

INTERNAL CONTROL DISCLOSURES:

A CROSS-COUNTRY STUDY ON THE EFFECTS OF NATIONAL CULTURE AND INSTITUTIONAL ENVIRONMENT

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ABSTRACT

The purpose of the present study is to empirically examine the association between, on the one hand, culture and the institutional environment and, on the other, the amount of information on internal control listed firms disclose in their annual reports. To analyze this, we use unique hand-collected data from a sample of 2,172 firm-year observations for 815 distinct firms from 25 countries for the period 2005 to 2007. The results indicate that both culture and institutional environment explain cross-national variations in the amount of information on internal control firms' disclose in their annual reports after controlling for firm characteristics. To the best of our knowledge this paper is the first to examine cultural and institutional determinants of internal control disclosure using a cross-national dataset.

Keywords – Corporate governance codes, culture, cross-national, institutional environment, internal control disclosure, voluntary disclosure

1. INTRODUCTION

A series of high-profile accounting scandals and corporate failures at the beginning of the 21st century—involving once celebrated firms such as Enron, Parmalat, Royal Ahold and Worldcom—led to worldwide calls for enhanced corporate governance. The US response to these calls for enhanced corporate governance was the Sarbanes-Oxley Act of 2002 (hereafter: SOX), which has been considered the most far-reaching securities legislation since the Securities Acts of 1933 and 1934 (Zhang, 2007). The response outside the US relied largely on self-regulation by stock exchanges and directors' and investors' associations (Aguilera & Cuervo-Cazurra, 2004). In many developed and emerging countries existing corporate governance codes (hereafter: codes) were updated or new ones developed. In a nutshell, these codes detail the system by which firms should be directed and controlled and, generally, are based on the so-called comply-or-explain principle (Haxhi & Van Ees, 2010). This comply-or-explain principle introduces flexibility and implies that, in contrast to SOX, compliance with a code is voluntary (Seidl, 2007).

Despite their differences, both SOX and the various codes emphasize the importance of effective internal control for achieving sound corporate governance (IFAC, 2006). Also, the academic literature sees internal control as an important governance mechanism (e.g., Bushman & Smith, 2001; Gillan, 2006). For instance, this is illustrated by recent research showing that weaknesses in internal control are associated with lower financial reporting quality (e.g., Ashbaugh-Skaife et al., 2008; Feng et al., 2009).

Internal control involves a process within the firm and unless the firm discloses information on its internal control, investors remain unaware of the nature, extent, and quality of the firm's internal control (Deumes & Knechel, 2008). Although research

shows that investors perceive internal control disclosures to be valuable (e.g., Hermanson, 2000), disclosing information on internal control is mandated in the US only. Outside the US, law does not prescribe reporting on internal control and the nature of the codes makes reporting on internal control to a large extent voluntary (FEE, 2005; IFAC, 2006). Otherwise stated, outside the US firm's management has a considerable discretion with respect to the amount of information on internal control they want to disclose in the firm's annual report. Consequently, there may be considerable variation not only between firms within a country, but also cross-nationally.

The purpose of the current study is, first, to analyze whether there are cross-country differences in the amount of information on internal control firms disclose in their annual reports and, second, the extent to which those differences are culturally and institutionally determined. In this respect our paper makes the following contributions to the literature. First, whereas the passage of SOX in July 2002 led to a large volume of research examining the consequences of SOX in general and of reporting on internal control in particular (e.g., Ashbaugh-Skaife et al., 2007, 2008; Doyle et al., 2007a,b; Hoitash et al., 2009), research on internal control reporting outside the US is still limited. Cross-nationally, only one paper examines internal control disclosures of 160 European firms listed in Frankfurt, London, Milan and Paris (Michelon et al., 2009). However, they do not examine the role culture plays in this type of disclosure and they rely on a relatively small sample of four countries. Second, prior research shows associations between culture and investor protection on the one hand and earnings management (Han et al., 2010), the diffusion of codes (Haxhi & Van Ees, 2010), and financial disclosure (Jaggi & Low, 2000; Hope, 2003) on the other. In this study, we extend this literature by examining the impact of

culture and investor protection on a relatively new and increasingly important form of voluntary disclosure: internal control disclosure. Lastly, we also contribute to the literature by examining the impact of voluntary codes on the extent to which firms disclose information on internal control. Although in the past two decades codes have become an important element of the institutional setting in which listed firms operate, with the exception of Nowland (2008), we are not aware of other studies that examine the impact of codes on voluntary disclosures. We intend to fill this void in the literature.

This study uses unique hand-collected data from a sample of 2,172 firm-year observations for 815 distinct firms from 25 countries for the period 2005 to 2007. The results indicate that both culture and institutional environment explain cross-national variations in the amount of information on internal control firms' disclose in their annual reports after controlling for firm characteristics. Taken together, the results of this study have potential implications for policy makers who are responsible for updating corporate governance codes. Specifically, the results of this large-scale study suggest that there is no uniform approach for tackling accounting scandals and corporate failures, but that culture and the institutional environment comprise factors policy makers have to take into account when developing or updating codes.

The remainder of the paper is structured as follows. The next section reviews previous literature and develops the study's hypotheses. This is followed by a description of the study's research design. Subsequently, the empirical results are discussed, followed by conclusions, limitations, and suggestions for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Internal control disclosures

Both practitioners and academics believe that an effective internal control system is a *sine qua non* for sound corporate governance (e.g., Bushman & Smith, 2001; Gillan, 2006; IFAC, 2006). Generally speaking, internal control is a “process [...] designed to provide reasonable assurance regarding achievement of effectiveness and efficiency of operations, reliable financial reporting, and compliance with law and regulations” (COSO, 1992: 9). COSO’s definition of internal control encompasses not only managing strategic, operational, and compliance risks, but also financial reporting risks. While most codes embrace COSO’s broad, risk-focused definition of internal control (IFAC, 2006), the US approach is relatively narrow. As is indicated in Sections 302 and 404 of SOX internal control in the US is limited to internal control over financial reporting (e.g., Doyle et al., 2007a)

Despite its importance (Hermanson, 2000), investors cannot directly observe internal control. Internal control is a process that takes place within the firm and investors are not able to obtain information themselves on the design and functioning of the firm’s internal control system. Hence, unless the firm voluntarily discloses information on its internal control, investors remain unaware of the nature, extent, and quality of the firm’s internal control system (Deumes & Knechel, 2008; Michelon et al., 2009).

The voluntary disclosure literature discusses the factors that determine management’s disclosure choices (see, for instance, Healy & Palepu (2001), Leuz & Wysocki (2008) and Beyer et al. (2009) for overviews). In general, the starting point of the voluntary disclosure literature is the assumption that managers have superior information to investors about the firm’s processes and prospects (Healy & Palepu,

2001). According to the voluntary disclosure literature the decision to voluntarily disclose information involves trading off the expected benefits and costs associated with making the disclosure (e.g., Ashbaugh-Skaife et al., 2007; Leuz & Wysocki, 2008). One expected benefit of voluntarily disclosing information to investors is that the firm's cost of capital decreases following increased disclosure (e.g., Botosan, 1997; Healy & Palepu, 2001; Francis et al., 2005).¹ More disclosure implies less uncertainty that, subsequently, lowers the rate of return investors demand. According to Deumes and Knechel (2008: 40-41) this particularly applies to internal control disclosures by arguing that this type of disclosure "can also reduce estimation risk because internal controls mitigate the threat of providing unreliable information to investors." Recent research provides some evidence that internal control disclosures affect the firm's cost of capital (Ogneva et al., 2007). A second possible benefit is that voluntarily disclosing information reduces information asymmetries between the firm and its investors, which increases the firm's stock liquidity (Leuz & Wysocki, 2008; Beyer et al., 2009).

However, voluntary disclosing information is associated with costs as well. First, information on the firm's internal control may comprise proprietary costs (Healy & Palepu, 2001; Beyer et al., 2009). By disclosing information on internal control, the firm may inform competitors on how the firm manages its key risks (Deumes & Knechel, 2008). Second, researchers point to possible reputational and legal consequences when the firm discloses information on internal control that later turn out to be incorrect (e.g., Healy & Palepu, 2001; Bronson et al., 2006). Lastly, disclosing information on internal control involve costs because this information needs to be collected and assessed before the information is disclosed (Deumes & Knechel, 2008; Leuz & Wysocki, 2008).

While the number of studies on the internal control disclosures mandated by SOX has gradually increased², to date little is known about why firms voluntarily disclose information on internal control. Bronson et al. (2006) examine the extent of voluntary internal control disclosure in a pre-SOX period. They study about 400 mid-sized listed US firms and find that firm size, audit committee meeting frequency, institutional block ownership and more rapid income growth are positively associated with the likelihood that a firm voluntarily discloses internal control information. In addition, two studies examine internal control disclosures outside the US. First, Deumes and Knechel (2008) study voluntary internal control disclosure among a sample of Dutch listed firms during the period 1997 to 1999. Using a self-constructed disclosure score they find that the extent of internal control disclosure is negatively (positively) associated with block ownership (leverage). Second, Michelon et al. (2009) examine the association between a number of firm characteristics and the extent of internal control disclosure for, in total, 160 European firms listed in Frankfurt, London, Milan and Paris over a three-year period (2003-2005). Also relying on a self-constructed disclosure score, they find a negative (positive) association between institutional block ownership (proportion of independent members on the board of directors) and extent of internal control disclosure. They interpret their findings as suggesting that internal control disclosures are a substitute for the monitoring role played by other governance mechanisms, such as ownership concentration and board independence.

2.2. Culture and internal control disclosures

Culture has been defined as the collective programming of the mind that distinguishes the members of one group from another (Hofstede, 2001). This definition stresses that

culture involves shared values that determine whether a person belonging to a culture perceives something as, for instance, “legitimate” or “illegitimate” and as “rational” or “irrational.” In his influential classification Hofstede (1980, 2001) relies on work-related values to decompose national culture into four dimensions: individualism, uncertainty avoidance, power distance, and masculinity.³

Despite the criticism Hofstede received over the years (e.g., Shivakumar & Nakata, 2001; Baskerville, 2003) academic research has relied extensively on his cultural dimensions to show (national) culture’s profound impact on management behavior (for an overview see, e.g., Kirkman et al., 2006). Furthermore, research shows that Hofstede’s measure of national culture helps to explain diversity in the diffusion of codes (Haxhi & Van Ees, 2010) as well as why countries have different financial systems (Kwok & Tadesse, 2006).

Several studies show that also accounting practices are influenced by national culture (e.g., Doupnik & Tsakumis, 2004; Han et al., 2010). Much of the research demonstrating that accounting is culturally determined uses Gray’s (1988) theory of cultural relevance. In his theory Gray (1988) draws on Hofstede (1980) to establish the link between societal values (i.e., culture) and accounting practices. Both Gray (1988) and Hope (2003) remark that the individualism and uncertainty avoidance dimensions are the most relevant when studying managers’ accounting choice behaviors. In essence, Gray (1988) suggests that societal values affect accounting practices in two ways: indirectly through their influence on institutional consequences (e.g., legal system, corporate ownership, and development of capital market) and directly through their influence on accounting values. Gray (1988) suggests that an accounting subculture, with its own accounting values, can be distinguished. These accounting values are related to and derived from the societal values. Gray (1988)

identifies four accounting values: professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, and secrecy versus transparency.⁴

In the context of the present study, the ideas with respect to secrecy versus transparency are particularly relevant as they deal with disclosures in annual reports. Gray (1988: 8) defines the secrecy versus transparency value as “a preference for confidentiality and the restriction of disclosure of information about the business only to those who are closely involved with its management and financing as opposed to a more transparent, open and publicly accountable approach.”

Gray’s (1988) theory suggests that transparency is negatively related to uncertainty avoidance because there is a need to restrict information disclosures so as to avoid conflict and competition and to preserve security. Furthermore, he suggests that individualism and transparency are positively related. Specifically, Gray (1988) explains that in individualistic countries there is less concern for those closely involved with the firm and a larger focus on external parties. Various researchers empirically test Gray’s propositions with respect to the secrecy versus transparency dimension (e.g., Salter & Niswander, 1995; Zarzeski, 1996; Jaggi & Low, 2000; Hope, 2003; Tsakumis, 2007; Hope et al., 2008). Based upon their review Douppnik and Tsakumis (2004: 34) conclude that “most studies provide support for Gray’s hypothesized relationship between secrecy on the one hand and individualism and uncertainty avoidance on the other. [...] These findings are robust across a variety of different measures of national disclosure levels and across a broad range of countries.”

Accordingly, we make the following two predictions with respect to the impact of individualism and uncertainty avoidance on internal control disclosure (stated in alternative form):

Hypothesis 1: Individualism is positively associated with the amount of information on internal control firms disclose in their annual reports.

Hypothesis 2: Uncertainty avoidance is negatively associated with the amount of information on internal control firms disclose in their annual reports.

2.3. Institutional environment and internal control disclosures

In a series of papers La Porta and colleagues (1997, 1998, 2008) show that law and finance are linked. Specifically, they show that differences in legal origin (i.e., code law versus common law) explain the variation in investor protection. Their country-level analysis reveals that common law countries have strong investor protection and a high quality of legal enforcement. They show also that investor protection is a key institutional factor affecting firm policy choices. Among others they argue and present evidence that countries with weak investor protection are characterized by higher ownership concentration and less developed capital markets (La Porta et al., 2008).

Others extend La Porta et al.'s research to show that investor protection affects accounting policy choices including the choice to manage accounting earnings (e.g., Leuz et al., 2003; Han et al., 2010), to voluntarily disclose information (e.g., Jaggi & Low, 2000; Hope, 2003; Bushman et al., 2004; Vander Bauwhede & Willekens, 2008), and to hire a well-reputed (i.e., Big 4, 5, 6, etc.) audit firm (Francis et al., 2003). The argument to explain this effect of investor protection on accounting policy choices is based on the notion that although agency problems arise in all countries, the nature of these agency problems differs depending on the level of investor protection

(e.g., Hope, 2003; Vander Bauwhede & Willekens, 2008). Specifically, while in countries with strong investor protection (i.e., common law countries) firms face agency problems between managers and shareholders, firms in countries with weak investor protection (i.e., code law countries) face agency problems between minority and majority shareholders. Leuz et al. (2003) argue that strong investor protection limits managers' acquisition of private control benefits and, consequently, mitigates managers' incentives to manage accounting earnings because they have little to conceal from investors. In a similar vein, Jaggi and Low (2000: 51) argue that in countries with weak investor protection "there is a close relationship between agents and principals" and Vander Bauwhede and Willekens (2008: 104) explain that "the pressure that shareholders can put on managers is greater than the pressure minority shareholders can put on majority shareholders." Consequently, firms' incentive to voluntarily disclose information is lower in countries with weak investor protection. In general, studies find evidence consistent with these predictions and show that strong investor protection is associated with more timely recognition of losses (Bushman & Wysocki, 2006), less earnings management (Han et al., 2010), higher levels of financial disclosure (e.g., Hope, 2003) and higher audit quality (Francis et al., 2003). Accordingly, our third hypothesis (in alternative form) is as follows:

Hypothesis 3: Strong investor protection is positively associated with the amount of information on internal control firms disclose in their annual reports.

Apart from the impact of investor protection (in the form of legal rules) on internal control disclosures, we argue below that national codes are also an important part of the institutional environment in which listed firms operate and as such might

affect listed firms' choices with respect to the amount of information on internal control they disclose in their annual reports. Several papers suggest that codes form an alternative to legal rules for addressing agency problems (e.g., Aguilera & Cuervo-Cazurra, 2004; Zattoni & Cuomo, 2008) and as such complement the legal system. In contrast to legal rules, however, codes have no legal basis and are not legally binding (Wymeersch, 2005). In general, codes encourage, but do not mandate, listed firms to comply with the national code (Nowland, 2008).

Despite the voluntary nature of codes, Nowland (2008) demonstrates that firms' financial disclosure practices improved considerably after the introduction of these codes in eight East Asian countries. According to Nowland (2008) the fact that codes stressed disclosure and transparency may be an explanation for this improved disclosure. While we do not look at the impact of the introduction of codes on firms' disclosure behavior, we expect, in line with Nowland (2008), that the more emphasis a code puts on internal control (disclosure), the more firms will report on their internal control in the annual report. In the present study we adopt Zattoni and Cuomo's (2008) measure of so-called strictness of code's recommendations to determine the importance national codes attach to internal control. Zattoni and Cuomo (2008: 7) find evidence that recommendations presented in national codes "vary from objective and strict on the one hand, and vague and loose on the other." Specifically, we make the following prediction regarding the impact of the strictness of codes on internal control disclosure (stated in alternative form):

Hypothesis 4: The strictness of a national code's recommendations with respect to internal control is positively associated with the amount of information on internal control firms disclose in their annual reports.

3. DATA AND METHODS

3.1. Sample and data collection

This study examines disclosure practices with respect to internal control of listed firms from 25 countries during the period from 2005 to 2007. The countries were selected to make sure not only that the four legal systems (i.e., common law and French, German, and Scandinavian code law) but also that the various continents were represented. We excluded the US because SOX legally mandates listed firms to report on their internal control. Based on the classification of La Porta et al. (1998) the sample comprises six common-law countries,⁵ three Scandinavian code-law countries,⁶ seven German code-law countries,⁷ and nine French code-law countries.⁸

The sampling of firms within each of these 25 countries was as follows. First, we selected non-financial, listed firms only. Financial firms were excluded because of the specific regulatory structure in which they operate (e.g., the requirements as set out by the Basel Committee). Second, for each country we selected, where possible, 30 listed firms. Although these firms were selected randomly, we made sure that both large-caps and other listed firms were equally represented in the sample because prior research shows that firm size affects voluntary disclosure (e.g., Ahmed & Courtis, 1999). Specifically, for each country we started by randomly selecting 15 firms that were part of the stock exchange's main index (i.e., the large caps). Another 15 listed firms not belonging to the country's main index complemented these 15 large caps. For each firm we obtained three annual reports corresponding to fiscal years 2005, 2006, and 2007. If a firm delisted during the period examined, we replaced the firm-year observation by another firm-year observation from the same category (i.e., large

cap versus other listed firms). This procedure yielded a sample of 2,172 firm-year observations for 815 distinct firms.

Financial data is from Compustat Global. We used exchange rate data from Compustat Global Currency to translate total assets (our firm size measure) into Euros (using the closing rate). All other data and missing financial data were obtained directly from firms' annual reports.

3.2. Dependent variable: Internal control disclosure

Prior voluntary disclosure studies have used a great variety of measures for firms' disclosure, including ratings from the Association for Investment and Management (AIMR) (see Healy & Palepu (2001) for a discussion of these studies), scores from the Center for International Financial Analysis & Research (CIFAR) (e.g., Jaggi & Low, 2000; Hope, 2003; Francis et al., 2005), a rating from Deminor (Vander Bauwhede & Willekens, 2008), and self-constructed disclosure indices (see Marston & Shrives (1991) for a review of these studies). In general, these ratings and scores measure financial accounting and governance-related disclosures, but are not suitable for our study as they do not cover internal control disclosures.

Because of limited data availability and similar to studies by Deumes and Knechel (2008) and Michelon et al. (2009), we constructed our own internal control disclosure index (ICDisc). ICDisc was obtained in three steps following a process similar to other disclosure studies (e.g., Botosan 1997). The first step was to identify the disclosure items to include in the index. Based on a comprehensive review of prior studies on internal control disclosure (e.g., Bronson et al., 2006; Ashbaugh-Skaife et al., 2007; Doyle et al., 2007a; Deumes & Knechel, 2008; Michelon et al., 2009) and public policy reports on corporate governance and internal control (e.g., COSO, 1992,

2004; FEE, 2005; IFAC, 2006), we identified seven separate reportable items. The appendix provides a brief discussion of the specific disclosure items. The second step was to examine annual reports to identify the presence or absence of each disclosure item. We confined ourselves to information presented in the annual report because most prior studies focus on the annual report and because the annual report is a key source of information to investors (e.g., Hope, 2003). Second, we limited ourselves to the narrative part of the annual report and as such excluded the financial statements and notes to it. We excluded financial statements and notes because these parts of the annual report are subject to regulation (in particular the International Financial Reporting Standards) and may mandate the provision of certain risk information. The third step was to calculate a score for each firm in the sample (ICDisc). We did this by summing all seven disclosure items, placing equal weight on each item. The resulting index (ICDisc) measures the extent to which management voluntarily reports on internal control from zero (no items disclosed) to seven (all items disclosed).

3.3. Independent variables

The independent variables are split into explanatory variables and control variables. We first discuss how we measured the explanatory variables, followed by a discussion of the control variables.

Explanatory variables

Culture. Similar to prior studies (e.g., Jaggi & Low, 2000; Douppnik & Tsakumis, 2004; Haxhi & Van Ees, 2009; Han et al., 2010), we use Hofstede's (1980, 2001) scores on the four cultural dimensions to represent each country's cultural values. As

indicated by Haxhi & Van Ees (2009: 3) Hofstede's values are the most widely used in the measurement of national culture, and this has helped to develop a widely acceptable, well-defined and empirically based terminology characterizing culture. Second, the use of the Hofstede cultural dimensions allowed the largest sample of countries to be included in our research. Third, Hofstede's cultural dimensions are based on research within a business organization. This study also focuses on some form of business practice, i.e. firms' disclosure practices. In the analysis we include all four cultural dimensions and not just the scores for individualism and uncertainty avoidance, because the combination of the scores on the four dimensions represents the culture of a country. That is, in the analysis we simultaneously include individualism (IND), uncertainty avoidance (UAI), masculinity (MAS) and power distance (PDI).

Investor protection. In line with Leuz et al. (2003) and Han et al. (2010) we use the product of the anti-director rights index (ADRI) and law enforcement (as measured by the World Governance Index by Kaufmann et al. (2009)) as proxy for a country's legal system for investor protection. This composite measure reflects both *de jure* and *de facto* investor protection. We use the ADRI developed by La Porta et al. (1998). It is a widely used index which denotes the strength of anti-director rights in a country (0 represents the weakest and 6 the strongest anti-director rights). It is formed by adding 1 when: (1) the country allows shareholders to mail their proxy vote to the firm; (2) shareholders are not required to deposit their shares prior to the shareholders' meeting; (3) cumulative voting or proportional representation of minorities in the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to

call for an extraordinary shareholders' meeting is less than or equal to 10%; and (6) shareholders have pre-emptive rights that can be waived only by a shareholders' vote. Similar to Doidge et al. (2007) we measure law enforcement by the rule of law component of the World Governance Index (WGI) provided by Kaufmann et al. (2009). The rule of law is an annual country-specific measure of contract enforcement quality and police and court system quality.

Strictness of code recommendations. To measure the strictness of national code's recommendations regarding internal control, we apply Zattoni and Cuomo's (2008) method to four general types of recommendations regarding internal control. These general recommendations relate to: (1) management's responsibility for internal control; (2) the description of the firm's internal control system; (3) the evaluation of the effectiveness of the firm's internal control system; and (4) the involvement of an audit committee in internal control. Similar to Zattoni and Cuomo we classify each of the recommendations as: "(i) "strong" when they contained objectively strong and quantitatively rigid rules; (ii) "semi-strong" when they contained objectively semi-strong and quantitatively rigid rules; (iii) "weak" when they didn't contain objective and quantitatively rigid rules, but only vague and general ones; and (iv) "not covered" when the topic wasn't covered by the code" (2008: 7). Furthermore, we assign a score to each recommendation: 3 for strong recommendations, 2 for semi-strong, 1 for weak, and 0 for not covered. Finally, we calculate the code's overall strictness of recommendations on internal control by adding the score assigned to the each of the four recommendations. Hence, this measure could assume any (integer) value between 0 and 12.

Control variables

In addition to the cultural and institutional variables, we include a number of (firm-level) control variables considered to be associated with voluntary disclosure in general, and voluntary disclosure on internal control in particular.

Firm size. Prior studies show that firm size matters when examining voluntary disclosure. Specifically, studies indicate that as larger firms have greater agency costs, they are expected to disclose higher quality information (Ahmed & Courtis, 1999; Deumes & Knechel, 2008). In addition, larger firms are more visible and they are more likely to respond to investors' demands (Li et al., 2008). In this study, we measure firm size as total assets.

Sales growth. A fast growing firm may outgrow its internal systems and may require time to make new investments in internal control. This leads to higher inherent risk, which may increase the incentive for management to report on internal control (see e.g., Ashbaugh-Skaife et al., 2007; Doyle et al., 2007a). Alternatively, managers may be hesitant to report on internal controls that are weakened by rapid growth. We measure sales growth as the firm's year-over-year sales growth.

US-listing. Foreign stock exchanges have different requirements regarding reporting on internal control. Due to the existence of SOX, listing rules in the US allow far less management discretion about reporting on internal control. Theory suggests that by cross-listing in the US firms bond themselves to the strict US requirements including greater demands for firm disclosures (Ferris et al., 2009). We measure US as a dummy

variable that assumes the value of one if the firm's shares are cross-listed in the US and zero otherwise.

Industry classification. Although we do not have any specific expectations regarding the influence of industry on internal control disclosures, we control for industry because prior voluntary disclosure studies have shown that industry affects disclosure (e.g., Botosan, 1997; Ahmed & Courtis, 1999). Deumes and Knechel (2008) suggest that industry membership is a proxy for variables that are associated with voluntary disclosure, including proprietary costs. We use two dummy variables that are equal to one if firms operate in the manufacturing or trade sector and zero otherwise. The omitted industry is "other".

3.4. Empirical models

We employ the following general model to test the hypotheses:

$$\text{ICDisc} = f(\text{Culture; Investor protection; Strictness of codes; Firm Controls})$$

In the multivariate regression analyses we start with a firm-level controls-only model and subsequently add cultural and institutional explanatory variables to test our hypotheses. Given possible cross-sectional dependence of our dependent variable, in one model we use OLS and in another we re-estimate our results using an approach in which standard errors are corrected for clustering at the firm-level.

4. RESULTS

4.1. Descriptive analysis

Table 1 presents descriptive statistics of the (raw) dependent and independent variables. Table 1, panel A shows descriptive results for the full sample, panels B to E show descriptive results for four portfolios distinguished according to legal origin.

[Insert Table 1 here]

Table 1, panel A shows that the mean of ICDisc (the dependent variable) is 3.65 for the full sample. Panels B to E of Table 1 indicate that firms from the common-law countries present on average more internal control information (mean = 4.37) than firms from code-law countries (means are 3.71, 3.43, and 3.31 for the Scandinavian, German, and French code-law countries, respectively).

The means of the firm-level variables for the full sample (Table 1, panel A) indicate that the average firm has total assets of about €9.8 billion and experienced a year-on-year increase in sales of 18 percent in the period 2005 to 2007. Furthermore, Table 1, panel A shows that 85 percent of all sampled firms have been audited by one of the Big 4. For the full sample, we observe that 14 percent of the firms have shares cross-listed in the US. Table 1, panels B to E provide more detailed information regarding firm characteristics of the average firm in each of the four legal origin regions.

The following image emanates from Table 1, panels B to E regarding the country-level explanatory variables. First, the common-law countries included in the study (panel B, Table 1) are characterized by a moderate level of investor protection (mean = 3.39), are moderate in individualism (mean = 56.35), and low in uncertainty

avoidance (mean = 45.83). Interestingly, code recommendations with respect to internal control are strict in the common-law countries (mean = 7.90). Second, the Scandinavian code-law countries included in this study (see Table 1, panel C) have the highest investor protection (mean = 5.16), are the most individualistic (mean = 69.28), and the least uncertainty avoidant (mean = 37.16). The code recommendations with respect to internal control are moderately strict in the Scandinavian code-law countries (mean = 5.93). Lastly, the German and French code-law countries included in this study score moderately on individualism (means are 51.89 and 43.62 for the German and French code-law countries, respectively) and high on uncertainty avoidance (means are 77.97 and 80.71 for the German and French code-law countries, respectively). However, while the French code-law countries are characterized by relatively weak investor protection (mean = 0.80) combined with strict code recommendations (mean = 7.28), the sampled German code-law countries have moderate investor protection (mean = 3.70) combined with the least strict code recommendation (mean = 4.69).

[Insert Table 2 here]

Table 2 shows the correlations between the dependent and independent variables. In a number of cases the correlation coefficients between independent variables is greater than (the absolute value of) 0.4, which may indicate possible multicollinearity issues. In particular, the correlations between, first, individualism and investor protection ($r = 0.715$); second, power distance and investor protection ($r = -0.600$); and, finally, individualism and power distance ($r = -0.728$) are high, but consistent with prior studies (Hofstede, 2001; Licht et al., 2005). However, an examination of

variance inflation factors (VIFs) (see Table 4) demonstrates that multicollinearity is not a problem as all VIFs remain below the commonly used threshold of 10 (Field, 2009).

4.2. Hypotheses testing

To test our hypotheses we first present the results of univariate regression analyses.

This is followed by the results based on a number of multivariate regression analyses.⁹ Table 3 shows the results for the univariate regression analyses.

[Insert Table 3 here]

The univariate regression results provide initial evidence that favors the alternative in hypotheses 1 and 2 which predicted that individualism and uncertainty avoidance are, respectively, positively and negatively associated with the amount of information on internal control firms disclose in their annual reports. Furthermore, the univariate regression results provide evidence that the amount of information on internal control disclosed is positively associated with both investor protection (as predicted in hypothesis 3) and the strictness of code recommendations (hypothesis 4).

Table 4, Panel A presents the results for the multivariate regression analyses using various specifications. Given possible cross-sectional dependence of our dependent variable (ICDisc), Table 4, Panel B presents the results after correcting for clustering at the firm-level (Gow et al. 2009). First, model (1) in Table 4 presents the results of a firm-level controls-only model. In line with prior research (e.g., Ahmed & Courtis, 1999; Francis, 2004; Ashbaugh-Skaife et al., 2007; Doyle et al., 2007a; Deumes & Knechel, 2008) we find significant positive associations between, on the

one hand, the amount of internal control disclosures and, on the other, firm size, year-on-year sales growth, Big 4 audit firms, and having shares cross-listed in the US (p-values < 0.01 for all variables). Moreover, the results presented in model (1) suggest that compared to both 2005 (p-value < 0.01) and 2006 (p-value < 0.10) the amount of internal control disclosure is significantly higher in 2007.

[Insert Table 4 here]

To test our hypotheses, we separately add the cultural and institutional variables to the firm-level controls-only model. The results are shown in models (2) to (3c) in Table 4. We observe that, except for sales growth, the impact of firm characteristics on amount of internal control information disclosed in firms' annual reports remains unaltered when cultural and/or institutional factors are included.

Model (2) shows the results with respect to the impact of culture on internal control disclosures. Specifically, the results reported in model (2) confirm the findings of the univariate regression analyses. That is, the results allow us to reject the null in hypotheses 1 and 2 in favor of the alternatives that the amount of internal control disclosures is positively associated with individualism (**H1**) and negatively with uncertainty avoidance (**H2**). These results are in line with prior studies on the impact of culture on disclosure levels (e.g., Salter & Niswander, 1995; Doupnik & Tsakumis, 2004). Specifically, there is a significantly positive association (p-value < 0.01) between IND and ICDisc, which is in line with the idea that firms from individualistic countries tend to be more transparent about their internal control system. Furthermore, the association between UAI and ICDisc is significantly negative (p-value < 0.01), which suggests that firms in “weak uncertainty avoidance countries are more likely to

disclose higher levels of public investor-oriented information in order to compete in open market settings” (Zarzeski, 1996: 27). Regarding the other two cultural variables Hofstede (2001) distinguished (power distance (PDI) and masculinity (MAS)), we find the amount of internal control disclosure to be positively associated with PDI (p-value < 0.01), but is not associated with MAS. The finding with respect to PDI runs against Gray’s (1988) predictions, but is consistent with empirical evidence (e.g., Jaggi & Low, 2000; Hope, 2003). The non-significant association between ICDisc and MAS is in line with Gray (1988) who does not view masculinity as an important determinant of disclosure practices.

Models (3a) to (3c) present the results with respect to the impact of the institutional environment on internal control disclosures. In models (3a) and (3b) we respectively add investor protection and strictness of code recommendations to the firm-level controls-only model. Model (3c) presents the results of all these institutional factors in one specification. The results shown in Table 4, allow us to reject the null in hypothesis 3 in favor of the alternative that there is a positive association between investor protection and the amount of information on internal control firms disclose in their annual reports (p-value < 0.01 in models (3a) and (3c)). This finding is in line with the growing body of research which suggests that law and financial reporting are linked and, in particular, that countries with strong investor protection have significantly higher financial reporting quality (e.g., Hope, 2003; Leuz et al., 2003; Bushman & Wysocki, 2006; Han et al., 2010).

Also, we find evidence that is in favor of our alternative hypothesis that the strictness of a national code’s recommendations with respect to internal control is positively associated with the amount of information on internal control firms disclose in their annual report (**H4**) (p-value < 0.01 in models (3b) and (3c)). This result is in

line with a recent study by Nowland (2008) and suggests *prima facie* that strict codes complement the legal system and, although being voluntary, actually lead to higher amounts of information on internal control disclosed in annual reports.

Table 4, model (4) shows the results of the full model that includes firm-level controls, cultural variables and institutional variables. Overall, the results confirm the results with respect to hypotheses 1 and 2 regarding the impact of culture on internal control disclosure (i.e., individualism and uncertainty avoidance). The results of the full model are also in line with our conclusions regarding the impact of investor protection on internal control disclosures. The result with respect to the influence of the strictness of code recommendations on amount of information on internal control disclosed in annual reports is puzzling. While in all other regression specifications we find a significant and positive association, in the full model (i.e., model (4)), it is significant and negative. A possible explanation might be that culture in general and uncertainty avoidance in particular amends the impact of strictness of codes on internal control disclosures. Interestingly, the inclusion of an interaction term $UAI*Strict$ in model (4), yields results similar to models (2) and (3c) (i.e. UAI is significantly negative, while $strict$ is significantly positive), in combination with an interaction term that is significantly negative ($p\text{-value} < 0.01$; not tabulated). This suggests that in countries with low uncertainty avoidance, the impact of strictness of code recommendations on internal control disclosures is reduced compared to countries with high uncertainty avoidance.

Taken together, the analyses in Tables 3 and 4 suggest that individualism, uncertainty avoidance, investor protection, and strictness of code recommendations, on average, have a statistically significant influence on the amount of information on

internal control firms disclose in their annual reports after controlling for the impact of firm characteristics.

4.3. Sensitivity tests

To test whether the associations between culture and institutions and amount of information on internal control disclosed in annual reports are affected by our research design choices, we perform a number of sensitivity analyses.

First, to test the robustness of the model to choice of cultural variables, we use the GLOBE cultural dimensions (House et al., 2004) as alternative for the cultural dimensions distinguished by Hofstede. The results (not tabulated) on the basis of this alternative measure for culture reveal similar patterns with respect to our hypotheses concerning the impact of culture on internal control disclosures.

Second, recently Spamann (2009) criticized the methodology La Porta et al. (1998) used to develop their ADRI. Specifically, he observes that La Porta et al. (1998) “did not employ local lawyers to ascertain the relevant rules in each country” and, consequently, that “some legal scholars have claimed that values from [La Porta et al., 1998] for certain countries are inaccurate, based on the scholars’ knowledge of those countries’ laws” (Spamann, 2009: 3). Claiming a more thorough approach in which local lawyers were involved, Spamann (2009) arrives at a revised-ADRI that deviates substantially from the original ADRI by La Porta et al.’s (1998). We re-estimate our results using this revised-ADRI instead of the original ADRI. In general, the results (not tabulated) are similar as those presented in Table 4.

Third, similar to Han et al. (2010) we use a dummy variable for the level of investor protection (with a value of one indicating strong investor protection, i.e., a score greater than the mean investor protection score for the full sample). In line with

our results reported in Table 4, we generally find that strong investor protection is associated with greater amounts of information on internal control disclosed in firms' annual reports.

Fourth, and finally, we use an alternative measure for strictness of code recommendations. Specifically, instead of calculating the code's overall strictness of recommendations on internal control by adding the score assigned to the each of the four recommendations (yielding a variable that could assume any value between 0 and 12), we measured the strictness of code recommendations with respect to internal control using a variable calculated as the number of strong recommendations on internal control included in each code. The results are *qualitate qua* similar to those reported in model (4).

We conclude from these sensitivity checks that the findings on the independent variables reported in the previous sub-section are largely robust to our research design choices, allowing us the same qualitative conclusions on the influence of culture and institutions on the amount of information on internal control firms' disclose in their annual reports.

5. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

The central focus of this study is to empirically examine the association between, on the one hand, culture and the institutional environment in which firms operate and the amount of information on internal control firms disclose in their annual reports, on the other.

Using unique hand-collected data from a sample of 2,172 firm-year observations for 815 distinct firms from 25 countries for the period 2005 to 2007, we are able to show, first, that there are cross-national differences in the amount of internal control

information presented in annual reports and, second, that both cultural and institutional variables explain these cross-national differences after controlling for firm characteristics.

First, with respect to the impact of culture on this type of disclosure we find—consistent with Gray’s (1988) theory of cultural relevance—that the amount of internal control information firms present in their annual reports is positively (negatively) associated with individualism (uncertainty avoidance). While previous studies have shown that culture affects corporate financial disclosure practices (e.g., Hope, 2003) and earnings management (Han et al., 2010), this study shows that culture also affects an increasingly important type of disclosure that is subject to, relatively speaking, less regulation: disclosure of internal control information.

Second, with respect to the impact of institutions on internal control disclosure, we find evidence in support of the idea that strong investor protection is positively associated with financial reporting quality. Specifically, while prior research has shown that the level of investor protection is associated with more timely recognition of losses (Bushman & Wysocki, 2006), less earnings management (e.g., Han et al., 2010), higher levels of financial disclosure (e.g., Hope, 2003) and higher audit quality (Francis et al., 2003), in this study we are able to document that also the amount of internal control disclosure increases with investor protection. Apart from confirming prior findings with respect to the association between legal rules and financial reporting, we extend this literature as well. While prior studies have considered only the impact of legal rules on financial reporting practices, in this study we additionally look at the possible impact of corporate governance codes on financial reporting practices. We believe this is a valuable extension of previous studies, because in the past decades codes have become an alternative for legal rules to address agency

problems and as such have complemented the legal system (e.g., Aguilera & Cuervo-Cazurra, 2004). We find that when code recommendations with respect to internal control are strict, firms tend to disclose more information on internal control in their annual reports. *Prima facie*, this suggests that both the rule-based solution chosen in the US (i.e., SOX) and a more principles-based approach followed in many countries outside the US (i.e., voluntary codes) have been effective in pushing firms to disclose more information on internal control; information investors perceive as highly relevant (e.g., Hermanson, 2000). However, the results also suggest that the effectiveness of the principles-based approach is conditional on a country's culture. Specifically, the results suggest that in countries characterized by a high level of uncertainty avoidance, more strict codes are associated with lower amounts of information on internal control disclosed in annual reports. This might suggest that there is no uniform approach for tackling accounting scandals and corporate failures, but that culture is a factor policy makers have to take into account.

This study is subject to some caveats. A first caveat is that we only looked at listed firms. At present, it is unclear whether the results of this study can be generalized to non-listed firms. Therefore, it would be interesting to extend our research to this type of firms and to unravel, first, whether there are cross-national differences and, second, whether culture and the institutional environment are still important determinants.

A second caveat is that, although we looked at the determinants of amount of internal control information disclosed in annual reports cross-nationally, we did not examine their consequences. A potentially fruitful area for future research is to examine whether there are cross-national differences in the association between internal control disclosure practices and the firms' cost of capital. This would be a

natural extension of studies by Francis et al. (2005) and Ogneva et al. (2007) and could provide evidence on the global importance of voluntary internal control disclosure on capital markets.

In spite of these caveats, this study makes several unique contributions to the growing body of literature on internal control disclosure practices. First, this is the first study that not only looks at cross-national differences in internal control practices, but also whether these differences can be explained by differences in culture and institutional environment. Hitherto, except for a study by Michelon et al. (2009), prior research has focused on internal control disclosure practices within a single country, and typically, the US. This study has provided some valuable insights into how culture and the institutional environment shape firms' choices with respect to the amount of information on internal control disclosed in their annual reports. Second, this is the first study to offer evidence of an association between internal control disclosure practices and characteristics of national corporate governance codes. The study documents a positive association between, on the one hand, the amount of information on internal control that firms disclose in their annual reports and, on the other, the strictness of code recommendations. However, the results also indicate that this association is conditional on a country's culture. The results of this study suggest that in countries characterized by a high level of uncertainty avoidance, more strict codes do not necessarily lead to more information on internal control in annual reports. Taken together, the findings of this study have potential implications for policy makers who are responsible for updating corporate governance codes. Specifically, the results of this large-scale study suggest that there is no uniform approach to tackle accounting scandals and corporate failures, but that both culture and the institutional environment are factors policy makers have to take into account.

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Table 1: Descriptive statistics**Panel A: Full Sample**

| | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|------------------------|----------|----------------|----------------|-------------|-----------------------|
| ICDisc | 2,170 | 0.00 | 7.00 | 3.65 | 1.65 |
| Firm size | 2,172 | 292 | 235,466,000 | 9,826,494 | 25,021,283 |
| Sales growth | 2,159 | -0.99 | 1.37 | 0.18 | 0.29 |
| Big 4 auditor | 2,163 | 0.00 | 1.00 | 0.85 | 0.36 |
| US list | 2,168 | 0.00 | 1.00 | 0.14 | 0.34 |
| Manufacturing industry | 2,172 | 0.00 | 1.00 | 0.63 | 0.48 |
| Trading industry | 2,172 | 0.00 | 1.00 | 0.09 | 0.29 |
| IDV | 2,076 | 14.00 | 90.00 | 52.32 | 22.14 |
| UAI | 2,076 | 23.00 | 112.00 | 65.24 | 23.02 |
| PDI | 2,076 | 18.00 | 104.00 | 55.74 | 19.86 |
| MAS | 2,076 | 5.00 | 95.00 | 52.33 | 19.96 |
| Investor protection | 1,834 | -1.48 | 8.50 | 2.64 | 2.82 |
| Strictness of code | 2,172 | 0.00 | 11.00 | 6.66 | 2.84 |

Panel B: Common law countries

| | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|------------------------|----------|----------------|----------------|-------------|-----------------------|
| ICDisc | 547 | 0.00 | 7.00 | 4.37 | 1.44 |
| Firm size | 547 | 1,423,902 | 193,548,693 | 5,662,021 | 20,598,556 |
| Sales growth | 547 | -0.92 | 1.37 | 0.21 | 0.29 |
| Big 4 auditor | 546 | 0.00 | 1.00 | 0.76 | 0.43 |
| US list | 547 | 0.00 | 1.00 | 0.09 | 0.28 |
| Manufacturing industry | 547 | 0.00 | 1.00 | 0.55 | 0.50 |
| Trading industry | 547 | 0.00 | 1.00 | 0.13 | 0.33 |
| IDV | 547 | 20.00 | 90.00 | 56.35 | 27.60 |
| UAI | 547 | 35.00 | 64.00 | 45.83 | 10.09 |
| PDI | 547 | 35.00 | 104.00 | 60.86 | 24.40 |
| MAS | 547 | 34.00 | 66.00 | 55.05 | 10.68 |
| Investor protection | 547 | 0.26 | 8.50 | 3.39 | 3.20 |
| Strictness of code | 547 | 2.00 | 9.00 | 7.90 | 2.10 |

Panel C: Scandinavian code law countries

| | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|------------------------|----------|----------------|----------------|-------------|-----------------------|
| ICDisc | 266 | 0.00 | 7.00 | 3.71 | 1.46 |
| Firm size | 267 | 13,061 | 43,917,541 | 2,986,643 | 6,679,963 |
| Sales growth | 264 | -0.99 | 1.37 | 0.17 | 0.34 |
| Big 4 auditor | 265 | 0.00 | 1.00 | 0.96 | 0.19 |
| US list | 265 | 0.00 | 1.00 | 0.13 | 0.34 |
| Manufacturing industry | 267 | 0.00 | 1.00 | 0.63 | 0.48 |
| Trading industry | 267 | 0.00 | 1.00 | 0.05 | 0.22 |
| IDV | 267 | 63.00 | 74.00 | 69.28 | 4.65 |
| UAI | 267 | 23.00 | 59.00 | 37.16 | 15.80 |
| PDI | 267 | 18.00 | 33.00 | 27.44 | 6.63 |
| MAS | 267 | 5.00 | 26.00 | 15.66 | 8.64 |
| Investor protection | 267 | 3.90 | 5.88 | 5.16 | 0.88 |
| Strictness of code | 267 | 0.00 | 8.00 | 5.93 | 2.55 |

Table 1: Descriptive statistics

cont.

Panel D: German code law countries

| | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|------------------------|----------|----------------|----------------|-------------|-----------------------|
| ICDisc | 514 | 0.00 | 7.00 | 3.43 | 1.72 |
| Firm size | 515 | 7,105 | 235,466,000 | 16,300,367 | 34,220,260 |
| Sales growth | 515 | -0.95 | 1.37 | 0.13 | 0.24 |
| Big 4 auditor | 513 | 0.00 | 1.00 | 0.90 | 0.30 |
| US list | 513 | 0.00 | 1.00 | 0.11 | 0.31 |
| Manufacturing industry | 515 | 0.00 | 1.00 | 0.73 | 0.45 |
| Trading industry | 515 | 0.00 | 1.00 | 0.09 | 0.29 |
| IDV | 515 | 18.00 | 68.00 | 51.89 | 17.72 |
| UAI | 515 | 58.00 | 93.00 | 77.97 | 13.25 |
| PDI | 515 | 34.00 | 68.00 | 49.55 | 12.33 |
| MAS | 515 | 39.00 | 95.00 | 67.97 | 18.21 |
| Investor protection | 273 | 1.73 | 5.53 | 3.70 | 1.56 |
| Strictness of code | 515 | 0.00 | 9.00 | 4.69 | 3.49 |

Panel E: French code law countries

| | <i>N</i> | <i>Minimum</i> | <i>Maximum</i> | <i>Mean</i> | <i>Std. Deviation</i> |
|------------------------|----------|----------------|----------------|-------------|-----------------------|
| ICDisc | 843 | 0.00 | 7.00 | 3.31 | 1.65 |
| Firm size | 843 | 292 | 197,086,000 | 10,740,090 | 23,612,966 |
| Sales growth | 833 | -0.99 | 1.37 | 0.19 | 0.30 |
| Big 4 auditor | 839 | 0.00 | 1.00 | 0.84 | 0.37 |
| US list | 843 | 0.00 | 1.00 | 0.19 | 0.39 |
| Manufacturing industry | 843 | 0.00 | 1.00 | 0.62 | 0.49 |
| Trading industry | 843 | 0.00 | 1.00 | 0.08 | 0.27 |
| IDV | 747 | 14.00 | 76.00 | 43.62 | 19.76 |
| UAI | 747 | 48.00 | 112.00 | 80.71 | 16.71 |
| PDI | 747 | 50.00 | 81.00 | 66.36 | 9.78 |
| MAS | 747 | 42.00 | 70.00 | 52.65 | 10.67 |
| Investor protection | 747 | -1.48 | 4.16 | 0.80 | 2.09 |
| Strictness of code | 843 | 3.00 | 11.00 | 7.28 | 2.11 |

This table presents descriptive statistics for continuous and dichotomous variables for the full sample and for four legal origin regions (based on La Porta et al., 1998). ICDisc = internal control disclosure score based on a self-constructed index comprising 7 disclosure items. Firm size = Total assets in €thousand as per year end (translated into Euros using the closing rate). Big 4 auditor is one if the firm's financial statements have been audited by Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers and zero otherwise. US list is one if the firm's shares are cross-listed in the US. Manufacturing/trading industry is one if the firm is active in the manufacturing or trade sectors, respectively and zero otherwise. IDV, UAI, PDI, and MAS refer to the scores by Hofstede (2001). Investor protection is the product of the anti-director rights index (La Porta et al., 1998) and the rule of law index according to the World Governance Index (Kaufmann et al., 2008). Strictness of code is a self-constructed measure based on the procedure by Zattoni and Cuomo (2008) to code recommendations with respect to internal control.

| Table 2: Correlation matrix | | | | | | | | | | | | | |
|-----------------------------|----------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 ICDisc | 1.000 | 0.161** | 0.049* | 0.140** | 0.130** | -0.035 | 0.019 | 0.216** | 0.166** | -0.285** | -0.092** | -0.070** | 0.080** |
| 2 Firm size | 0.171** | 1.000 | -0.084** | 0.189** | 0.343** | 0.043* | -0.034 | 0.176** | 0.103** | 0.275** | -0.010 | 0.194** | -0.014 |
| 3 Sales growth | 0.034 | -0.079** | 1.000 | -0.071** | -0.034 | -0.035 | -0.023 | -0.062** | -0.030 | -0.122** | 0.088** | -0.036 | 0.111** |
| 4 Big 4 | 0.139** | 0.199** | -0.084** | 1.000 | 0.106** | 0.035 | -0.019 | 0.209** | 0.210** | -0.010 | -0.224** | 0.013 | 0.023 |
| 5 US list | 0.144** | 0.349** | -0.039 | 0.106** | 1.000 | -0.009 | -0.025 | -0.009 | 0.105** | 0.020 | 0.005 | 0.067** | 0.039 |
| 6 Manufacturing | -0.028 | 0.041 | -0.029 | 0.035 | -0.009 | 1.000 | -0.413** | -0.052* | -0.065** | 0.044* | -0.001 | -0.021 | 0.015 |
| 7 Trading | 0.007 | -0.036 | -0.037 | -0.019 | -0.025 | -0.413** | 1.000 | -0.052* | -0.065** | 0.044* | -0.001 | -0.021 | 0.015 |
| 8 Investor protection | 0.221** | 0.161** | -0.035 | 0.211** | 0.000 | -0.054* | 0.002 | 1.000 | 0.660** | -0.193** | -0.651** | -0.072** | -0.065** |
| 9 IDV | 0.152** | 0.098** | -0.016 | 0.194** | 0.097** | -0.066** | 0.014 | 0.715** | 1.000 | -0.300** | -0.714** | 0.177** | 0.078** |
| 10 UAI | -0.295** | 0.249** | -0.076** | -0.027 | 0.021 | 0.042 | 0.023 | -0.271** | -0.313** | 1.000 | 0.305** | 0.219** | -0.269** |
| 11 PDI | -0.069** | -0.013 | 0.081** | -0.209** | -0.030 | 0.002 | -0.013 | -0.600** | -0.728** | 0.265** | 1.000 | 0.032 | 0.197** |
| 12 MAS | -0.092** | 0.223** | -0.044* | -0.030 | 0.042 | -0.009 | 0.075** | -0.057* | 0.071** | 0.394** | 0.159** | 1.000 | 0.086** |
| 13 Strictness of code | 0.114** | -0.026 | 0.087** | 0.053* | 0.079** | 0.014 | -0.038 | -0.077** | 0.092** | -0.280** | 0.168** | -0.094** | 1.000 |

This table presents the correlation coefficients between the dependent and independent variables. Pearson correlation coefficients are presented below the diagonal. Spearman's Rho are presented above the diagonal. ICDisc = internal control disclosure score based on a self-constructed index comprising 7 disclosure items. Firm size = Total assets in €thousand as per year end (translated into Euros using the closing rate). Big 4 auditor is one if the firm's financial statements have been audited by Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers and zero otherwise. US list is one if the firm's shares are cross-listed in the US. Manufacturing/trading industry is one if the firm is active in the manufacturing or trade sectors, respectively and zero otherwise. Investor protection is the product of the anti-director rights index (La Porta et al., 1998) and the rule of law index according to the World Governance Index (Kaufmann et al., 2008). IDV, UAI, PDI, and MAS refer to the scores by Hofstede (2001). Strictness of code is a self-constructed measure based on the procedure by Zattoni and Cuomo (2008) to code recommendations with respect to internal control. ** $p < 0.01$ and * $p < 0.05$ (based on two-tailed tests).

| Table 3: Univariate regression results | | | | |
|-----------------------------------------------|-----------------|-------------|-------------------------------|----------|
| | Constant | Beta | Adjusted R-squared | N |
| IDV (H1) | 3.087*** | 0.011*** | 0.023 | 2,074 |
| UAI (H2) | 5.063*** | -0.021*** | 0.086 | 2,074 |
| Investor protection (H3) | 3.415*** | 0.128*** | 0.048 | 1,833 |
| Strictness of code (H4) | 3.211*** | 0.067*** | 0.013 | 2,170 |

This table presents the univariate regression results on the basis of ordinary least squares. The dependent variable in all regressions is ICDisc. The variables are defined as follows. ICDisc = internal control disclosure score based on a self-constructed index comprising 7 disclosure items. IDV and UAI refer to the scores by Hofstede (2001). Investor protection is the product of the anti-director rights index (La Porta et al., 1998) and the rule of law index according to the World Governance Index (Kaufmann et al., 2008). Strictness of code is a self-constructed measure based on the procedure by Zattoni and Cuomo (2008) to code recommendations with respect to internal control.

Table 4: Multivariate regression results

| Panel A: OLS results | | | | | | |
|-----------------------------------|----------------------|----------------------|----------------------|---------------------|---------------------|----------------------|
| | 1 | 2 | 3a | 3b | 3c | 4 |
| Constant | 1.243*** (0.401) | 0.309 (0.440) | 1.772*** (0.425) | 0.754* (0.414) | 1.004** (0.449) | 0.365 (0.460) |
| Firm size | 0.098*** (0.019) | 0.194*** (0.019) | 0.071*** (0.020) | 0.104*** (0.019) | 0.083*** (0.201) | 0.147*** (0.021) |
| Sales growth | 0.317*** (0.119) | 0.186 (0.117) | 0.294** (0.129) | 0.269** (0.119) | 0.219* (0.129) | 0.149 (0.122) |
| Big 4 auditor | 0.505*** (0.099) | 0.408*** (0.095) | 0.302*** (0.105) | 0.479*** (0.099) | 0.291*** (0.104) | 0.322*** (0.100) |
| US list | 0.469*** (0.108) | 0.278*** (0.104) | 0.473*** (0.111) | 0.419*** (0.108) | 0.410*** (0.112) | 0.383*** (0.107) |
| Manufacturing | -0.112 (0.079) | -0.015 (0.075) | -0.053 (0.082) | -0.111 (0.078) | -0.046 (0.081) | -0.016 (0.077) |
| Trading | 0.013 (0.131) | 0.115 (0.124) | -0.068 (0.136) | 0.032 (0.130) | -0.085 (0.135) | 0.053 (0.130) |
| Year 2005 | -0.236*** (0.086) | -0.258*** (0.082) | -0.234*** (0.090) | -0.195** (0.086) | -0.168* (0.091) | -0.275*** (0.087) |
| Year 2006 | -0.161* (0.084) | -0.138* (0.080) | -0.212** (0.089) | -0.132 (0.084) | -0.175** (0.089) | -0.227*** (0.085) |
| IDV (H1) | - | 0.006** (0.002) | - | - | - | 0.015*** (0.005) |
| UAI (H2) | - | -0.025*** (0.002) | - | - | - | -0.025*** (0.002) |
| PDI | - | 0.008*** (0.003) | - | - | - | 0.024*** (0.004) |
| MAS | - | -0.003 (0.002) | - | - | - | -0.003 (0.002) |
| Investor protection (H3) | - | 0.112*** (0.013) | - | - | 0.113*** (0.013) | 0.059*** (0.020) |
| Strictness of code (H4) | - | 0.056*** (0.012) | - | - | 0.065*** (0.014) | -0.067*** (0.022) |
| F-value | 15.903*** | 38.003*** | 19.208*** | 16.525*** | 18.456*** | 28.953*** |
| Adjusted R squared | 0.053 | 0.177 | 0.083 | 0.061 | 0.095 | 0.187 |
| Incremental R squared | - | 0.120*** | 0.035*** | 0.009*** | 0.048*** | 0.141*** |
| Maximum VIF | 1.340 | 2.670 | 1.335 | 1.355 | 1.367 | 9.035 |
| N | 2,148 | 2,061 | 1,823 | 2,148 | 1,823 | 1,823 |

(Table continues on next page)

| Panel B: Results corrected for clustering at firm level | | | | | | |
|---------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 1 | 2 | 3a | 3b | 3c | 4 |
| Constant | 1.243 (0.496)** | 0.309 (0.550) | 1.772*** (0.536) | 0.754 (0.524) | 1.004* (0.569) | 0.357 (0.590) |
| Firm size | 0.098 (0.023)*** | 0.194*** (0.024) | 0.071*** (0.025) | 0.104*** (0.015) | 0.084*** (0.025) | 0.149*** (0.027) |
| Sales growth | 0.317 (0.138)** | 0.186 (0.125) | 0.294 (0.144)** | 0.269** (0.137) | 0.216 (0.143) | 0.151 (0.128) |
| Big 4 auditor | 0.505 (0.121)*** | 0.408*** (0.118) | 0.302** (0.130) | 0.479*** (0.118) | 0.281** (0.129) | 0.321*** (0.123) |
| US list | 0.469 (0.146)*** | 0.278** (0.135) | 0.473*** (0.154) | 0.419*** (0.146) | 0.401*** (0.152) | 0.383*** (0.140) |
| Manufacturing | -0.112 (0.097) | -0.015 (0.088) | -0.053 (0.102) | -0.111 (0.096) | -0.041 (0.101) | -0.019 (0.091) |
| Trading | 0.013 (0.176) | 0.115 (0.157) | -0.068 (0.183) | 0.032 (0.175) | -0.063 (0.180) | 0.045 (0.166) |
| Year 2005 | -0.236 (0.069)*** | -0.258*** (0.069) | -0.234*** (0.073) | -0.195*** (0.069) | -0.173** (0.073) | -0.271*** (0.074) |
| Year 2006 | -0.161 (0.060)** | -0.138** (0.059) | -0.212*** (0.061) | -0.132** (0.060) | -0.174*** (0.062) | -0.226*** (0.062) |
| IDV (H1) | - | 0.006** (0.003) | - | - | - | 0.015*** (0.006) |
| UAI (H2) | - | -0.025*** (0.002) | - | - | - | -0.025*** (0.002) |
| PDI | - | 0.008*** (0.003) | - | - | - | 0.022*** (0.005) |
| MAS | - | -0.003 (0.002) | - | - | - | -0.004 (0.003) |
| Investor protection (H3) | - | 0.112*** (0.019) | - | - | 0.115*** (0.019) | 0.057*** (0.024) |
| Strictness of code (H4) | - | 0.056*** (0.015) | - | - | 0.068*** (0.017) | -0.067*** (0.027) |
| F-value | 9.910*** | 27.670*** | 13.050*** | 9.820*** | 12.850*** | 26.400*** |
| R-squared | 0.056 | 0.182 | 0.087 | 0.065 | 0.099 | 0.194 |
| N (obs) | 2,148 | 2,061 | 1,823 | 2,148 | 1,823 | 1,823 |
| N (firm clusters) | 812 | 769 | 670 | 812 | 670 | 670 |

This table presents the multivariate regression results. Reported are coefficient estimates and standard errors (in parentheses). Panel A shows the results on the basis of OLS. Panel B presents standard errors corrected for clustering at the firm level. The dependent variable in all regressions is ICDisc. The variables are defined as follows. ICDisc = internal control disclosure score based on a self-constructed index comprising 7 disclosure items. Firm size = natural log of total assets in €thousand as per year end (translated into Euros using the closing rate). Big 4 auditor is one if the firm's financial statements have been audited by Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers and zero otherwise. US list is one if the firm's shares are cross-listed in the US. Manufacturing/trading industry is one if the firm is active in the manufacturing or trade sectors, respectively and zero otherwise. IDV, UAI, PDI, and MAS refer to the scores by Hofstede (2001). Investor protection is the product of the anti-director rights index (La Porta et al., 1998) and the rule of law index according to the World Governance Index (Kaufmann et al., 2008). Strictness of code is a self-constructed measure based on the procedure by Zatonni and Cuomo (2008) to code recommendations with respect to internal control. Code issuer is one if the code has been issued by the country's stock exchange or an investors' association and zero otherwise.

The incremental R squared refers to the increase in R squared compared to the controls only model. p-values are one-tailed for directional hypotheses and two-tailed otherwise; with ***, **, * indicating significance at the 1%, 5%, and 10% levels, respectively.

APPENDIX: Internal control disclosure index

This appendix presents the seven separate reportable items that comprise the internal control disclosure index we used to measure the amount of information on internal control firms disclose in their annual reports.

| Item | Description |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategic and operational risk | This item takes a value of 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. |
| Financial risk | This item takes a value of 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. |
| Financial reporting risk | This item takes a value of 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. |
| Responsibility | This item takes a value of 1 if management acknowledges explicitly its responsibility for internal control in the annual report. |
| Internal control measures | This item takes a value of 1 if the annual report discloses information with respect to the firm's activities to control risks. |
| Framework | This item takes a value of 1 if the annual report discloses information with respect to the framework (e.g., COSO, CoCo) the firm uses to design its internal control. |
| Effectiveness | This item takes a value of 1 if the annual report presents an opinion on the effectiveness of internal control. |

ENDNOTES

[1] Almost all evidence indicating the negative association between disclosure level and the firm's cost of capital is from the US which has well-developed capital markets with strong investor protection (La Porta et al., 1998). Francis et al. (2005) show a similar relationship for a sample of about 700 firms for 34 countries outside the US. Their findings provide "evidence on the global importance of voluntary disclosure in gaining access to lower cost of capital" (2005: 1159).

[2] US research shows that reporting internal control weaknesses as required by Sections 302 and 404 of SOX is associated with firm and governance characteristics. For instance, Ashbaugh-Skaife et al. (2007) and Doyle et al. (2007) find that firms with more complex operations, are undergoing restructuring, are smaller, younger, and financially weaker are more likely to disclose weaknesses in internal control. Hoitash et al. (2009) document that more accounting and supervisory experience among audit committee members as well as greater board strength are associated with a lower likelihood of disclosing internal control weaknesses. Other studies examine the relationship between internal control weaknesses and financial reporting quality. These studies demonstrate firms with internal control weaknesses more strongly manage their earnings (e.g., Ashbaugh-Skaife et al., 2008) and are associated with lower management forecast accuracy (Feng et al., 2009).

[3] Hofstede (2001) defines his four dimensions as follows. Individualism stands for a preference for a loosely knit social framework in society wherein individuals are supposed to take care of themselves and their immediate families only. Its opposite, collectivism, stands for a preference for a tightly knit social framework in which individuals can expect their relatives, clan, or other in-group to look after them in exchange for unquestioning loyalty. Power distance is the extent to which the members of a society accept that power in institutions and organizations is distributed unequally. Uncertainty avoidance is the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. Masculinity stands for a preference in society for achievement, heroism, assertiveness, and material success. Its opposite, femininity, stands for a preference for relationships, modesty, caring for the weak, and the quality of life.

[4] Gray (1988: 8) defines his accounting values as follows. Professionalism refers to a preference for the exercise of individual professional judgment and the maintenance of professional self-regulation. Uniformity refers to a preference for the enforcement of uniform accounting practices between companies, and for the consistent use of such practices over time, as opposed to flexibility in accordance with the perceived circumstances of individual companies. Conservatism refers to a preference for a cautious approach to measurement so as to cope with the uncertainty of future events, as opposed to a more optimistic, laissez-faire, and risk-taking approach."

[5] The common-law countries in this study include: Australia, India, Malaysia, South Africa, Thailand, and the UK.

[6] The Scandinavian code-law countries in this study include: Denmark, Finland, and Sweden.

[7] The German code-law countries in this study include: the Czech Republic, Germany, Hungary, Japan, Korea, Poland, and Switzerland.

[8] The French code-law countries in this study include: Brazil, France, Greece, Indonesia, Italy, Mexico, Russia, Spain, and Turkey.

[9] In the regression analyses we include the natural log of total assets as our firm size measure to get around the issue of homoscedasticity. In addition, we winsorize all continuous variables at three times the standard deviation to reduce the influence of outliers.