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Published in:
Corporate Governance - An International Review

DOI:
10.1111/corg.12099

Corporate Governance: An International Review, 2015, 23(4): 357–377

National Culture and Internal Control Disclosures: A Cross-country Analysis

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ABSTRACT

Manuscript Type: Empirical
Research Question/Issue: This study examines the association between national culture and the amount of information on internal controls listed companies disclose in their annual reports. In particular, we argue that culture affects managers' perceptions of the costs and benefits of disclosing information and, consequently, drive managers' disclosure choices. In addition, we investigate whether culture indirectly, via investor protection, determines disclosure decisions.
Research Findings/Insights: Using unique hand-collected data from a sample of 4,370 firm-year observations for 1,559 firms from 29 countries for the period 2005 to 2007, we find that national culture directly affects such disclosures. Moreover, we show that national culture also indirectly affects disclosures via the level of investor protection in a country.
Theoretical/Academic Implications: This article is the first to examine cultural determinants of internal control disclosures using a framework in which managers' disclosing decisions are determined by the trade-off between the costs and benefits of disclosing such information. Moreover, we are the first to demonstrate that culture not only directly but also indirectly, via investor protection, influences disclosure choices.
Practitioner/Policy Implications: This study contributes to the debate on the development and design of corporate governance practices. Accounting scandals and corporate failures in recent years have raised calls for improved internal controls, as well as enhanced reporting about these internal controls. Many of these calls are characterized by the view that there is an optimal way of developing such systems. We show that differences in internal control disclosures are influenced by cultural differences. Therefore, introducing a uniform approach to demanding disclosure of information on internal controls may not necessarily translate into uniform reporting practices.

Keywords: Corporate Governance, Financial Disclosure, Internal Control Disclosure, National Culture, Investor Protection

INTRODUCTION

The importance of disclosing information on internal controls (also referred to as internal control disclosures) has been debated since the late 1970s (McMullen, Raghunandan, & Rama, 1996). The attention for this type of disclosure increased substantially after the accounting scandals at the beginning of the twenty-first century. These scandals triggered public concerns about the lack of internal control quality and raised awareness of the key role of effective internal controls in the governance of the firm (e.g., Lin, Wang, Chiou, & Huang, 2014). Internal controls are established to protect the interests of investors by promoting reliable financial reporting and by providing timely information about risks that may endanger the achievement of the firm's goals. Disclosure in the annual report of information on the design and functioning of these internal controls is therefore important, as investors may use the information to scrutinize managers (Hammersley, Myers, & Shakespeare, 2008; Hermanson, 2000; Van de Poel & Vanstraelen, 2011). Research has shown that investors perceive these disclosures as value-relevant. Indeed, a number of US-based studies find evidence that internal control disclosures affect the cost of capital. Except for an early study by Ogneva, Subramanyam, and Raghunandan (2007), evidence supports the view that internal control risk matters to investors. For instance, studies by Ashbaugh-Skaife, Collins, Kinney, and LaFond (2009) and Beneish, Billings, and Hodder (2008) demonstrate that firms reporting internal control problems face higher cost of equity, while Costello and Wittenberg-Moerman (2011) and Dhaliwal, Hogan,

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doi:10.1111/corg.12099

Trezevant, and Wilkins (2011) report a similar effect on the cost of debt. In a similar vein, Campbell, Chen, Dhaliwal, Lu, and Steel (2014) demonstrate that investors incorporate risk factor disclosures into market values.

Given the value-relevance of disclosing information on internal controls, it is surprising that only the United States mandates the disclosure of this type of information. In the United States, the response to the accounting scandals was the introduction of the Sarbanes-Oxley Act of 2002 (SOX). SOX requires managers of large publicly listed companies to report on the effectiveness of internal controls over financial reporting. Outside the United States, law does not prescribe reporting on internal controls. Instead, national corporate governance codes have been established in which the importance of internal control disclosures is discussed, but the nature of these codes makes reporting on internal controls largely voluntary. That is, outside the United States, managers have discretion with respect to the amount of information they disclose on the firm's internal controls. This means that outside the United States internal control disclosures can be considered to reflect managers' economic and agency incentives. Consequently, this may lead to considerable variation in reporting, not only between firms within a country but also cross-nationally. Understanding the incentives underlying managers' decisions to voluntarily disclose information on internal controls therefore seems pertinent.

Notwithstanding the importance of internal control disclosures, our understanding of why managers decide to voluntarily disclose this information is limited. The few available studies focus on aspects such as the size of firms, capital structure, and specific corporate governance arrangements, such as the presence or absence of active audit committees, ownership concentration, and type of ownership (Bronson, Carcello, & Raghunandan, 2006; Deumes & Knechel, 2008). These studies suggest that managers' decisions with respect to voluntary internal control disclosures are based on a tradeoff between the costs and benefits of disclosing information. Although these studies provide useful insights about the determinants of internal control disclosures, they do not address possible cross-national differences in this tradeoff as they are based on a single country. In our study, we extend prior work by using a larger sample of firms, that spans many different countries, large and medium-sized firms, and a recent time period, allowing us to investigate whether the perceptions of the costs and benefits of voluntarily disclosing information on internal controls are culturally determined. We argue that the social normative nature of culture determines the characteristics of agency relations (Fidrmuc & Jacob, 2010; Wiseman, Cuevas-Rodríguez, & Gomez-Mejia, 2012). In particular, we posit that national culture determines the acceptance and legitimacy of different approaches of managers towards the voluntary disclosure of information on internal controls. Specifically, we develop hypotheses on the determinants of voluntary disclosure of information on internal controls and explain how culturally determined social norms affect the cost-benefit trade-off managers make in their disclosure choices.

While we are not the first to investigate the link between culture and voluntary disclosures of firms, we make a number of theoretical and empirical contributions to the literature. First, prior studies mainly rely on Gray's (1988) theory to explain how differences in national culture lead to variations in accounting systems (e.g., Chanchani & MacGregor, 1999; Doupnik, 2008; Doupnik & Tsakumis, 2004). Gray's theory is suitable primarily for explaining the effects of national culture, through accounting values, on broad systemic or structural differences across countries (Doupnik & Tsakumis, 2004; Han, Kang, Salter, & Yoo, 2010). In contrast, our cost-benefit framework is more suitable for explaining how preferences and behaviors of economic agents are culturally determined. As such our framework constitutes the first attempt to bridge the gap that separates the firm-level voluntary disclosure literature from the country-level, systemic approach embodied by Gray's (1988) theory.

Second, we contribute to the literature on the relationship between culture and voluntary disclosure by specifically focusing on the voluntary disclosure of information on internal controls. Previous studies in this field (e.g., Doupnik, 2008; Doupnik & Tsakumis, 2004; Zarzeski, 1996) focus on *financial* disclosures only, i.e. the disclosure of information regarding financial statement numbers. These studies rely on proxies that measure to what extent specific items on the balance sheet, the income statement, and the cash flow statement are present in a firm's annual report. In contrast, in this study we consider the relatively new internal control disclosures that are of a completely different nature. Internal control disclosures convey contextual information about the mechanisms managers have designed to promote reliable financial reporting and about the risks that may endanger the company's goals. Moreover, in our study we consider information on the control environment, risk assessment, control activities, and monitoring (COSO, 1992). As such, we adopt a broader view than currently used in US-based studies, which focus on internal controls over financial reporting (e.g., Lin et al., 2014; Schneider, Gramling, Hermanson, & Ye, 2009).

Our regression analyses, which rely on unique, hand-collected panel data from a sample of 4,370 firm-year observations for 1,559 firms from 29 countries during the period 2005 to 2007, provide robust evidence that differences in the amount of internal control disclosures are culturally determined. Moreover, we provide evidence that the association between culture and internal control disclosures has a direct and indirect component. We show that part of the impact of culture on voluntary disclosures runs through the impact culture has on molding formal institutions (i.e., investor protection). While prior studies show that differences in culture are correlated with differences in investor protection (Licht, Goldschmidt, & Schwartz, 2005, 2007; Stulz & Williamson, 2003), and while prior studies establish that culture *directly* influences managers' financial reporting decisions (e.g., Doupnik & Tsakumis, 2004; Han et al., 2010; Shao, Kwok, & Guedhami, 2010), to the best of our knowledge, we are the first to demonstrate that national culture not only directly but also indirectly, via investor protection, influences managers' choices such as the level of voluntary disclosure in annual reports.[1] That is, we show that the impact of national culture on the level of voluntary disclosure in annual reports is mediated by investor protection.

Third, our study makes an important contribution to the debate on the development and design of corporate governance practices. In particular, recent accounting scandals and the financial crisis have raised calls for improved internal controls and enhanced reporting about these internal controls. Many of these calls are characterized by the view that there is an optimal way of developing these internal controls. Our study shows that differences in observed corporate governance practices, such as the disclosure of information on internal controls, are influenced by cultural differences. International calls for uniform best practices regarding disclosure of information on internal controls may therefore turn out be counterproductive, as there may likely be no uniform approach to tackling accounting scandals and corporate failures. Instead, we argue in favor of considering cultural variations when attempting to develop or update codes of corporate governance to improve internal control disclosures and protect investors' interests.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Voluntary Internal Control Disclosures

The Sarbanes-Oxley Act (SOX) has an extremely narrow perspective on what comprise internal controls. Specifically, SOX focuses on the controls that should safeguard the reliability of financial reporting (e.g., Ashbaugh-Skaife, Collins, & Kinney, 2007; Doyle, Ge, & McVay, 2007; Schneider et al., 2009). In contrast, the perspective adopted outside the United States is much broader and follows the influential COSO framework (1992). According to COSO (1992, p. 1), internal control refers to the "process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives with respect to the effectiveness and efficiency of the firm's operations, the reliability of financial reporting, and compliance with applicable laws and regulations." COSO (1992) suggests that internal controls encompass a number of components, namely: the control environment, risk assessment, control activities, and monitoring.[2] Effective internal controls are regarded as important for achieving sound corporate governance (Bushman & Smith, 2001; IFAC, 2006). They can protect the interests of investors by promoting reliable financial reporting and by providing timely information about risks that may endanger the company's goals (COSO, 2004). According to Hermanson (2000) investors perceive voluntary disclosure of information on internal controls as relevant, next to information provided in the external audit report, because in practice external audits primarily focus on evaluating the internal controls over financial reporting. External audits do not really communicate about the effectiveness of the firm's internal controls in general (Deumes & Knechel, 2008; Schneider & Church, 2008). It is important to note that the auditor's report and information on the firm's internal controls disclosed in the firm's annual report convey different information. For instance, Schneider and Church (2008: 2) note that "the auditor can issue an unqualified opinion on financial statements even if a company has material weaknesses in internal control. The auditor's report provides *reasonable assurance* [italics in original], irrespective of the effectiveness of a company's internal controls." Moreover, internal control disclosures convey information about risks that may endanger the achievement of the firm's future goals, which is beyond the scope of the auditor's activities while auditing the firm's financial statements. Hence, given the different nature of these types of information, it seems reasonable to assume that investors attach additional value to internal control disclosures beyond the information they can extract from the auditor's report.

One important characteristic of internal controls is that they consist of internal managerial processes, i.e. they cannot be directly observed by investors. Their judgment of the effectiveness of these internal controls is based on the information disclosed by managers. This stresses the importance of disclosing information on internal controls to enable investors to evaluate to what extent managers' actions and decisions are in line with their own interests. Most public policy documents on corporate governance and national codes of corporate governance reflect the view that disclosing information on internal controls is important (e.g., Deumes & Knechel, 2008; Van de Poel & Vanstraelen, 2011). Yet, outside the United States the nature of corporate governance codes makes reporting on internal controls largely voluntary, i.e. managers have discretion with respect to disclosing information on the firm's internal controls. The question, then, is what drives managers' decisions to voluntarily disclose this type of information.

To answer this question, we begin by introducing the agency theory framework. Standard agency theory frames agency relations and problems in terms of conflicts between managers (agents) and shareholders (principals). Managers take decisions to support their own interests that are not necessarily in the shareholders' interests. Furthermore, as managers have superior information, it is not always possible for shareholders to effectively detect and limit such behavior. As discussed, this also applies to internal controls: while internal controls can protect the interests of shareholders, they are within-firm phenomena and, thus, managers possess superior information about these controls. Various solutions have been proposed to resolve agency conflicts. One of them is the voluntary disclosure of information to reduce the information asymmetry between managers and shareholders (e.g., Healy & Palepu, 2001). From shareholders' perspective, higher levels of internal control disclosure reduce information risk. To the extent that investors are reassured by disclosures that the internal controls provide reliable information, they require a lower return, implying a lower cost of capital to the firm (e.g., Ashbaugh-Skaife et al., 2009; Campbell et al., 2014; Dhaliwal et al., 2011; Verrecchia, 2001). At the same time, higher levels of disclosure enable shareholders to more closely monitor managers, thus disciplining the managers. This is expected to result in fewer agency problems resulting from managerial actions that are not optimal for shareholders, including empire building and the avoidance of sub-optimal investment decisions (Dey, 2008).

From the manager's perspective, the decision to voluntarily disclose information is ultimately based on a tradeoff between the expected benefits and costs of disclosing (Healy & Palepu, 2001). To the manager the main benefit of

voluntarily disclosing information on the firm's internal controls is that it adds to managerial reputation building. Indeed, prior survey-based evidence (Graham, Harvey, & Rajgopal, 2005) shows that establishing a reputation for credible reporting is a key managerial motivation for voluntary disclosures. Not having a reputation for credible reporting not only reduces the effectiveness of the manager's communication efforts, it also adversely affects her reputation in the managerial labor market (Kothari, Shu, & Wysocki, 2009). As investors' perceptions of managerial competence and trustworthiness are enduring, establishing and maintaining a reputation for credible reporting may be particularly important (Mercer, 2004). Establishing a reputation for credible reporting requires disclosure of accurate and timely information as well as of information that is complete (Healy & Palepu, 2001; Mercer, 2004). This means that career concerns incentivize a manager to voluntarily disclose information, even if the information is not favorable from her point of view (e.g., information that the internal controls did not function effectively) (Campbell et al., 2014; Skinner, 1994). Indeed, the probability that a manager's private information about the existence of weaknesses in the firm's internal controls does not reach investors is small as auditors (partly) rely on (and test) the effectiveness of the firm's internal controls. Auditors will disclose this information in their audit opinion if they have to issue a qualified opinion. Hammersley et al. (2008) find a significantly negative abnormal return following a firm's announcement that the firm's internal controls were not effective, but more importantly also document that the adverse effects on returns are more pronounced when the firm's managers claim that the internal controls are effective but the independent auditor report indicates that they were not effective.

An important cost of voluntarily disclosing information on the firm's internal controls is that it may have potential legal consequences. If a manager discloses inaccurate information (i.e., information that later turns out to be incorrect) or if a manager discloses incomplete information (i.e., does not disclose information that in hindsight was value-relevant), managers could be sued, face legal liability, and owe damages (cf. Campbell et al., 2014). For example, managers claiming effectively functioning internal controls are likely to face more legal consequences if subsequently they have to restate their financial statements and indicate that the controls were ineffective. Moreover, to the extent that this leads to bad publicity, the manager will face an increased likelihood that the board of directors will fire her. This will adversely impact her reputation on the managerial labor market.

Another important cost of voluntarily disclosing information is that it may involve proprietary information. Disclosures of information on the firm's internal controls could provide competitors with information about the firm's key risks, how it manages these risks, and provide them with information on the firm's strategy (Deumes & Knechel, 2008). By disclosing this information the firm runs the risk that new competitors are attracted to enter the market and/or that existing competitors will copy the firm's strategy. Subsequently, this may damage the firm's competitive position in product markets (Healy & Palepu, 2001; Verrecchia, 2001), adversely affecting firm performance. Evidently, both shareholders and managers bear the cost of disclosing proprietary information. For shareholders, the cost of disclosing is that it reduces the firm's competitive position and, thus, adversely affects share price performance. A manager bears the cost, as a reduction of the firm's competitive position may reduce the possibility of successfully executing the strategy, which may affect both her compensation and career (Kothari et al., 2009).

The Effect of Culture and Investor Protection on Internal Control Disclosures

In order to better understand cross-country differences regarding the disclosure of information on internal controls, we draw from cross-cultural research. Culture refers to the collective programming of the mind that distinguishes members of one group from another. This definition stresses shared values, norms, beliefs, and expected behaviors that are deeply embedded, unconscious, and often irrational (Hofstede, 2001). Such shared values define what represents acceptable and/or desirable behavior within the group and accordingly can help group members make decisions and/or judge the decisions of others. As such, culture also affects managers' and shareholders' perceptions of agency problems (e.g., Chui, Lloyd, & Kwok, 2002; Fidrmuc & Jacob, 2010) and thus, ultimately, drives disclosure choices.

As indicated, standard agency theory frames agency relations and solutions to these problems in terms of conflicts between managers and shareholders. Yet, the nature and characteristics of agency conflicts may be culturally determined, such that they take on different characteristics and are accepted and legitimate in different cultural settings. Thus, culturally determined views about what is legitimate or not establish different preferences for the behavior of managers versus shareholders of a firm. Consequently, this may lead to different views on how to address agency problems across countries (Fidrmuc & Jacob, 2010; Shao et al., 2010; Wiseman et al., 2012). In the context of our study, the extent to which managers choose to disclose information voluntarily, and the related tradeoff of the costs and benefits of such disclosures, may depend on the cultural values that drive individual managers' values, preferences, and behaviors. Consistent with prior research (e.g., Bryan, Nash, & Patel, 2012; Han et al., 2010; Hope, 2003; Kanagaretnam, Lim, & Lobo, 2014), we consider two cultural dimensions identified by Hofstede (2001) namely: individualism and uncertainty avoidance. We focus on these two dimensions because they have the most clear implications for managers' choice behaviors and comprise the most often studied cultural dimensions in corporate governance research (e.g., Han et al., 2010; Hope, 2003). Furthermore, as we explicate in more detail below, these two dimensions affect the extent to which agency problems are exacerbated or attenuated in a country. They have the most clear implications for the relationship between managers and shareholders, suggesting that the two dimensions are likely to affect the managerial tradeoff between the costs and benefits of disclosing information on internal controls.

Individualism indicates a preference for a loosely knit social framework in a society in which individuals focus on themselves rather than on the group to which they belong.

In contrast, collectivism indicates a preference for a tightly knit social framework in a society in which individuals focus on the group rather than on themselves. In individualistic societies, decisions based on individual needs tend to prevail. This type of behavior can largely be attributed to how people view themselves and how they pursue self-esteem. In individualistic societies an independent self-construal prevails involving a "conception of the self as an autonomous, independent person" (Markus & Kitayama, 1991: 226). People having an independent self-construal tend to have a worldview that centralizes the person, involving a focus on achieving personal goals, personal success, and personal uniqueness (Oyserman, Coon, & Kemmelmeier, 2002). Moreover, research suggests that "[p]eople participating in individualistic cultures will stand to fare well by viewing themselves as competent and talented" (Heine & Hamamura, 2007: 22). Hence, in individualistic societies people are less focused on group interests, but instead focus much more on personal achievement. The opposite is true in collectivistic societies, i.e. in these societies people are more focused on group rather than personal interests.

Since in individualistic societies personal goals and values prevail, individuals in these societies have a strong need to view themselves as competent and talented (Heine & Hamamura, 2007). Consequently, it can be expected that for managers in individualistic societies managerial reputation building and career concerns may be particularly important. That is, we expect that in individualistic societies managers' cost-benefit analysis of voluntarily disclosing information on internal controls will be particularly focused on the effects on her reputation in the managerial labor market (Campbell et al., 2014; Kothari et al., 2009). To establish a reputation for credible reporting, the manager will need to disclose credible and complete information (Healy & Palepu, 2001; Mercer, 2004). This means that a manager has incentives to voluntarily disclose information, even if the information disclosed is not favorable from the manager's point of view (Campbell et al., 2014; Skinner, 1994).

Moreover, the emphasis on personal goals in individualistic societies is likely to exacerbate agency problems resulting from conflicting interests between managers and shareholders (Bryan et al., 2012; Shao et al., 2010). Consequently, shareholders demand more voluntary disclosure of information on the firm's internal controls as this enables them to more closely monitor managers. Managers would volunteer to provide the disclosure, because they perceive that shareholders value it highly and demand it from the managers. In collectivistic societies, however, agency problems are attenuated as collectivism dictates cooperation and consideration of others (Hofstede, 2001). Hence, in collectivistic societies shareholders do not value internal controls so much and, consequently, managers do not volunteer to offer to disclose information on internal controls.[3]

Collectively, the above arguments suggest that the level of voluntary internal control disclosures will be higher in individualistic societies than in collectivistic societies. Formally:

Hypothesis 1. Individualism (collectivism) is positively (negatively) associated with the amount of information on internal controls firms voluntarily disclose in their annual reports.

Uncertainty avoidance is the degree to which members of a society feel uncomfortable with uncertainty and ambiguity (Hofstede, 2001). In societies with high uncertainty avoidance scores, members prefer to avoid dealing with uncertainty, ambiguity, and unstructured situations. They are critical of change, assign high value to predictability, and prefer risk-averse behavior. In contrast, in societies characterized by low uncertainty avoidance, people have much less problems dealing with uncertainty and ambiguity. They are more open to accept change, attach less value to predictability, and generally are more ready to take risks. Moreover, Bryan et al. (2012) suggest that cultures with lower uncertainty avoidance are more accepting of competition and more comfortable with conflict and confrontation.

In terms of our cost-benefit tradeoff framework, uncertainty avoidance is likely to have an impact on the level of perceived costs in general, and proprietary costs and legal costs in particular. More specifically, managers in societies that prefer to avoid uncertainty are likely to stress the costs rather than the benefits of voluntary disclosures. Indeed, managers' emphasis on the potential costs of their decisions is in line with empirical research which not only shows that people prefer to avoid losses rather than acquire benefits (Tversky & Kahneman, 1991), but also that this loss aversion tendency is stronger in more uncertainty avoidant cultures (Arkes, Hirshleifer, Jiang, & Lim, 2010; Bryan et al., 2012; Li, Griffin, Yue, & Zhao, 2013). As indicated, managers from societies characterized by high uncertainty avoidance are less inclined to accept competition and less comfortable with conflict and confrontation (Bryan et al., 2012). In line with the idea that voluntary disclosures may reveal proprietary information which potentially attracts new competitors to enter the market and/or existing competitors copying the firm's strategy, managers from societies characterized by high uncertainty avoidance may be inclined to limit voluntary disclosure of information on internal controls. Moreover, managers from uncertainty avoidant societies may be reluctant to voluntarily disclose information, because they fear possible legal consequences if they disclose information on the firm's internal controls that later turns out to be incorrect (Graham et al., 2005). The negative association between uncertainty avoidance and voluntary disclosure is also consistent with Gray's (1988) model. This model suggests that transparency is negatively associated with uncertainty avoidance, which creates a preference to restrict information disclosures to avoid conflict and competition and preserve security.

Uncertainty avoidance also influences how economic agents in a society cope with uncertainty. This may affect mechanisms that help mitigate agency problems. Specifically, as people in high uncertainty avoidant societies respond to uncertainty by requiring additional mechanisms that help them cope with the uncertainty (Hofstede, 2001), it is likely that shareholders in these societies require managers to set up additional bonding mechanisms, which may substitute for the information on the firm's internal controls. Hence, in high uncertainty avoidant societies disclosure is not valued and demanded so strongly by shareholders. Less uncertainty avoiding societies, however, do not have the extra mechanisms that would substitute for disclosure and so shareholders rely more on disclosure.[4]

Collectively, the above arguments suggest that the level of voluntary internal control disclosures will be lower in high uncertainty avoidant societies than in low uncertainty avoidant societies. Formally:

Hypothesis 2. High uncertainty avoidance is negatively associated with the amount of information on internal controls firms voluntarily disclose in their annual reports.

A widely accepted view stresses that the severity and nature of agency problems also vary with investor protection. As La Porta, López-de-Silanes, and Shleifer (1998) show, protection of (minority) shareholders' interests differs across the world, and the level of investor protection is a key institutional determinant of firm policy choices. Empirical evidence indicates a negative association between the level of investor protection and insiders' propensity to conceal their activities, either through earnings management (e.g., Doupnik, 2008; Han et al., 2010; Leuz, Nanda, & Wysocki, 2003) or limited voluntary disclosures via annual reports (e.g., Bushman, Piotroski, & Smith, 2004; Francis, Nanda, & Olsson, 2008a; Gaio, 2010). Thus, if investor protection is strong (weak), firms should have more (less) incentives to voluntarily disclose information on their internal controls. In line with prior studies, we predict:

Hypothesis 3. Investor protection is positively associated with the amount of information on internal controls firms voluntarily disclose in their annual reports.

At the same time, however, researchers recently have argued that institutional settings may differ between countries because of different national cultures. In his discussion of different levels of social analysis, Williamson (2000) suggests that informal institutions such as customs, traditions, and norms (i.e., culture) are at "level 1," whereas formal institutions such as law and property rights are at "level 2." Governance structures of firms are part of "level 3" institutions. In his model, higher levels of institutions impose constraints on the development of the levels immediately below. Licht et al. (2005: 233) argue that cultural values not only put constraints on the development of formal institutions; they also "serve as sources of motivation and justification of alternative formal institutions." According to this view, national culture influences the content of formal institutions. Empirical evidence for this notion is provided by Licht et al. (2005, 2007). Stulz and Williamson (2003) also show that differences in culture are correlated with differences in investor protection across countries. Combining the literature underlying hypotheses 1 and 2 with the literature related to hypothesis 3, we argue that culture has both a direct and an indirect effect (through its effect on the design and development of formal institutions, such as investor protection) on firm-level decisions such as voluntary disclosure of information on internal controls. Thus, investor protection mediates the association between national culture and the amount of information on internal controls firms voluntarily disclose in their annual reports. Below we address these indirect effects on internal control disclosures, via investor protection, of individualism and uncertainty avoidance, respectively.

We propose that the effect of individualism on the levels of internal control disclosures is also brought about via investor protection. Licht et al. (2005: 236) argue that investor protection will be strong in individualistic societies, because individualism "legitimizes the vigorous pursuit of personal interests rather than deference to others' decisions and interests." This calls for stronger formal protection of the rights of individuals, including those of investors. In a similar vein, Haxhi and Van Ees (2010) indicate that protection of shareholders' interests is particularly necessary in a setting in which individuals attempt to satisfy their own interests. We also conjecture that greater investor protection is associated with higher levels of voluntary disclosure as this helps to reduce the possibility that managers extract rents at the cost of the shareholders and, thus help mitigate agency problems (e.g., Han et al., 2010). In line with the above arguments, we posit that culture affects the amount of information on internal controls disclosed in annual reports indirectly, through the development of institutional systems. Thus, we hypothesize:

Hypothesis 4a. Stronger investor protection positively mediates the direct positive association between individualism and the amount of information on internal controls firms voluntarily disclose in their annual reports.

Moreover, managers in highly uncertainty avoidant societies stress the costs rather than the benefits of voluntary disclosure, so to mitigate these costs they prefer to limit disclosure of information on internal controls. At the same time, since in highly uncertainty avoidant societies shareholders require other mechanisms to cope with uncertainty resulting from agency problems, disclosure is not valued and demanded so strongly by shareholders. A study by Licht et al. (2005) suggests that at the country level, investor protection will be low in uncertainty avoidant societies, because members of these societies avoid dealing with uncertainty, which "is consistent with giving power to authorities who control uncertainty and with perceiving conflict in the corporation as unnatural" (Licht et al., 2005: 236). In such an environment, there is less need for the development of formal investor protection rights. If, in uncertainty avoidant societies, shareholders' interests are poorly protected – which implies that (minority) shareholders can exert less pressure on insiders – managers have sufficient power and incentives to limit their voluntary disclosure of information on internal controls. The amount of information disclosed on internal controls then declines even more. In contrast, when shareholders' interests are well protected, the pressure to voluntarily provide information on internal controls to outsiders increases, i.e. incentives to limit voluntary disclosure are weaker. Thus, we hypothesize:

Hypothesis 4b. Stronger investor protection negatively mediates the direct negative association between uncertainty avoidance and the amount of information on internal controls firms voluntarily disclose in their annual reports.

DATA AND METHODS

Sample and Data Collection

For this study, we manually collect information about disclosure practices of listed firms from 29 countries during the

years 2005–2007. We exclude the United States, where SOX legally mandates that listed firms to report on their internal controls. Basically, we follow a convenience sampling approach to select countries that are culturally diverse in terms of the scores on Hofstede's cultural dimensions. Moreover, we make sure that our sampled countries are diverse in terms of investor protection and economic development (based on gross domestic product and total market capitalization levels).

To sample firms from each of the 29 countries, we start by identifying all non-financial firms in the 29 countries included in Compustat Global as of 2005 for which all necessary financial statement variables are available. The number of firms in Compustat Global per country varies, so we use a stratified approach to select firms within each country. Specifically, we select 15 large firms (typically blue chip firms) from each country, and then randomly add more firms until we have 10 percent of the total number of firms listed in that country for which data is available in Compustat Global. (The only exception is Japan, for which we gathered data for about 8 percent of the firms covered by Compustat Global.) Consequently, our sample contains different numbers of firms for each country. At the same time our sample includes both small and medium-sized firms. We purposefully aim to include both large and small or medium-sized listed firms to limit potential size biases, as prior studies find a positive association between firm size and level of disclosure (e.g., Ahmed & Courtis, 1999).

For each firm, we obtain three annual reports, corresponding to the fiscal years 2005, 2006, and 2007. If a firm was delisted after 2005, we include the annual report(s) of another firm of similar size (measured by total assets). The rationale for replacing annual reports is that we aim to apply our stratified approach as consistently as possible. This procedure yields a sample of 4,370 firm-year observations for 1,559 distinct firms. For 1,383 firms (about 90 percent of the final sample), we have data for all three years. Table 1, Panel A, contains the breakdown of the sample by country.

We use the exchange rate data from Compustat Global Currency to translate total assets (our firm size measure) into Euros (using the closing rate). All other data are from the firms' annual reports.

Dependent Variable: Internal Control Disclosure

Prior voluntary disclosure studies generally rely on the disclosure index developed by CIFAR (the Center for International Financial Analysis and Research); a disclosure index that only covers *financial* information (i.e., the presence of specific items on the balance sheet items, the income statement, and the cash flow statement). Despite its extensive use, the CIFAR disclosure index has at least one important drawback from a cross-cultural perspective, namely that it comprises both mandatory and voluntary financial disclosure items. Consequently, these analyses cannot differentiate between the possibility that cross-national differences found in these studies are the result of differences in countries' disclosure requirements versus the possibility that these differences result from differences in individual actors' behaviors and perceptions of agency problems. In our study we rely on unique, hand-collected data on internal control disclosures, which is voluntary and, thus, reflects how culturally determined social norms affect the cost-benefit tradeoff individual managers make in their disclosure choices.

Only very few studies have looked at internal control disclosures. These studies use self-constructed disclosure indices. We follow prior research in this field and construct our own internal control disclosure index (ICDisc). With the large number of firm-year observations we have, we opt for a disclosure index that is limited in number of items but captures information that provides a broad overview of the firm's internal controls. Specifically, the construction of ICDisc involves three steps that are outlined below.

In the first step we select the items to be included in our internal control disclosure index. Whereas the Sarbanes-Oxley Act has an extremely narrow perspective on internal controls and focuses on safeguarding the reliability of financial reporting (Ashbaugh-Skaife et al., 2007; Deumes & Knechel, 2008; Doyle et al., 2007; Schneider et al., 2009; Van de Poel & Vanstraelen, 2011), the perspective adopted in other countries is much wider and tends to follow the influential COSO framework (1992). As indicated in the literature review section, COSO (1992) suggests that internal controls encompass a number of components, namely: the control environment, risk assessment, control activities, and monitoring. Below we discuss how we include each of these building blocks into our internal control disclosure index (ICDisc) which consists of seven separate items. The full disclosure index is shown in the Appendix.

According to COSO (1992) the control environment is the attitude toward internal control established and maintained by management. A crucial signal, both internally and externally (e.g., outside investors), is whether management assumes responsibility for the firm's internal controls system (item 4 of ICDisc). Risk assessment is the identification and analysis of risks that may affect the degree to which the firm's objectives can be achieved (COSO, 1992). Assessing risks involves identifying the firm's key risks as this enables managers to determine how the risks should be managed. Moreover, informing investors on the key risks, helps them to make their own assessment of the firm's risks and whether or not to (continue to) invest in the firm. In line with prior research (e.g., Abraham & Cox, 2007; Linsley & Shrives, 2006) we include three key types of risk: strategic and operational risk, financial risk, and financial reporting risk (items 1, 2, and 3 of ICDisc, respectively). Control activities are the policies and procedures that help ensure that necessary actions are taken to address the risks that may impair the achievement of the firm's objectives (COSO, 1992). Providing information on how the firm has taken measures to deal with the firm's key risks, for instance in the form of the approach or framework followed to design the firm's internal controls (item 6 of ICDisc) and in terms of specific internal control measures (item 5 of ICDisc), helps ensure that investors are aware (and can judge the adequacy) of the measures taken to deal with the firm's key risks. Lastly, monitoring of internal controls involves a process that assesses the quality of the firm's internal controls (COSO, 1992). Moreover, the outcome of this monitoring process, for instance in the form of internal control deficiencies (item 7 of ICDisc), should be reported to management and the board,

TABLE 1
Variable Definitions

Variables	Description
Dependent variable	
ICDisc	ICDisc measures the extent to which managers voluntarily report on internal controls. The index captures seven separate items, which we discuss and explain in the Appendix. Values of ICDisc range from 0 (no items disclosed) to 7 (all items disclosed).
Country-level variables	
IDV	Country-level individualism score based on Hofstede (2001). A higher (lower) score reflects a culture that is relatively more individualistic (collectivistic).
UAI	Country-level uncertainty avoidance score based on Hofstede (2001). A higher score reflects a culture that is relatively more uncertainty avoidant.
INVP	Country-level proxy for investor protection based on the anti-director rights index (ADRI) measure developed by Djankov et al. (2008). Generally speaking, the ADRI measure denotes the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights).
GDP	GDP is the log of gross domestic product per capita (GDP) (in €). Data on GDP is from the World Bank.
STKDVLP	The level of stock market development is proxied by a composite measure similar to Francis et al. (2008b) and Shao et al. (2010). A higher value on STKDVLP implies a more developed stock market. Data on STKDVLP is from the World Bank.
SICPS	Country-level institutional collectivism as identified by the GLOBE project (House et al., 2004). This variable is used as alternative for Hofstede's individualism in a sensitivity check.
SIGCPS	Country-level in-group collectivism as identified by the GLOBE project (House et al., 2004). This variable is used as alternative for Hofstede's individualism in a sensitivity check.
UASP	Country-level uncertainty avoidance also emerged from the GLOBE project (House et al., 2004).
$INVP_{updated}$	Country-level variable which is an updated (and corrected) version of the ADRI developed by La Porta et al. (1998). This measure is taken from Spamann (2010).
DISCREQ	This index is taken from Djankov et al. (2008) and captures prospectus, compensation, shareholders, inside ownership, and transaction disclosures. It reflects mandated disclosure rules and is used in a sensitivity check.
Firm-level variables (updated annually)	
SIZE	SIZE equals the natural logarithm of the firm's total assets (in €).
SGROWTH	SGROWTH equals the firm's year-on-year sales growth.
BIG4	Indicator variable that equals 1 if the firm is audited by one of the Big 4 audit firms (Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers) and 0 otherwise.
USLIST	Indicator variable that equals 1 if the firm's shares are cross-listed in the United States and 0 otherwise.
Sector dummies	CONSUMER, MANUFACTURING, HI-TECH, and HEALTH CARE are sector dummies that take the value of 1 if the firm is active in the sector and 0 otherwise. In the regression analyses, OTHER is the hold-out group.
Year dummies	Y2005 (Y2006) represents a year dummy that take the value of 1 if the annual report is from fiscal year 2005 (2006) and 0 otherwise. In the regression analyses fiscal 2007 is the hold-out group.

and ultimately to the firm's investors, as this helps them evaluate whether the objectives regarding the effectiveness and efficiency of the firm's operations, the reliability of financial reporting, and compliance with applicable laws and regulations are attainable. As indicated, many prior US-based studies (e.g., Schneider et al., 2009) solely focus on this item (and, specifically, the disclosure of weaknesses of internal controls over financial reporting). Outside the US the opinion on the effectiveness of internal controls encompasses more than just internal controls over financial reporting.

In the second step, we examine annual reports to identify the presence or absence of each disclosure item. We confine ourselves to information in annual reports to increase comparability with prior studies and because annual reports are a key source of information for investors. Moreover, we limit

ourselves to the narrative portion of the annual report and exclude mandated financial statements or notes. This choice reflects that most information on internal controls appears in the unregulated, narrative portion (e.g., Deumes & Knechel, 2008; Van de Poel & Vanstraelen, 2011). Furthermore, by confining ourselves to the unregulated, narrative portion, we ensure that our disclosure index reflects our theoretical arguments regarding the cost-benefit tradeoff managers make.

In the third and final step, we assign firms one point for the presence of each item in their annual reports. The extent of internal control disclosure is the sum of these scores. Each item is equally weighted, because user preferences are not known (again consistent with prior research). The resulting ICDisc index measures the extent to which management voluntarily reports on internal controls, with values ranging from 0 (no items disclosed) to 7 (all items disclosed). We assessed the reliability of our internal control disclosure measure by calculating Cronbach's alpha, which tests the internal consistency of the seven-item scale we used to measure internal control disclosures. The results of the analysis show that for the entire data set, the Cronbach's alpha value is .7, which indicates that our measure is internally consistent and can be applied in the research. Table 1 provides variable definitions.

Independent Variables

Culture. Similar to prior studies (e.g., Han et al., 2010; Jaggi & Low, 2000; Zarzeski, 1996), we use Hofstede's (2001) scores to represent each country's cultural values. Hofstede's scores are the most widely used measures of national culture and have produced a widely accepted, well-defined, empirically based terminology to characterize culture. In addition, Hofstede's cultural dimensions are based on research within a business organization, which makes them appropriate for our study of business practices, i.e. voluntary internal control disclosure. In this analysis we include individualism (IDV) and uncertainty avoidance (UAI).

Investor Protection. In line with Engelen and Van Essen (2010) and Boulton, Smart, and Zutter (2011), our proxy for investor protection is the anti-director rights index (ADRI) measure developed by Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008). Generally speaking, the ADRI measure denotes the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights). The coefficient for investor protection (INVP) should be positive, because we anticipate higher disclosure levels for countries with stronger investor protection environments.

Country-Level Characteristics. We include two country-level variables that might be associated with firm-level internal control disclosure: the level of stock market development and the level of economic development. In countries with more developed stock markets, firms rely more on external funds to finance their activities. Moreover, prior research demonstrates that in countries with a developed stock market the demand for high-quality, voluntary disclosures is high (Ball, Robin, & Wu, 2003; Gaio, 2010). The level of stock market development is proxied by a composite measure similar to Francis, Khurana, Martin, and Pereira (2008b) and Shao et al. (2010) (STKDVLP). Specifically, STKDVLP equals the sum of the standardized values of (1) total market capitalization over gross domestic product, (2) total value traded over gross domestic product, and (3) the total value traded over total market capitalization. A higher value on STKDVLP implies a more developed stock market. Prior research also shows that economic development affects accounting quality (e.g., Gaio, 2010). Therefore, we include the log of gross domestic product per capita (GDP) into our analysis. Data on STKDVLP and GDP is from the World Bank.[5]

Firm-Level Characteristics. We include several firm-level variables considered in the literature to be associated with voluntary disclosure in general, and voluntary disclosure on internal controls in particular. First, we control for firm size as prior studies show that firm size matters when examining voluntary disclosure (e.g., Ahmed & Courtis, 1999). We measure firm size as the natural logarithm of the firm's total assets (SIZE). Second, we include the firm's year-on-year sales growth (SGROWTH) as faster growing firms face more inherent risk, which may increase management's incentive to report on internal controls (e.g., Ashbaugh-Skaife et al., 2007; Doyle et al., 2007). Third, we include a dummy variable that equals 1 if the firm is audited by one of the Big 4 audit firms and 0 otherwise (BIG4). Prior studies have suggested that being audited by a Big 4 audit firm is associated with higher financial reporting quality (e.g., Ashbaugh-Skaife et al., 2007). Fourth, we control for US listing status (USLIST); when firms cross-list in the United States, they commit to the strict US disclosure requirements (Doidge, Karolyi, & Stulz, 2007). We measure US listing as a dummy variable that equals 1 if the firm's shares are cross-listed in the United States and 0 otherwise. Fifth, we include year and industry dummies to control for the time-series and cross-sectional differences in internal control disclosures. We use industry dummy variables based on the five-sector classification model by Fama and French (consumer, manufacturing, high-tech, health care, and other). These dummy variables are equal to 1 if a firm belongs to a particular industry and 0 otherwise. The hold-out group was the "other" category.

Statistical Analysis

Our empirical model to analyze the association between culture and investor protection on the one hand and the amount of internal control disclosure on the other is as follows:

$$\begin{aligned} \mathrm{ICDisc}_{i,j,k} = {} & \beta_0 + \beta_1 \cdot \mathrm{IDV}_k + \beta_2 \cdot \mathrm{UAI}_k + \beta_3 \cdot \mathrm{INVP}_k + \beta_4 \cdot \mathrm{GDP}_k \\ & + \beta_5 \cdot \mathrm{STKDLVP}_k + \beta_6 \cdot \mathrm{SIZE}_{i,j,k} + \beta_7 \cdot \mathrm{SGROWTH}_{i,j,k} \\ & + \beta_8 \cdot \mathrm{Y2005}_{i,j,k} + \beta_9 \cdot \mathrm{Y2006}_{i,j,k} + \beta_{10} \cdot \mathrm{BIG4}_{i,j,k} \\ & + \beta_{11} \cdot \mathrm{USLIST}_{i,j,k} + \sum \beta_{12} \cdot \mathrm{SECTOR}_{i,j,k} + \varepsilon_{i,j,k} \end{aligned} \quad (1)$$

where $\mathrm{ICDisc}_{i,t,\,k}$ = the level of internal control disclosure of firm i for year j in country k; $\varepsilon_{i,j,k}$ is the error term; and all other variables are defined in Table 1.

The number of firms per country range from 9 in Taiwan to 175 in Japan. Therefore, we employ a weighted least squares (WLS) regression where the weight is inversely proportional to the number of observations per country. Using WLS ensures that uneven country representation in the sample will not bias the results towards countries that are more heavily represented (Han et al., 2010). We report Huber-White robust standard errors.

To determine whether an indirect effect of individualism and uncertainty avoidance on internal control disclosures through investor protection exists, we used the so-called *M*-test (MacKinnon, Lockwood, & Williams, 2004).[6] Specifically, we utilized the program PRODCLIN (available at: http://www.amp.gatech.edu/RMediation) (MacKinnon, Fritz, Williams, & Lockwood, 2007), which facilitates obtaining confidence levels for indirect effects. Comparable to a Sobel test, the program requires information on the desired significance level, the estimated coefficient regarding the relation between the relevant cultural dimension and investor protection, the estimated coefficient regarding the relation between investor protection and ICDisc, and the standard errors for the estimated coefficients. If the confidence interval does not include zero, given a significance level, an indirect or mediated effect is present.

RESULTS

Descriptive Analysis

In Table 2, Panel A, we provide information pertaining to our dependent variable, ICDisc, at the country level. The mean value of the index is 3.64. We also note extensive heterogeneity between countries with respect to the mean value of the index. We present the descriptive statistics with respect to firm- and country-level determinants in Table 2, Panel B. The average firm has total assets of approximately €4.5 billion and experienced an annual sales increase of 51 percent from 2005 to 2007. Furthermore, 77 percent of all sampled firms have been audited by one of the Big 4 audit firms. Nine percent of the firms have shares cross-listed in the United States.

Table 3 shows the correlations between the dependent and independent variables. In a few cases, the correlation coefficient between independent variables is greater than |.6|, which may indicate possible multicollinearity issues. In particular, the correlation between individualism and investor protection ($r = .53$) is relatively high, which is consistent with prior studies (Hofstede, 2001; Licht et al., 2005). Moreover, and also consistent with prior research, we observe high correlation coefficients between, on the one hand, GDP per capita and investor protection ($r = .78$) and individualism ($r = .54$) on the other. Finally, the correlation between stock market development and investor protection ($r = .53$) is relatively high; again this is consistent with prior research. To reduce concerns about multicollinearity, we obtained variance inflation factors (VIFs); these VIFs were all less than 3, and the average VIF in all analyses was less than 1.5; indicating that multicollinearity should not be problematic.

The Direct Effect of Culture and Investor Protection on Internal Control Disclosures (H1–H3)

In this sub-section, we empirically analyze the direct effect of culture and investor protection on internal control disclosures. Table 4 presents the coefficients and Huber-White robust standard errors (in parentheses) from WLS regressions where the weight is inversely proportional to the number of observations per country. (We also ran these regressions for the 1,383 firms for which we have data for all three years. The results remain unchanged.) In columns (1), (2), and (3) we present analyses that include our set of firm-level controls and IDV, UAI, and INVP, respectively. In column (1), we find a significantly positive association ($\beta = .00$, $p < .01$) between IDV and ICDisc. This finding lends support to hypothesis 1 and suggests that managers from individualistic countries have a greater incentive to voluntarily disclose information on internal controls than do managers from collectivistic countries. Furthermore, and in support of hypothesis 2, in column (2) the association between uncertainty avoidance and ICDisc is significantly negative ($\beta = -.02$, $p < .01$), which suggests that managers in more uncertainty avoidant countries are more likely to focus on the reputational and proprietary costs of internal control disclosures and, consequently, disclose lower levels of information on internal controls. In support of hypothesis 3, in column (3) we find higher disclosure levels for countries with stronger investor protection ($\beta = .39$, $p < .01$). This result is consistent with prior evidence that financial reporting quality is positively associated with the level of investor protection (e.g., Bushman et al., 2004; Francis et al., 2008a; Leuz et al., 2003).

In the next set of regressions (i.e., columns (4)–(8) in Table 4) we assess the joint effect of culture, investor protection, and other institutional characteristics on internal control disclosures. First, column (4) includes both IDV and INVP, while column (6) also includes GDP and STKDVLP. Reinforcing the evidence regarding hypothesis 1, the results reported in these columns indicate that the association between IDV and ICDisc is significantly positive ($\beta = .00$, $p < .01$). Second, in columns (5) and (7) we present the results regarding UAI. Again, the association between UAI and ICDisc is significantly negative ($\beta = -.01$, $p < .01$) confirming hypothesis 2. Column (8) in Table 4 reports the results of a regression that includes all variables. The results corroborate our prior conclusion regarding the association between IDV and UAI on the one hand and ICDisc on the other. Lastly, in all analyses (i.e., columns (4)–(8) in Table 4), in line with hypothesis 3, we find a significantly positive association between INVP and ICDisc ($\beta = .11$ to $.41$, $p < .01$).

The results regarding our firm-level control variables remain relatively stable throughout the various analyses. Specifically, and in line with prior research (e.g., Ahmed & Courtis, 1999; Ashbaugh-Skaife et al., 2007; Deumes & Knechel, 2008), we find positive associations between ICDisc and SIZE, BIG4, and USLIST (all $p < .05$). There is also some evidence that SGROWTH and ICDisc are positively associated in line with the idea that as faster growing firms face more inherent risk, managers have more incentives to disclose information on the firm's internal controls (e.g., Ashbaugh-Skaife et al., 2007; Doyle et al., 2007). Moreover,

TABLE 2
Descriptive Statistics

Panel A: Dependent variable (ICDisc) per country

Country	Number of firm-year observations	Number of firms	Mean	Median	SD	Min	Max
Australia	224	79	4.48	5.00	1.34	.00	7.00
Austria	45	15	3.09	3.00	1.00	1.00	5.00
Brazil	140	53	2.96	3.00	1.75	.00	7.00
Czech Republic	37	15	3.35	3.00	1.23	.00	6.00
Denmark	126	45	3.79	4.00	1.06	.00	7.00
Finland	135	45	3.08	3.00	1.05	.00	5.00
France	227	81	3.89	4.00	1.84	.00	7.00
Germany	274	92	3.83	4.00	1.23	.00	7.00
Greece	135	46	2.53	3.00	.96	.00	5.00
Hungary	45	15	2.67	3.00	1.23	.00	6.00
India	175	59	3.55	4.00	1.52	.00	7.00
Indonesia	143	59	3.35	3.00	1.83	.00	7.00
Italy	168	61	3.48	4.00	1.19	.00	7.00
Japan	511	175	2.98	3.00	1.81	.00	7.00
Malaysia	181	65	5.56	6.00	1.33	.00	7.00
Mexico	108	43	2.13	2.00	1.52	.00	7.00
New Zealand	45	15	2.27	2.00	1.32	.00	5.00
Poland	66	32	2.48	3.00	1.19	.00	6.00
Russia	96	45	3.09	3.00	1.54	.00	7.00
Singapore	90	30	3.91	4.00	1.40	1.00	7.00
South Africa	139	53	4.03	4.00	1.31	.00	7.00
South Korea	204	74	1.85	.50	2.25	.00	7.00
Spain	89	32	3.99	4.00	1.52	.00	7.00
Sweden	150	52	4.28	5.00	1.64	.00	7.00
Switzerland	135	45	3.80	4.00	1.45	.00	7.00
Taiwan	22	9	3.41	3.00	2.02	.00	6.00
Thailand	165	52	4.40	5.00	1.29	1.00	7.00
Turkey	90	35	3.20	3.00	1.36	1.00	6.00
United Kingdom	405	137	5.07	5.00	1.48	.00	7.00
Total	**4,370**	**1,559**	**3.64**	**4.00**	**1.78**	**.00**	**7.00**

Panel B: Independent variables

	Mean	Median	SD	Min	Max
SIZE (in million €)	4,571.01	312.42	14,010.725	.26	96,010.00
SGROWTH	.51	.11	2.02	−.91	13.00
BIG4	.77	1.00	.42	.00	1.00
USLIST	.09	.00	.29	.00	1.00
CONSUMER	.24	.00	.43	.00	1.00
MANUFACTURING	.28	.00	.45	.00	1.00
HI-TECH	.14	.00	.35	.00	1.00
HEALTH CARE	.05	.00	.21	.00	1.00
OTHER	.29	.00	.45	.00	1.00
IDV	54.66	55.00	23.35	14.00	90.00
UAI	63.35	65.00	24.34	8.00	112.00
INVP	3.99	4.00	.92	2.00	5.00
GDP (per capita in €)	20,225.21	26,316.96	12,122.81	659.88	40,458.17
STKDVLP	.60	.59	2.28	−3.50	6.17

This table presents the descriptive statistics for continuous and dichotomous variables for the full sample. Panel A presents the descriptive statistics regarding the dependent variable, ICDisc, which measures the extent to which management voluntarily reports on internal controls, with values ranging from 0 (no items disclosed) to 7 (all items disclosed). Panel B presents descriptive statistics regarding the explanatory variables. SIZE is the natural logarithm of the firm's total assets (in €). SGROWTH equals the firm's year-on-year sales growth. BIG4 equals 1 if the firm is audited by one of the Big 4 audit firms (Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers) and 0 otherwise. USLIST is 1 if the firm's shares are cross-listed in the United States and 0 otherwise. CONSUMER, MANUFACTURING, HI-TECH, and HEALTH CARE are sector dummies that take the value of 1 if the firm is active in the sector and 0 otherwise. OTHER is a sector dummy that equals 1 if the firm is active in any other industry and 0 otherwise. IDV is the country-level individualism score based on Hofstede (2001). A higher (lower) score reflects a culture that is relatively more individualistic (collectivistic). UAI is the country-level uncertainty avoidance score based on Hofstede (2001). A higher score reflects a culture that is relatively more uncertainty avoidant. INVP is the country-level proxy for investor protection based on the anti-director rights index (ADRI) measure developed by Djankov et al. (2008). ADRI measures the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights). GDP is the log of gross domestic product per capita (GDP) (in €). Data on GDP is from the World Bank. STKDVLP is the level of stock market development and is proxied by a composite measure similar to Francis et al. (2008b) and Shao et al. (2010). A higher value on STKDVLP implies a more developed stock market. Data on STKDVLP is from the World Bank.

TABLE 3
Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 ICDisc	1.00													
2 SIZE	.08	1.00												
3 SGROWTH	.04	−.04	1.00											
4 BIG4	.17	.15	−.02	1.00										
5 USLIST	.08	.27	−.03	.10	1.00									
6 CONSUMER	−.00	−.08	−.02	−.01	−.02	1.00								
7 MANUFACTURING	−.05	.06	−.01	.03	−.00	−.34	1.00							
8 HI-TECH	.03	−.05	.01	−.02	.09	−.23	−.27	1.00						
9 HEALTH CARE	−.01	−.03	.03	.01	−.01	−.11	−.13	−.09	1.00					
10 IDV	.10	−.06	.02	.21	.00	−.03	.01	−.05	.09	1.00				
11 UAI	−.28	.22	−.08	−.07	.07	−.04	.08	−.02	−.06	−.16	1.00			
12 INVP	.15	−.16	.05	.19	−.11	.03	.01	.05	.06	.53	−.43	1.00		
13 GDP	.03	−.00	.01	.26	−.01	−.05	.01	.08	.04	.54	.00	.78	1.00	
14 STKDVLP	.21	−.01	.03	.06	−.03	−.02	−.05	.16	.06	.21	−.26	.53	.47	1.00

This table presents the Pearson correlation coefficients between the dependent and independent variables. Correlations greater than the absolute value of .05 are statistically significant at the 1% level; correlations greater than the absolute value of .03 are statistically significant at the 5% level. Correlations are based on weighted observations, the weight being inversely proportional to the number of observations per country. ICDisc measures the extent to which management voluntarily reports on internal controls, with values ranging from 0 (no items disclosed) to 7 (all items disclosed). SIZE is the natural logarithm of the firm's total assets (in €). SGROWTH equals the firm's year-on-year sales growth. BIG4 equals 1 if the firm is audited by one of the Big 4 audit firms (Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers) and 0 otherwise. USLIST is 1 if the firm's shares are cross-listed in the United States and 0 otherwise. CONSUMER, MANUFACTURING, HI-TECH, and HEALTH CARE are sector dummies that take the value of 1 if the firm is active in the sector and 0 otherwise. IDV is the country-level individualism score based on Hofstede (2001). A higher (lower) score reflects a culture that is relatively more individualistic (collectivistic). UAI is the country-level uncertainty avoidance score based on Hofstede (2001). A higher score reflects a culture that is relatively more uncertainty avoidant. INVP is the country-level proxy for investor protection based on the anti-director rights index (ADRI) measure developed by Djankov et al. (2008). ADRI measures the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights). GDP is the log of gross domestic product per capita (GDP) (in €). Data on GDP is from the World Bank. STKDVLP is the level of stock market development and is proxied by a composite measure similar to Francis et al. (2008b) and Shao et al. (2010). A higher value on STKDVLP implies a more developed stock market. Data on STKDVLP is from the World Bank.

the results in Table 4 suggest that compared with 2005, the amount of internal control disclosures increased significantly in 2007 ($\beta = -.27$, $p < .01$). Consistent with Ball et al. (2003), we observe that the level of stock market development (STKDVLP) and ICDisc are positively associated ($\beta = .11$ to .13, $p < .01$). Lastly, in contrast to Gaio (2010), we find a negative association between ICDisc and a country's development ($\beta = -.11$ to $-.21$, $p < .01$).

The Indirect Effect of Culture via Investor Protection on Internal Control Disclosures (H4a and H4b)

To test hypotheses 4a and 4b, which predicted that national culture also indirectly, via investor protection, influences the level of voluntary information disclosure in annual reports, we employ the *M*-test (MacKinnon et al., 2004). As outlined in the method section, we obtain confidence intervals (CI) and report them in Table 5, columns (4)–(8). If the confidence interval does not include zero, given a significance level of 90 percent, an indirect effect is present. In Table 5, Panel A includes the results for the indirect effects of individualism on ICDisc through investor protection (hypothesis 4a); Panel B includes the results for the indirect effects of uncertainty avoidance on ICDisc through investor protection (hypothesis 4b).

Table 5, Panel A provides evidence that supports hypothesis 4a. In specifications (4), (6), and (8), which build on the analyses as reported in columns (4), (6), and (8) of Table 4, the 90 percent confidence intervals do not include zero, suggesting that there is an indirect effect of individualism, via investor protection, on ICDisc. Furthermore, Table 5, Panel A shows that both the direct and indirect effects are positive. Taken together, the results in Table 5, Panel A suggest that the indirect link (via investor protection) between individualism and ICDisc is reliably nonzero and, hence, that there is an indirect or mediated link (via investor protection) between individualism and ICDisc. Moreover, the results reported in Table 5, Panel B show that, while the direct effect indicates a negative relationship between UAI and ICDisc, the indirect link (via INVP) has an opposite (i.e., positive) impact on ICDisc. Taken together, the results in Table 5, Panel B suggest that the total link between uncertainty avoidance and the ICDisc is negative, and thus that the

TABLE 4
Weighted Least Square (WLS) Regressions of Internal Control Disclosures on Culture, Investor Protection, and Control Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	2.31***	3.15***	.67**	.08	2.02***	2.68***	3.56***	3.72***
	(.26)	(.26)	(.29)	(.30)	(.31)	(.51)	(.53)	(.52)
SIZE	.03**	.07***	.05***	.06***	.07***	.04***	.06***	.06***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
SGROWTH	.03***	.02	.02**	.02**	.02	.02**	.02	.02
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Y2005	−.27***	−.27***	−.27***	−.27***	−.27***	−.27***	−.27***	−.27***
	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)
Y2006	−.10	−.08	−.09	−.08	−.08	−.09	−.08	−.08
	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)	(.07)
BIG4	.61***	.54***	.67***	.58***	.57***	.66***	.61***	.60***
	(.08)	(.07)	(.07)	(.07)	(.07)	(.08)	(.08)	(.08)
USLIST	.35***	.38***	.24**	.23**	.32***	.30***	.38***	.36***
	(.11)	(.11)	(.11)	(.11)	(.11)	(.11)	(.11)	(.11)
IDV	.00***			.00***		.00***		.00***
	(.00)			(.00)		(.00)		(.00)
UAI		−.02***			−.01***		−.01***	−.01***
		(.00)			(.00)		(.00)	(.00)
INVP			.39***	.41***	.20***	.27***	.11***	.12***
			(.02)	(.03)	(.03)	(.03)	(.04)	(.04)
GDP						−.21***	−.11***	−.18***
						(.03)	(.03)	(.03)
STKDVLP						.13***	.11***	.11***
						(.01)	(.01)	(.01)
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	4,166	4,166	4,166	4,166	4,166	4,166	4,166	4,166
R^2	.05	.13	.10	.11	.14	.14	.16	.16

This table presents the results based on Weighted Least Squares (WLS) regressions where the weight is inversely proportional to the number of observations per country. In all regression models the dependent variable is ICDisc. SIZE is the natural logarithm of the firm's total assets (in €). SGROWTH equals the firm's year-on-year sales growth. Y2005 is a dummy variable equaling one if an observation is from the year 2005 and 0 otherwise. Y2006 is a dummy variable equaling one if an observation is from the year 2006 and 0 otherwise. BIG4 equals 1 if the firm is audited by one of the Big 4 audit firms (Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers) and 0 otherwise. USLIST is 1 if the firm's shares are cross-listed in the United States and 0 otherwise. IDV is the country-level individualism score based on Hofstede (2001). A higher (lower) score reflects a culture that is relatively more individualistic (collectivistic). UAI is the country-level uncertainty avoidance score based on Hofstede (2001). A higher score reflects a culture that is relatively more uncertainty avoidant. INVP is the country-level proxy for investor protection based on the anti-director rights index (ADRI) measure developed by Djankov et al. (2008). ADRI measures the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights). GDP is the log of gross domestic product per capita (GDP) (in €). Data on GDP is from the World Bank. STKDVLP is the level of stock market development and is proxied by a composite measure similar to Francis et al. (2008b) and Shao et al. (2010). A higher value on STKDVLP implies a more developed stock market. Data on STKDVLP is from the World Bank. One-tailed tests for hypothesized effects, two-tailed for control variables. Huber-White robust standard errors are in parentheses.
***p < .01
**p < .05
*p < .10

direct impact of uncertainty avoidance dominates. Overall, on the basis of these results we accept hypothesis 4b, which stated that investor protection mediates the direct association between uncertainty avoidance and the amount of information on internal controls voluntarily disclosed in annual reports.

Sensitivity Checks

In this sub-section, we report the results of a number of sensitivity checks using alternative explanatory variables or estimation methods. The results are shown in Table 6. Panel A presents the results with respect to the direct effects (i.e.,

TABLE 5
Results Regarding the Indirect Effect of Culture, via Investor Protection, on Internal Control Disclosures

Panel A: Indirect effect of individualism on ICDisc through investor protection

		(4)	(6)	(8)
90% confidence interval	Lower bound	.022	.013	.003
	Upper bound	.028	.021	.012
Decomposition of effects	Total	.033	.026	.014
	Direct	.008	.009	.006
	Indirect	.025	.017	.008

Panel B: Indirect effect of uncertainty avoidance on ICDisc through investor protection

		(5)	(7)	(8)
90% confidence interval	Lower bound	.007	.002	.003
	Upper bound	.012	.009	.009
Decomposition of effects	Total	−.006	−.009	−.008
	Direct	−.016	−.015	−.014
	Indirect	.010	.006	.006

This table presents the results of the M-test to verify whether the indirect effect of culture (i.e., IDV and UAI, respectively) on internal control disclosures, via investor protection, is statistically significant. Using information on the estimated coefficient for the relationship between either IDV and INVP or UAI and INVP, the estimated coefficient regarding the relationship between INVP and ICDisc, and the standard errors for both coefficients, we determine the 90% confidence intervals. If the confidence interval does not include zero an indirect or mediated effect is present. Panel A presents the results regarding the indirect effect of individualism; Panel B relates to uncertainty avoidance. The numbers in parentheses (i.e., (4), (6), etc.) refer to the corresponding analysis reported in Table 4 in the column with the same number.

hypotheses 1–3); Panel B indicates whether or not a statistically significant indirect effect exists (i.e., hypotheses 4a and 4b) based on the *M*-test as explained above to obtain the 90 percent confidence interval.

First, to test the sensitivity of the analysis to our choice of cultural variables, we consider the GLOBE cultural dimensions (House, Hanges, Javidan, Dorfman, & Gupta, 2004) as alternatives to the cultural dimensions distinguished by Hofstede. Among other dimensions, the GLOBE study distinguishes an uncertainty avoidance dimension (UASP) and two collectivism dimensions: societal in-group collectivism (SIGCPS) and societal institutional collectivism (SICPS). SICPS is defined as "the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action" (House et al., 2004: 12). SIGCPS is defined as "the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families" (House et al., 2004: 12). According to House et al. (2004), the SIGCPS dimension is the most similar to the individualism dimension of Hofstede. Uncertainty avoidance is "the extent to which members of an organization or society strive to avoid uncertainty by relying on established social norms, rituals, and bureaucratic practices" (House et al., 2004: 12).

Columns (9) and (10) in Panel A of Table 6 report the results using these alternative cultural variables and reveal similar patterns with respect to our hypotheses about the direct effects of culture and investor protection on internal control disclosures. While the opposed signs for both the collectivism dimensions (SICPS and SIGCPS) and the uncertainty avoidance (UASP) dimensions may seem to contradict the results reported in Table 3 based on Hofstede, they actually confirm those results. Specifically, Hofstede's (2001) IDV and UAI and GLOBE's collectivism dimensions and UASP, respectively, have been shown to correlate *negatively* (House et al., 2004). Moreover, the 90 percent confidence intervals (as shown in Table 6, Panel B) do not include zero and, hence, suggest that there is an indirect effect of both individualism and uncertainty avoidance on ICDisc through investor protection.

Second, in columns (11) and (12), we use the ADRI measure developed by Spamann (2010) ($INVP_{updated}$) as an alternative to Djankov et al.'s (2008) measure. One disadvantage of this measure is that our sample size decreases considerably given the lower number of countries covered by Spamann (2010). Using $INVP_{updated}$ as our proxy for investor protection we still find evidence supporting the direct effects of IDV and UAI on ICDisc (see Table 6, Panel A). We only find partial support for hypothesis 3, which predicted a positive association between investor protection and ICDisc, as only in column (12) do we find a significant positive association between $INVP_{updated}$ and ICDisc (see Table 6, Panel A). Lastly, based on $INVP_{updated}$ we find support for the

TABLE 6
Sensitivity checks using alternative explanatory variables (columns 9–12) or estimation methods (columns 13–16)

Panel A: Direct effects

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Intercept	5.76***	1.59***	5.24***	4.58***	2.15	2.84*	3.85***	5.05***
	(.72)	(.53)	(.47)	(.45)	−1.67	−1.46	−1.35	−1.33
SIZE	.04***	.05***	.01	.04***	.06***	.06***	.06***	.06***
	(.01)	(.01)	(.01)	(.01)	(.02)	(.01)	(.01)	(.01)
SGROWTH	.02**	.02*	.03**	.02*	.01	.01	.00	.00
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.00)	(.00)
BIG4	.68***	.69***	.53***	.41***	.72***	.63**	.69***	.69***
	(.08)	(.07)	(.08)	(.08)	(.25)	(.25)	(.21)	(.21)
USLIST	.24**	.37***	.28**	.32***	.30*	.44***	.67***	.68***
	(.11)	(.12)	(.12)	(.12)	(.15)	(.15)	(.19)	(.19)
SICPS	−.31***							
	(.07)							
SIGCPS	−.25***							
	(.06)							
UASP		.47***						
		(.05)						
IDV			.00***		.01**		.01*	
			(.00)		(.00)		(.00)	
UAI				−.01***		−.02***		−.01***
				(.00)		(.00)		(.00)
INVP	.31***	.18***			.34**	.16*	.30**	.12
	(.04)	(.04)			(.16)	(.13)	(.14)	(.13)
$INVP_{updated}$			.04	.10***				
			(.04)	(.04)				
GDP	−.21***	−.23***	−.28***	−.17***	−.26	−.02	−.21	−.11
	(.04)	(.04)	(.03)	(.03)	(.16)	(.12)	(.12)	(.11)
STKDVLP	.13***	.11***	.17***	.13***	.09	.08	.12*	.10
	(.01)	(.02)	(.01)	(.01)	(.07)	(.07)	(.06)	(.06)
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Observations	4,129	4,129	3,721	3,721	4,166	4,166	4,166	4,166
R^2	.14	.15	.10	.13	.16	.18	.16	.18

Panel B: Indirect effects (cultural dimension → INVP → ICDisc)

IDV	Yes	–	No	–	Yes	–	Yes	–
UAI	–	Yes	–	Yes	–	No	–	No

This table presents the results of various sensitivity tests. In all regression models the dependent variable is ICDisc, which measures the extent to which management voluntarily reports on internal controls, with values ranging from 0 (no items disclosed) to 7 (all items disclosed). Panel B indicates whether an indirect effect exists (based on the 90% confidence intervals using the *M*-test). In columns (9)–(12) the results are based on WLS regressions, where the weight is inversely proportional to the number of observations per country, and we report Huber-White robust standard errors. In columns (13) and (14) the results are based on an OLS regression with robust standard errors clustered by country and firm (Gow et al., 2010). In columns (15) and (16) the results are based on Hierarchical Linear Modeling (HLM) which takes into account the nature of the data (time-series data about firms nested in different countries) and we report Huber-White robust standard errors in parentheses. SIZE is the natural logarithm of the firm's total assets (in €). SGROWTH equals the firm's year-on-year sales growth. Y2005 is a dummy variable equaling one if an observation is from the year 2005 and 0 otherwise. Y2006 is a dummy variable equaling one if an observation is from the year 2006 and 0 otherwise. BIG4 equals 1 if the firm is audited by one of the Big 4 audit firms (Deloitte, Ernst & Young, KPMG, PricewaterhouseCoopers) and 0 otherwise. USLIST is 1 if the firm's shares are cross-listed in the United States and 0 otherwise. SICPS is the country-level institutional collectivism as identified by the GLOBE project (House et al., 2004). This variable is used as an alternative for Hofstede's individualism. SIGCPS is the country-level in-group collectivism as identified by the GLOBE project (House et al., 2004). This variable is used as an alternative for Hofstede's individualism. IDV is the country-level individualism score based on Hofstede (2001). A higher (lower) score reflects a culture that is relatively more individualistic (collectivistic). UASP is the country-level uncertainty avoidance as identified by the GLOBE project (House et al., 2004). UAI is the country-level uncertainty avoidance score based on Hofstede (2001). A higher score reflects a culture that is relatively more uncertainty avoidant. INVP is the country-level proxy for investor protection based on the anti-director rights index (ADRI) measure developed by Djankov et al. (2008). ADRI measures the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights). $INVP_{updated}$ is an updated (and corrected) version of the ADRI developed by La Porta et al. (1998) and is taken from Spamann (2010). GDP is the log of gross domestic product per capita (GDP) (in €). Data on GDP is from the World Bank. STKDVLP is the level of stock market development and is proxied by a composite measure similar to Francis et al. (2008b) and Shao et al. (2010). A higher value on STKDVLP implies a more developed stock market. Data on STKDVLP is from the World Bank. One-tailed tests for hypothesized effects, two-tailed for control variables. Standard errors are in parentheses.
***p < .01
**p < .05
*p < .10

indirect effect of UAI, via investor protection, on ICDisc, but not for IDV on ICDisc (see Table 6, Panel B).

Third, although our ICDisc measure reflects information on internal controls that firms voluntarily choose to disclose (or not), it is possible that decisions to voluntarily (not) disclose information on the firm's internal controls is mainly driven by a country's institutional environment mandating more (or less) information per se. To rule out this possibility it is important to control for mandatory disclosure requirements.[7] Therefore, we include Djankov et al.'s (2008) disclosure requirement index (DISCREQ).[8] This index captures prospectus, compensation, shareholders, inside ownership, and transaction disclosures. The idea is that firms from countries with greater disclosure requirements are likely to be more transparent in their financial reporting in general, and possibly in their voluntary internal control disclosures. Accordingly, DISREQ reflects mandated disclosure rules. The inclusion of DISREQ (untabulated) as an additional country-level control variable does not affect our main inferences in a material way, except that we are unable to find support for the indirect effect of UAI, via investor protection, on ICDisc.

Fourth, to address possible endogeneity issues due to the possibility that firms with weaker internal controls (i.e., firms that have to report bad news) may be less likely to voluntarily disclose information on the firm's internal controls (e.g., Francis et al., 2008a), we use a two-stage Heckman self-selection procedure. In the first stage, we use probit estimation to model the decision to disclose information that the firm's internal controls were ineffective. In the second stage, we re-estimate the relationship between the explanatory variables and ICDisc after controlling for the inverse Mills ratios, which is calculated using the first-stage results. In the probit models, we include all firm-level control variables from our main model (i.e., firm size, sales growth, Big-4 auditor, and US-listing) and an (exogenous) instrumental variable. Within accounting research it is difficult to identify truly exogenous instrumental variables (Lennox, Francis, & Wang, 2012). In this study we choose firm age as our instrumental variable, as it is not a firm choice variable. In addition, prior research shows that firm age is associated with the likelihood that a firm has internal control weaknesses (Doyle et al., 2007). As the year in which a firm was founded is not readily available, we follow Doyle et al. (2007) and calculate firm age as the number of years the firm has data on Compustat Global. (We estimate the probit models cross-sectionally every year to compute annual inverse Mills ratios. A complete description of this research methodology, including the computation of the inverse Mills ratio, can be found in Verbeek, 2010.) The untabulated results are similar to our main analysis and confirm that IDV and UAI affect the level of internal control disclosures directly as well as indirectly via investor protection.

Fifth, to alleviate the concern that the use of WLS regressions leads to inflated parameter estimators, we re-estimate the models using ordinary least squares (OLS) regressions. We report two-way clustered-robust standard errors (Gow, Ormazabal, & Taylor, 2010). First, we cluster by country as it is likely that firms located within one country have similar disclosure practices (i.e., there may be cross-sectional dependence) (cf. Doidge et al., 2007). Moreover, because it is likely that firms' internal control disclosure practices are sticky, we cluster standard errors by firm. The results are presented in Panel A of Table 6, columns (13) and (14), and reinforce our inferences regarding the direct effects of culture and investor protection on internal control disclosures (i.e., hypotheses 1–3). Furthermore, the results of the *M*-test confirm an indirect effect of individualism on internal control disclosures (hypothesis 4a). However, we fail to find evidence (see Table 6, Panel B) that supports a statistically significant indirect effect of UAI, via investor protection, on internal control disclosures.

Finally, we apply Hierarchical Linear Modeling (HLM; Raudenbush & Bryck, 2002). By using HLM, we can simultaneously estimate country-, firm- and time-level parameters without distorting the results. Furthermore, HLM ensures that uneven country representation in the sample does not lead to biased estimates of the parameters (Raudenbush & Bryck, 2002). Our data set contains a hierarchical structure with three levels, each represented by its own regression equation. The Level-1 model estimates the relationship between the dependent variable (ICDisc) and time-varying firm characteristics (e.g., SIZE and SGROWTH). The Level-2 model estimates the effects of time-invariant firm characteristics (e.g., BIG4, USLIST and sector dummies).[9] Finally, the Level-3 model estimates the effects of the country characteristics. Consistent with prior research (e.g., Engelen & Van Essen, 2010), we apply HLM with random intercepts and fixed coefficients (i.e., the effects are assumed to be the same across time, firms, and countries). Moreover, as our main interest is in the effects of the country-level variables on ICDisc, we centered all lower level variables (i.e., time and firm levels) at the grand mean (Hofmann & Gavin, 1998).[10] The results are shown in Table 6, columns (15) and (16). We again find evidence in support of the direct and indirect effect of IDV on ICDisc (for the direct effects see Panel A; the indirect effects are shown in Panel B). Yet, while we still find evidence in support of a direct effect of UAI on ICDisc, the results reported in Table 6, Panel B fail to support an indirect effect of UAI, via INVP, on ICDisc.

CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH

The central focus of this study has been the empirical examination of the association between the national culture in which firms operate and the level of internal control disclosures. The study presents an extended view of the voluntary disclosure literature and relies on agency theory to explain how national culture affects the cost-benefit tradeoff managers make in their disclosure choices. As such, this study builds on the notion that culture affects individual actors' perceptions of agency problems, which, consequently, may drive disclosure choices. We are the first to use an agency perspective in explaining the link between culture and voluntary disclosure choices regarding information on the firm's internal controls.

Our study fits into a growing field in accounting and finance that considers the role of cross-national cultural differences in affecting financial decision making. Several previous studies have shown that national culture is associated with different aspects of corporate financial and governance

decisions, such as capital structure choices (Chui et al., 2002), dividend policies (Fidrmuc & Jacob, 2010; Shao et al., 2010), earnings management (Doupnik, 2008; Han et al., 2010), financial disclosure (e.g., Jaggi & Low, 2000; Zarzeski, 1996), CEO compensation (Bryan et al., 2012; Li et al., 2013), the composition of the board of directors (Li & Harrison, 2008), and overall firm-level corporate governance quality (Boytsun, Deloof, & Matthyssens, 2011). These studies are based on the premise that financial decision making of economic agents is embedded in the cultural setting in which interactions with other agents take place. This emerging research interest is part of a more general trend in economics and business emphasizing the important role of culture in economic transactions (Guiso, Sapienza, & Zingales, 2009).

Our unique data, which feature a sample of 4,370 firm-year observations for 1,559 firms from 29 countries for the period 2005–2007, reveal that national culture is associated with cross-national differences in the amount of information on internal controls firms disclose in their annual reports, after we control for firm characteristics. In particular, we show that the level of internal control disclosure is positively associated with individualism and negatively with uncertainty avoidance. Moreover, we provide evidence that this association between culture and voluntary internal control disclosures has a direct and indirect component, i.e. part of the impact of culture on voluntary disclosures runs through the impact culture has on molding formal institutions (i.e., investor protection), which in turn affects voluntary disclosures. We are not aware of any other study investigating both the direct and indirect effects of national culture on corporate decisions such as the level of voluntary information disclosure in annual reports.

Based on our empirical analysis, we conclude that managerial decisions to disclose information on internal controls can be understood by using an agency framework and by approaching these decisions as the outcome of a cost-benefit tradeoff made by managers. Whereas the benefits relate to reputation building, the costs are linked to the legal consequences of disclosing inaccurate and/or incomplete information and/or the costs of disclosing proprietary information, which may affect both the managerial compensation and her career. Whether the costs or benefits of disclosures prevail in managerial decision making depends on the cultural context: whereas reputation building is more important in individualistic societies, reducing costs prevails in uncertainty avoidant societies.

This study is subject to some limitations. First, we only studied listed firms, and it is unclear whether our results generalize to non-listed firms. It would be interesting to extend our research and unravel whether there are cross-national differences, as well as whether culture and the institutional environment remain important determinants also for this type of firms. Second, although our dependent variable is consistent with prior research, it is a rather crude measure of internal control disclosures. It would be interesting to extend our research by focusing on the amount and detail of information firms voluntarily disclose. Third, although we considered determinants of internal control disclosures cross-nationally, we did not examine the consequences. A potentially fruitful area for research would be to examine potential cross-national differences in the association between internal control disclosure practices and firms' cost of capital. This effort would be a natural extension of studies showing the importance of internal control disclosures for investor decisions (e.g., Ashbaugh-Skaife et al., 2009; Beneish et al., 2008; Costello & Wittenberg-Moerman, 2011; Dhaliwal et al., 2011).

Our empirical results can make an important contribution to the debate on the development and design of corporate governance practices. Accounting scandals and corporate failures in recent years, as well as the current global financial and economic crisis, have reaffirmed the importance of corporate governance practices. In particular, such scandals and crises have raised calls for improved internal controls, as well as enhanced reporting on these controls. Many of these calls are characterized by the view that there is an optimal way of developing such controls. It features prominently in codes of best practice of many countries, which have been formulated as a guidance for firms how to improve their governance in general, and internal control systems in particular. It also features in discussions among practitioners and academic researchers who often explicitly or implicitly subscribe to the view that there is an optimal governance structure for firms.

Our study shows that differences in observed corporate governance practices, such as the disclosure of information on internal controls, are influenced by cultural differences. Thus, our analysis suggests that countries with different cultural settings cope with challenges of corporate governance in different ways, because they rely on their own cultural values as much as possible (Federowicz, 2003). Changing corporate governance practices may be very difficult, because they are embedded in the national cultural environment (North, 1990). International calls for uniform best practices regarding disclosure of information on internal controls may therefore turn out be counterproductive, as there may likely be no uniform approach to tackling accounting scandals and corporate failures, given the fact that variations in culture affect actual disclosure practice. These cultural variations should be considered seriously when attempting to develop or update codes of corporate governance to improve internal control disclosures and protect investors' interests. Changing corporate governance takes time given the long-term resilience of national cultural values. These changes can only be incremental and should involve the system as a whole, rather than focusing on just one aspect such as disclosure of information on internal controls. Put differently, our findings suggest that introducing a uniform approach to demanding disclosure of (more) information on internal controls will not translate into uniform reporting practices.

ACKNOWLEDGEMENTS

We highly appreciate helpful comments and suggestions from the Editor, Praveen Kumar, Associate Editor, Huimin Chung, and two anonymous reviewers. We are also very grateful for the valuable suggestions we received from participants of the European International Business Association Conference (Porto, December 2010) and the Asia Pacific Interdisciplinary Research in Accounting (APIRA) conference (Sydney, July 2010).

NOTES

1. Although Gray's (1988) theory indicates that societal values affect accounting practices both directly and indirectly (through their influence on, for example, legal system), to the best of our knowledge, all prior studies that empirically test Gray's theory ignore the indirect link between culture and disclosure.
2. COSO (1992) identifies a fifth component, namely communication. This aspect involves effective communication both within the firm and between the firm and external parties (e.g., investors, regulators, etc.). Key aspects of effective communication include its timeliness and relevance or usefulness to its users.
3. We are indebted to one of the referees for suggesting this line of thought to us.
4. We are indebted to one of the referees for suggesting this line of thought to us.
5. As the World Bank does not cover Taiwan, we assembled this data ourselves using information from the Taiwan Stock Exchange, the Central Bank of the Republic of China (i.e., Taiwan), and the CIA World Factbook.
6. A comparable way to tease out these mediation or indirect effects would be the Sobel test. However, according to MacKinnon et al. (2004), the Sobel test can produce erroneous outcomes. While the Sobel test uses critical values from the standard normal distribution to determine confidence limits for indirect effects, the *M*-test determines the confidence limits using the distribution of the product method which does not assume normality.
7. We are indebted to one of the referees for suggesting this analysis to us.
8. The use of the CIFAR-1995 country scores (which reflect aspects of both mandatory and voluntary *financial* disclosure practices in a country) instead of DISCREQ does not materially affect our inferences.
9. Please note that we include our auditor (BIG4) and US listing dummies as firm-level (time-invariant) variables as these variables remained unchanged in our sampling period.
10. Centering or rescaling of independent variables is a customary procedure in HLM and improves the interpretability of coefficients and reduces multicollinearity issues (Hofmann & Gavin, 1998). Grand mean centering implies that the overall or grand mean of the Level-1 (and Level-2) variables is subtracted from each Level-1 (and Level-2) case (i.e., $X_{ijk} - X_{GM}$, where X_{GM} is the overall or grand mean based on all X_{ijk}).

APPENDIX

The table below presents the seven separate items of the internal control disclosure index we used to measure the amount of information on internal controls firms disclose in their annual reports.

Item	Description of item and reason why it is included in the index
1. Strategic and operational risk	Equal to 1 if the annual report discloses information with respect to strategic and operational risks. Examples of strategic and operational risks include: environment, competition, product development, health and safety, and brand name erosion.
2. Financial risk	Equal to 1 if the annual report discloses information with respect to financial risks. Examples of financial risks include: interest rate, exchange rate, liquidity, and credit risks.
3. Financial reporting risk	Equal to 1 if the annual report discloses information with respect to financial reporting risks. Examples of financial reporting risks include: impairment, pension accounting, and valuation of derivatives. Items 1 to 3 are included as COSO (1992, 2004), policy documents (FEE, 2005; IFAC, 2006) and the literature (e.g., Deumes & Knechel, 2008) indicate that good corporate governance requires managers to report on the key risks the firms faces as this helps to gain understanding of the firm's risk profile. Furthermore, these documents indicate that risks broadly can be categorized into strategic and operational risks, financial risks, and financial reporting risks.
4. Responsibility	Equal to 1 if management acknowledges explicitly its responsibility for internal control in the annual report. This item is included as COSO (1992, 2004), policy documents (FEE, 2005; IFAC, 2006), corporate governance codes and the literature (e.g., Deumes & Knechel, 2008) indicate that managers are responsible for internal control and that they should report on their responsibilities for internal control.
5. Internal control measures	Equal to 1 if the annual report discloses information with respect to the firm's activities to control risks. This item is included as COSO (1992, 2004), corporate governance codes and the literature (e.g., Deumes & Knechel, 2008) indicate that the process to identify, evaluate and manage a firm's risks is a crucial component of internal control.
6. Framework	Equal to 1 if the annual report discloses information with respect to the framework (e.g., COSO) the firm uses to design its internal control. This item is included as COSO (1992, 2004), policy documents (FEE, 2005; IFAC, 2006) and the literature (e.g., Deumes & Knechel, 2008) indicate that frameworks help to organize activities regarding identifying, evaluating, and managing risks. Furthermore, providing information on the framework helps shareholders to assess the firm's performance on internal control against certain criteria.
7. Effectiveness	Equal to 1 if the annual report presents an opinion on the effectiveness of internal control. This item is included as COSO (1992, 2004), corporate governance codes and the literature (e.g., Ashbaugh-Skaife et al., 2007; Deumes & Knechel, 2008; Doyle et al., 2007) indicate that managers should report on the effectiveness of internal controls.

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