareholder protection × Financial structure	4.136** [2.073]	0.431* [0.221]
Corporate behavior standards × Financial structure	3.759*** [1.274]	0.536*** [0.136]
Intercept	218.603*** [20.180]	14.272*** [2.122]
Industry FEs	Yes	Yes
Year FEs	Yes	Yes
No. of countries	38	38
No. of observations	19,028	18,829

Table 5. Instrumental variables regressions

This table presents results of the instrumental variables regression for the HLM specification in Equation (1). All firm-level variables are winsorized at the 1% level in both tails of the distribution. Variable definitions are provided in Appendix III. Panel A reports the first-stage regression results, where the cultural dimensions of individualism and uncertainty avoidance are instrumented with five dominant religion indicator variables (Catholic, Protestant, Orthodox, Muslim, and Hindu), the percentage of arable land, population density, and five continent indicator variables (Africa, Asia, Europe, North America, and South America). Panel B reports the second-stage regression results where the instrumented cultural dimensions from the first stage are used in Equation (1). Our sample contains 16,593 firm-year observations from 38 countries for the period 2006-2011 for which we have corporate governance data from GMI and firm characteristics data from Worldscope. Two-digit SIC industry fixed effects and year fixed effects are included but not reported. Standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: First-stage regression: Instrumenting cultural dimensions

	Individualism	Uncertainty avoidance
IV_Catholic	0.952	-1.209
	[0.948]	[1.534]
IV_Protestant	2.362**	-4.441**
	[1.010]	[1.633]
IV_Orthodox	-1.339	2.101
	[1.538]	[2.488]
IV_Muslim	-0.338	-1.593
	[1.179]	[1.906]
IV_Hindu	0.459	-0.694
	[1.264]	[2.045]
IV_Arable land	0.022	0.011
	[0.020]	[0.033]
IV_Population density	0.127	-0.316
	[0.229]	[0.370]
IV_Africa	-0.771	-2.905
	[1.672]	[2.704]
IV_Asia	-4.198***	-2.845
	[1.501]	[2.428]
IV_Europe	-1.930	0.418
	[1.166]	[1.885]
IV_North America	-0.073	-0.166
	[1.246]	[2.015]
IV_South America	-4.955***	0.478
	[1.240]	[2.005]
Intercept	5.757***	9.752***
	[1.409]	[2.279]
No. of observations	38	38
adj. R-sq	0.762	0.342

Panel B: Second-stage regression: Explaining corporate governance practices

	Transparent disclosure			Minority shareholder protection			Corporate behavior standards		
	_firm_yr_dev	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*
Firm Characteristics									
Size	0.021***	0.099***		0.036***	0.055		0.221***	0.252***	
	[0.003]	[0.032]		[0.004]	[0.046]		[0.004]	[0.041]	
Leverage	0.136***	-0.964***		-0.044*	0.122		0.184***	-0.201	
	[0.017]	[0.218]		[0.026]	[0.315]		[0.024]	[0.280]	
Cash holdings	-0.090***	-2.184***		0.151***	-0.852*		0.026	-1.925***	
	[0.025]	[0.339]		[0.038]	[0.502]		[0.035]	[0.450]	
Dependence on external finance	-0.033***	-0.318***		-0.051***	0.652***		-0.159***	-0.205*	
	[0.007]	[0.079]		[0.011]	[0.118]		[0.010]	[0.107]	
Closely-held shares	-0.003***	0.004**		0.001***	0.005**		-0.002***	-0.006***	
	[0.000]	[0.002]		[0.000]	[0.002]		[0.000]	[0.002]	
ADR	0.137***	-0.366***		-0.008	-0.057		0.233***	-0.015	
	[0.011]	[0.125]		[0.017]	[0.169]		[0.016]	[0.144]	
Country Characteristics									
Individualism (IDV)			0.111***			0.004			0.083***
			[0.041]			[0.035]			[0.026]
Uncertainty avoidance (UAI)			-0.106**			-0.102**			-0.035
			[0.051]			[0.043]			[0.032]
Anti-director rights			-0.014			0.075			0.090*
			[0.080]			[0.067]			[0.050]
Rule of law			-0.344***			-0.144			-0.029
			[0.122]			[0.120]			[0.095]
Common law			0.639***			0.287**			-0.060
			[0.159]			[0.134]			[0.100]
Ln(GDP per capita)			0.340***			0.234***			0.022
			[0.054]			[0.072]			[0.061]
Financial structure			-0.098			-0.186**			-0.038
			[0.097]			[0.082]			[0.062]

Intercept	0.269	0.449**	-0.343*
	[0.170]	[0.204]	[0.178]
Industry FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
No. of countries	38	38	38
No. of observations	16,593	16,593	16,593

Table 6. Using all of Hofstede's four cultural dimensions to explain corporate governance practices

This table presents estimation results for the HLM specification in Equation (1) including all of Hofstede's four cultural dimensions. Our sample contains 16,593 firm-year observations from 38 countries for the period 2006-2011 for which we have corporate governance data from GMI and firm characteristics data from Worldscope. All firm-level variables are winsorized at the 1% level in both tails of the distribution. Variable definitions are provided in Appendix III. One-year-lagged firm- and country-level variables for the period 2005-2010 are used to predict three corporate governance indices for the period 2006-2011. Firm-level independent variables are decomposed into firm-level deviations *(_firm_yr_dev)* and country-level means *(_ctry_yr_mean).* Country-level controls are included in the column under *_ctry*. All country-level variables and country-mean of firm-level variables are grand-mean- and annual-mean-centered, while all firm-level variables are country-year-mean-centered. Two-digit SIC industry fixed effects and year fixed effects are included but not reported. Standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Transparent disclosure			Minority shareholder protection			Corporate behavior standards		
	_firm_yr_dev	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*	*_firm_yr_dev*	*_ctry_yr_mean*	*_ctry*
Firm Characteristics									
Size	0.021***	0.103***		0.036***	0.082*		0.221***	0.262***	
	[0.003]	[0.032]		[0.004]	[0.046]		[0.004]	[0.041]	
Leverage	0.136***	-0.950***		-0.044*	0.192		0.184***	-0.114	
	[0.017]	[0.218]		[0.026]	[0.307]		[0.024]	[0.274]	
Cash holdings	-0.090***	-2.170***		0.151***	-0.787		0.026	-2.071***	
	[0.025]	[0.339]		[0.038]	[0.494]		[0.035]	[0.446]	
Dependence on external finance	-0.033***	-0.328***		-0.051***	0.614***		-0.159***	-0.242**	
	[0.007]	[0.079]		[0.011]	[0.117]		[0.010]	[0.106]	
Closely-held shares	-0.003***	0.004**		0.001***	0.005**		-0.002***	-0.005**	
	[0.000]	[0.002]		[0.000]	[0.002]		[0.000]	[0.002]	
ADR	0.136***	-0.409***		-0.008	-0.228		0.233***	-0.168	
	[0.011]	[0.126]		[0.017]	[0.164]		[0.016]	[0.143]	
Country Characteristics									
Individualism			0.106***			-0.045			0.037
			[0.041]			[0.030]			[0.024]
Uncertainty avoidance			-0.089**			-0.098***			-0.022
			[0.036]			[0.027]			[0.022]
Power distance			0.007			-0.093**			-0.081***
			[0.048]			[0.037]			[0.030]
Masculinity			-0.031			0.006			0.051**
			[0.036]			[0.026]			[0.021]

Anti-director rights	-0.005	0.061	0.086*
	[0.077]	[0.057]	[0.045]
Rule of law	-0.317**	-0.158	-0.025
	[0.126]	[0.106]	[0.088]
Common law	0.520***	0.125	-0.178*
	[0.177]	[0.132]	[0.106]
Ln(GDP per capita)	0.327***	0.180***	-0.021
	[0.054]	[0.068]	[0.058]
Financial structure	-0.104	-0.133*	0.023
	[0.092]	[0.070]	[0.056]
Intercept	0.178	0.353*	-0.304*
	[0.173]	[0.200]	[0.178]
Industry FEs	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes
No. of countries	38	38	38
No. of observations	16,593	16,593	16,593

Table 7. Using the eight corporate governance summary scores

This table presents estimation results for the HLM specification in Equations (1) and (2). All firm-level variables are winsorized at the 1% level in both tails of the distribution. Variable definitions are provided in Appendix III. Panel A explains the eight corporate governance summary scores using one-year-lagged firm- and country-level variables for the period 2005-2010. Our sample contains 16,593 firm-year observations from 38 countries for the period 2006-2011 for which we have corporate governance data from GMI and firm characteristics data from Worldscope. For brevity, we only report coefficient estimates for the two cultural dimensions. Panels B and C explain firm performance using the eight corporate governance summary scores one at a time and additional controls (same as in Equation (2)). Independent variables (including three corporate governance indices) for the period 2006-2011 are used to predict firm performance for the period 2007-2012. The Tobin's Q (ROA) regression contains 19,028 (18,829) firm-year observations from 38 countries. For brevity, we only report coefficient estimates for the firm-level deviations and the country-level means of the summary scores. Standard errors are in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Explaining the eight corporate governance summary scores

	Transparent disclosure			Minority shareholder protection		Corporate behavior standards		
	BA	FD	MR	MC	SR	CBS	CBE	CBP
Individualism	0.122***	0.081	0.101**	-0.020	-0.011	0.082**	0.041	0.091**
	[0.039]	[0.053]	[0.043]	[0.041]	[0.050]	[0.032]	[0.031]	[0.043]
Uncertainty avoidance	-0.168***	-0.056	-0.066	-0.056	-0.144***	0.003	-0.041	0.016
	[0.037]	[0.051]	[0.040]	[0.038]	[0.048]	[0.030]	[0.029]	[0.040]
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of countries	38	38	38	38	38	38	38	38
No. of observations	16,593	16,593	16,593	16,593	16,593	16,593	16,593	16,593

Panel B: The role of the eight corporate governance summary scores in explaining Tobin's Q

	Transparent disclosure			Minority shareholder protection		Corporate behavior standards		
	BA	FD	MR	MC	SR	CBS	CBE	CBP
firm_yr_dev_CG score	0.580	-4.186**	0.725	4.534***	-0.750	6.498***	9.960***	5.127***
	[1.025]	[1.770]	[0.777]	[0.965]	[0.860]	[0.805]	[0.887]	[0.766]
ctry_yr_mean_CG score	-12.841***	-6.572	0.105	2.077	6.643**	-16.480***	-7.495**	-2.406
	[4.644]	[4.170]	[3.548]	[3.743]	[2.852]	[5.447]	[3.404]	[4.490]
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of countries	38	38	38	38	38	38	38	38
No. of observations	19,028	19,028	19,028	19,028	19,028	19,028	19,028	19,028

Panel C: The role of the eight corporate governance summary scores in explaining ROA

	Transparent disclosure			Minority shareholder protection		Corporate behavior standards		
	BA	FD	MR	MC	SR	CBS	CBE	CBP
firm_yr_dev_CG score	-0.227**	-0.272	0.335***	0.446***	-0.013	0.748***	0.793***	0.439***
	[0.110]	[0.190]	[0.083]	[0.103]	[0.092]	[0.086]	[0.095]	[0.082]
ctry_yr_mean_CG score	-0.841*	-1.227***	-0.703*	0.373	0.033	-1.619***	-0.969***	-0.550
	[0.456]	[0.415]	[0.359]	[0.366]	[0.284]	[0.529]	[0.347]	[0.410]
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of countries	38	38	38	38	38	38	38	38
No. of observations	18,829	18,829	18,829	18,829	18,829	18,829	18,829	18,829