Country-Specific Drivers of the Value Relevance of Goodwill Impairment Losses

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Acknowledgement
We are grateful to the two anonymous reviewers and the editor (Robert Larson) for their helpful comments that have greatly improved the paper. We also thank Hussein Halabi, Godfred Afrifa, and the discussants and participants at the 2018 Cross Country Perspectives in Finance Conference (Guangzhou, China) for their helpful comments and suggestions on early drafts of this paper. We appreciate the help provided by Peng Cheng and the technical and support staff
at the International Business School Suzhou (IBSS) and the Xi'an Jiaotong-Liverpool University (XJTLU).

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Abstract

This study is the first to analyze the value relevance of goodwill impairment losses (GIL) in an international context; therefore, it builds a link between institutional, cultural, and religious factors and cross-country variations in the relevance of GIL. Using a sample of 18,143 firm-year observations drawn from 21 countries during the period 2005–2018, we find that firms, on average, have reported GIL that are value relevant to their investors. However, consistent with the litigation perspective, the value relevance of GIL is found to be substantially higher for firms domiciled in countries with high-level institutional quality (IQ) than for firms in countries where IQ is relatively low. Our findings remain robust after controlling for macroeconomic effects or excluding observations from the biggest countries, which constitute a substantial proportion of the data set that we analyze. Additional tests show that institutional effects, although absorbing religion, did not supersede or restrain cultural effects, suggesting that social norms also influence the relevance of impairment information. Our evidence introduces a new explanation for heterogeneity in value relevance of goodwill impairments, and adds to research on the effects of legal and social norms on value relevance.

Keywords: goodwill impairments, value relevance, institutions, culture, religion

1. Introduction

The relationship between firm value and financial statement items has been the subject of numerous studies. Landsman (2007), for example, provides a review of the capital market literature that examines the usefulness of fair value accounting information to investors. An accounting number that can potentially convey information about future earnings and cash flows, but whose relevance has not been examined in an international context, is that of goodwill impairments.

The International Accounting Standard Board (IASB) claims that, unlike the straight-line approach of amortization,[2] the impairment-only model allows managers to convey private information on (decreases in) future cash flows to the market, and thus report impairment losses that are more economically reliable and hence more value relevant (i.e., informative) to investors, creditors and analysts.[3]

Several studies examine this claim and find mixed evidence on the association between firms' impairment losses and their equity market values (Bens, Heltzer, & Segal, 2011; Bostwick, Krieger, & Lambert, 2016; Jarva, 2009; Lapointe-Antunes, Cormier, & Magnan, 2009; Z. Li, Shroff, Venkataraman, & Zhang, 2011; Oliveira, Rodrigues, & Craig, 2010). However, these studies were carried out in the context of a single country and have failed to consider differences in institutional settings and their impact on the quality of impairment reporting. This in turn makes their findings questionable and less conclusive because the institutional effect is often missing.

[2] Goodwill amortizations lack relevance and economic reality (Chalmers, Godfrey, & Webster, 2011; Jennings et al., 2001) because they do not allow managers to ascertain whether or not amortization charges reflect the reduction in the value of goodwill and so do not provide new information to the market (Hamberg & Beisland, 2014).

[3] "The IASB [concluded that]…if a rigorous and operational impairment test could be devised, more useful information would be provided to users of an entity's financial statements" (IASB's Basis for Conclusions on IAS 36 Impairment of Assets).

Prior cross-country value relevance studies (Alford, Jones, Leftwich, & Zmijewski, 1993; Ali & Hwang, 2000; Brown Jr, He, & Teitel, 2006; Cahan, Emanuel, & Sun, 2009; Choi, Kim, & Lee, 2011; DeFond, Hung, & Trezevant, 2007; Hung, 2000; Siekkinen, 2016) provide evidence suggesting that the value relevance of accounting numbers varies largely across countries because of differences in their legal institutions. Such differences relate to the type of financial systems (bank-oriented vs. market-oriented); the type of governance models (Continental vs. British-American); the strength of shareholder protection (Cahan et al., 2009; DeFond et al., 2007; Hung, 2000; Knauer, Li, Sommer, & Wöhrmann, 2015; Siekkinen, 2016); and the strength of legal enforcement (Landsman, Maydew, & Thornock, 2012).

The impairment test of goodwill (see Appendix 1 for details on accounting for goodwill impairment under IFRS) requires the use of professional judgment, which leaves managers with a great deal of discretion in determining the amount and timing of its impairments (Boennen & Glaum, 2014; Filip, Jeanjean, & Paugam, 2015; Glaum, Landsman, & Wyrwa, 2018; K. K. Li & Sloan, 2017; Ramanna, 2008; Ramanna & Watts, 2012; Watts, 2003). In his 2012 speech at the FEE Conference on Corporate Reporting of the Future, Horst Hoogervorst, the Chairman of the IASB, voiced skepticism over the reliability of GIL:

> Most elements of goodwill are highly uncertain and subjective, and they often turn out to be illusory. Given its subjectivity, the treatment of goodwill is vulnerable to manipulation of the balance sheet and the P&L…in practice, entities might be hesitant to impair goodwill, so as to avoid giving the impression that they made a bad investment decision…The question is if our current rules provide sufficient rigor to these decisions.

The impairment discretion, on one hand, allows managers to reveal their expectations about a firm's fundamentals, and hence record impairment losses that accurately reflect the changes in the value of goodwill (efficiency perspective). On the other hand, the impairment discretion gives managers the flexibility they need to more easily justify their discretionary impairment choices (opportunistic perspective) and this in turn reduces the reliability of

goodwill impairments and, thus, attenuates their relevance. However, the ability of managers to use their accounting discretion opportunistically depends on their reporting incentives, which are shaped by the strength and quality of their country's legal institutions (Ball, 2006; Ball, Robin, & Wu, 2003; Burgstahler, Hail, & Leuz, 2006; Leuz, 2010). Whether strong legal institutions in a country increase the information content of impairment information accruing to investors remains an interesting and instructive research question that deserves further investigation.

Our research is intended to shed light on this question by studying the association between GIL and equity market values using a sample of 18,143 firm-year observations during the period 2005–2018, which are drawn from 21 countries that have mandated IFRS. The study's argument is that differences between countries in terms of their legal institutions, culture, and religion can have a notable effect on the information content of GIL, which, in turn, results in different degrees of value relevance of GIL across countries with different institutional, cultural, and religious frameworks.

Our main findings show that the value relevance of GIL reported by firms from countries characterized by a high level of IQ (i.e., stronger investor protection, more effective legal enforcement, and well-developed stock markets) are substantially higher than those reported by firms from countries with low-level of IQ. Additional findings show that firms in countries with certain cultural traits (such as high individualism, low power distance, and low uncertainty avoidance) tend to report significantly more value-relevant GIL than their counterparts in countries characterized by relatively low individualism, high power distance, and high uncertainty avoidance. This indicates that cultural norms in a country determines the relevance of impairment information at least as strongly as the quality of legal institutions in that country.

Our findings make two major contributions to the literature, one on the value relevance of goodwill impairment disclosure, and the other on the country-level drivers of the value relevance. Prior research (e.g., Alciatore et al., 2000; Hirschey and Richardson, 2002; Lapointe-Antunes et al., 2009) focuses almost exclusively on value relevance of goodwill impairments in a domestic context (i.e., single-country studies), and there is a lack of cross-country evidence regarding factors affecting the value relevance of goodwill impairments. Early cross-country evidence (e.g., Laghi, Mattei, & Di Marcantonio, 2013) suggests that the degree of value relevance of goodwill impairments varies across different countries; the authors call for further research to improve our understanding of cross-country differences in terms of their value relevance of goodwill impairments, which could be related to "country-specific factors such as cultural, environmental and regulatory aspects" (ibid, p. 32).

Motivated by this call for further research, our study analyzes the value relevance of goodwill impairments in an international context and attempts to build a link between institutional, cultural, and religious factors and cross-country variations in the value relevance of goodwill impairments. It also develops more robust measures of country-level institutions using structural equation modeling (SEM), which allows us to empirically test for the reliability and validity of measurements of institutions in terms of their ability to reflect more accurately the concepts they seek to measure. Overall, our study introduces a new explanation for heterogeneity in value relevance of goodwill impairments and contributes to the literature regarding the effects of legal and social norms on value relevance.

The paper is structured as follows. Section 2 reviews the literature concerning the value relevance of GIL and develops the study's hypothesis. Section 3 explains the data and research design, and Section 4 reports the study's findings. Section 5 draws the conclusion.

2. Related Literature and Hypothesis Development

There are a considerable number of studies that have examined the value relevance of GIL. Using a sample of 78 full-cost firms that recorded a total of 148 ceiling test write-downs during the 1984–1987 period, Alciatore et al. (2000) examine the relationship between security returns and asset write-downs following the application of the ceiling test, and find evidence of a statistically significant correlation between asset write-downs and contemporaneous returns. However, at the same time they find a stronger correlation between asset write-downs and lagged returns. Taken together, the results obtained indicate that, despite the market's response to some of the decline in asset value, much of the stock price adjustments as a result of this decline occurred earlier (i.e., before the write-down was reported).

Hirschey and Richardson (2002) find that the information effects tied to the announcement of goodwill write-downs reported by firms listed on either the New York Stock Exchange, the American Stock Exchange, or NASDAQ are economically meaningful. More specifically, whereas the one-year pre-announcements of goodwill write-offs explain 40% of the price decline in the firm's shares, goodwill write-offs explain only 11% of the fluctuations of the firm's share price in the post-announcement period. Taken together, their results indicate that "most, but perhaps not all, of the negative valuation effects tied to goodwill write-off announcements are realized by the end of the announcement period" (p. 186).

In the Canadian context, Lapointe-Antunes et al. (2009) investigate the value relevance and timeliness of transitional GIL, and find a negative association between firms' impairment losses and their market values of equity (per share), suggesting that impairment losses are perceived by investors as reliable measures of the decline in the value of goodwill, and thus consider them in their valuation of the firm's equity. They also find that the negative association between impairment losses and share price is even stronger in the presence of financially competent and independent directors on the audit committee. In addition, their

timeliness tests show a negative and statistically significant association between impairment losses and firms' past returns but at the same time the association between impairment losses and contemporaneous stock returns is not significant. Based on evidence from their study, the authors conclude that impairment losses are already impounded in firms' share prices, and thus only represent "catch-up" adjustments of their valuation assessments.

Oliveira et al. (2010) investigate the value relevance of goodwill and other intangible assets using a sample of 354 firm-year observations of non-financial firms listed on the main market of the Portuguese Stock Exchange between 1998 and 2008. They find evidence that earnings and goodwill or other intangible assets are strongly associated with the firms' stock prices during the study period. However, their findings show greater sensitivity to the adoption period of IAS/IFRS in Portugal. Specifically, whereas the adoption of IAS/IFRS in 2005 appears to have had a negative impact on the relevance of earnings and no impact on the relevance of intangibles, it had a positive impact on the value relevance of goodwill. The overall findings are consistent with the argument that goodwill, which is subjected to impairment reviews rather than being amortized, is more realistically valued, and thus more closely associated with firms' market values (Al Jifri & Citron, 2009). This can be true because goodwill amortizations do not explain negative earnings and so do not increase the relevance of earnings but can detract from it (Al Jifri & Citron, 2009; Jennings, LeClere, & Thompson, 2001; Moehrle, Reynolds-Moehrle, & Wallace, 2001).

Hamberg and Beisland (2014) compare the value relevance of goodwill amounts and goodwill impairment or amortization charges reported in accordance with the Swedish GAAP (2001–2004) with those reported in accordance with the IFRS (2005–2010) using 2,052 firm-year observations. They find evidence that goodwill amortizations have not been value relevant under either the Swedish GAAP or IFRS, that goodwill amounts have remained a significant determinant of the market value of equity, but that goodwill impairments have lost

their relevance under IFRS. Their findings are consistent with the argument that the introduction of IFRS appears to have increased the value relevance of balance sheet items at the expense of income statement items (Paananen & Lin, 2009).

Bostwick et al. (2016) investigate the (predictive) relevance of goodwill impairments by examining the association between goodwill impairments and future cash flows over the 2001–2009 period. They find evidence of a significant and inverse association between goodwill impairments and one-year-ahead cash flows; they also find that the inclusion of goodwill impairments in the cash flows prediction model has incrementally improved next-year cash flows prediction and forecasting. Based on evidence from their study, the authors conclude that goodwill impairments provide useful information to investors, creditors, analysts, and other users who are interested in predicting future cash flows.

The review of the above literature provides mixed evidence (D'Arcy & Tarca, 2018). Whereas some studies (e.g., Lapointe-Antunes et al., 2009) find that goodwill impairments are reliable measures of the reduction in the book value of goodwill, and so are considered in the firm's market valuation, others (e.g., Hamberg & Beisland, 2014) note that impairment decisions or announcement of goodwill impairments are often made opportunistically and consequently their relevance is compromised. In particular, the impairment-only model creates a "buffer" against any future GIL, in part because of unrecognized internally generated goodwill (Glaum et al., 2018), and in part because of measurement or recognition conservatism in the accounting conservatism in the acquired entity and unpaid expected synergies (Johansson, Hjelström, & Hellman, 2016). Several studies (AbuGhazaleh, Al-Hares, & Roberts, 2011; Beatty & Weber, 2006; Hayn & Hughes, 2006; Li & Sloan, 2017; Ramanna & Watts, 2012) find that impairment decisions are primarily driven by agency-based incentives (e.g., debt contracting and executive remuneration), which affect managers' decisions to either accelerate or delay the recognition of any impairment losses.

The mixed evidence that studies report concerning the value relevance of GIL may be the result of the fact that these studies did not consider the country's institutional environment within which the sample firms operate. In the US context, the findings of Ramanna & Watts (2012) and Watts (2003) suggest that SFAS 142 allows a number of subjective or unverifiable estimates in the estimation of GIL that give managers a great deal of discretion in determining their magnitude and timing and this, in turn, reduces the reliability (i.e., representational quality) of these impairments and hence their effectiveness as a signal of acquisition success or failure (i.e., relevance). Beatty & Weber (2006) provide further evidence that firms' choices accorded by SFAS 142 are affected by various incentives such as equity market concerns, debt contracting, bonus, turnover, and exchange delisting incentives. This, in conjunction with the findings of other studies, which show that the recognition of GIL is driven not only by economic but also by opportunistic motives like big-bath incentives (e.g., Riedl, 2004), leads us to the suggestion that the value relevance of GIL is country-dependent. This is because investors will consider GIL reported by firms in countries with high-level IQ to be much less prone to manipulation because of the pervasiveness of the monitoring systems in those countries and hence more relevant than those reported in countries with low-level IQ.

A considerable number of IFRS studies support this because they show that the quality of financial reporting depends not only on the de jure adoption of high-quality accounting standards but also on the incentives of firms, auditors, and enforcement institutions to ensure that their de facto application has representational quality and is consistent with the objectives of the standards. For instance, studies (Burgstahler et al., 2006; Bushman & Piotroski, 2006; Florou, Kosi, & Pope, 2017; Hung, 2000; Isidro & Raonic, 2012; Leuz, Nanda, & Wysocki, 2003) provide evidence that firms in countries with high-quality judicial

systems, strong enforcement institutions, and adverse litigation risks have strong incentives to fulfill the standards' requirements.

Also consistent with the litigation risk perspective, other researchers (e.g., Brown & Moser, 2016; Hopkins, 2017) pinpoint that legal rules play a large and more important role in deterring managers from engaging in any improper or illegal activity, such as financial misreporting, because (i) they are subject to greater scrutiny in such countries and (ii) investors can sue those managers easily on behalf of the corporation for breaching their fiduciary duty.

The deterrence effects of legal rules are particularly crucial in countries with high-level IQ (e.g., countries with high investor protection, strong enforcement, and well-developed markets). This is what the international accounting research suggests as it shows that firms in countries with strong legal institutions have higher accounting quality (e.g., Leuz, Nanda, & Wysocki, 2003; Wysocki, 2005), and hence their accounting information possesses higher value relevance compared with firms in weak institutions (e.g., Cahan et al., 2009; DeFond, Hung, & Trezevant, 2007). These studies suggest that the higher relevance of (earnings) information depends on the ability of firms' share prices to reflect that information; the latter depends on the strength of a country's legal protection given to their investors to trade on that information. Therefore, in those countries, information accruing to investors is likely to be the basis for trading as long as their investments are well protected by the law. As Houqe, Van Zijl, Dunstan, & Karim (2012) state, "lower investor protection breeds managerial discretion within the organization, which impedes production of high quality accounting numbers" (p. 8).

Other studies point to the influence of the country's financial system. Firms operating in countries whose financial system is market-oriented have strong incentives to disclose high-quality information in order to protect the interests of investors in their role as capital

providers (Garcia Osma & Pope, 2011; Hail, Leuz, & Wysocki, 2010; Isidro & Raonic, 2012; Schleicher, Tahoun, & Walker, 2010). In contrast, firms in countries whose financial system is bank-oriented have different types of incentives, mainly to protect the interests of creditors "by limiting the claims of outside shareholders to dividends" (Hail et al., 2010, p. 361).

Leuz (2010) develops a more analytical framework for the purpose of examining the influence of institutional environments on the quality of financial reporting by classifying countries into three clusters on the basis of the similarities of their institutional characteristics. Cluster (1) consists of countries characterized as outsider economies with strong legal enforcement (e.g., the UK and the US). Cluster (2) comprises countries characterized as insider economies with strong enforcement (e.g., Germany and Japan). Cluster (3) contains countries characterized as insider economies with weak enforcement (e.g., Italy and India). Leuz (2010)'s findings reveal that earnings and disclosure quality is higher for firms in Cluster (1) than for firms in Clusters (2) and (3).

Moreover, we have a considerable literature on cross-country differences in the value relevance of earnings (Alford et al., 1993; Ali & Hwang, 2000; Brown Jr et al., 2006; Cahan et al., 2009; Landsman et al., 2012; Siekkinen, 2016; Veith & Werner, 2014). Even more specifically for the field of this study, we have evidence on the effects of institutions on firms' disclosures related to goodwill (Mazzi, Slack, & Tsalavoutas, 2018), business combinations, and impairment testing of assets (Glaum, Schmidt, Street, & Vogel, 2013). In addition, there is evidence to support and illustrate the influence of institutions on the timeliness of asset impairments (Amiraslani, Iatridis, & Pope, 2013) and the determinants of goodwill impairment decisions (Glaum et al., 2018). Specifically, Amiraslani et al. (2013) analyze the timeliness of asset impairments across European countries and find that firms in countries with strong regulatory and institutional settings (e.g., the UK) tend to recognize

impairment losses in a more timely fashion than their counterparts in countries where regulatory scrutiny is relatively weak (e.g., Italy).

In another study, Laghi et al. (2013) examine the value relevance of goodwill impairments using a sample of firms drawn from six European Union countries (France, Germany, Italy, Portugal, Spain, and the UK) in the period 2008–2011, and find evidence in favor of the relevance of goodwill impairments. However, country factors appear to influence the degree of the relevance of GIL. Specifically, only for French firms are GIL value relevant for all years under study. In addition, the effects of these factors appear to be mitigated during the financial crisis as the authors report that only for 2008 are there no differences in the value relevance of the impairment of goodwill across these six countries.

More recently, Glaum et al. (2018) investigate the impact that the strength of enforcement of accounting and auditing standards may have on the determinants of goodwill impairment decisions and their timeliness, using a sample of 9,468 firm-year observations drawn from 21 countries in which IFRS are in use. For this purpose, they partitioned countries into High and Low groups based on the strength of accounting and auditing enforcement regimes. Their findings show that firms in high-enforcement countries tend to be more timely and more responsive to declines in the economic values of their assets than their counterparts in low-enforcement countries, and so report goodwill impairments that are, on the one hand, strongly (negatively) associated with contemporaneous stock returns, and on the other, weakly associated with lagged stock returns.

In the light of the above review of literature and discussion, there are strong theoretical and empirical grounds for arguing that the quality of financial reporting under IFRS is higher when it is implemented in countries with high-quality institutional environments. Therefore, it is reasonable to suggest that such a relationship will hold with respect to the reporting of GIL.

Despite the wealth of empirical evidence supporting the above argument, there is also theoretical reasoning as well as empirical evidence opposing this argument. To the extent to which countries' legal institutions compel management to record GIL that are necessary or expected by investors,[4] the reporting of these impairment losses should not provide any new or additional information to investors, and so it should exhibit low or no association with market values.[5] In contrast, firms in low-level IQ countries have more room to exert their discretion opportunistically and so record GIL amounts that are lower than the "expected" impairment amounts. In this setting, investors assume that their investee firms only record goodwill impairment amounts that are lower than the true or expected impairment amounts (Li & Sloan, 2017), and so react more negatively to the reporting of GIL.

Ultimately, it is an empirical question whether IQ increases or decreases the value relevance of GIL. Our research is intended to shed light on this question by testing whether the effect of IQ on the association between GIL and market value is incremental or decremental. If the first scenario were true, this would demonstrate that the value relevance of GIL is higher for firms in high-level IQ countries, because investors perceive these impairment losses as being sufficiently reliable measures of the decline in the value of goodwill to incorporate them in their valuation models. If the second scenario were true, this would demonstrate that the value relevance of GIL is higher for firms in low-level IQ countries, because investors would overreact to the reporting of GIL that are considered less accurate (or biased).

Based on the opposing viewpoints and conflicting evidence, this study investigates the effect of IQ on the value relevance of GIL but makes no explicit prediction about the direction of this effect. Thus, in light of the above discussions, our hypothesis (stated in null form) is as follows:

[4] Investors expect an impairment loss to be "necessary" if a firm's market value of equity is consistently and significantly below its book value of equity (see, e.g., Ayres, Campbell, Chyz, & Shipman, 2019).

[5] In line with this argument, Knauer and Wöhrmann (2016) document "a negative capital market reaction to announcements of unexpected goodwill write-offs" (p. 421).

H1: *The association between firms' goodwill impairments and equity market values is not associated with the level of IQ.*

3. Data and Research Design

3.1 Value Relevance Model

Following previous studies in this strand of literature (e.g., Lapointe-Antunes et al., 2009), we modify Ohlson's (1995) valuation model by separating goodwill and its impairment losses from earnings and book value of equity. Goodwill is an intangible asset that provides returns for investors, so the act of writing it off signals to investors that management has changed its assessment of its value and expected returns. Therefore, impairments of goodwill should reduce a firm's stock market value.

According to Lapointe-Antunes et al. (2009), the negative association between firms' goodwill impairments and their market equity values is consistent with "investors perceiving losses as being sufficiently reliable measurements of a reduction in the value of goodwill to incorporate them in their valuation assessments" (p. 56). Hence the following model is used to evaluate the value relevance of GIL:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 EARN_{it} + ¿\, \beta_3 GWA_{it} + B_4 GIL_{it} + \varepsilon \qquad (1)$$

MV_{it} is the market value of firm i's equity measured three months after fiscal year end.[6] BV_{it} is the value of firm i's equity at the end of the year (wherein goodwill is tested for impairment) minus goodwill's carrying amount at the same year end. $EARN_{it}$ is the earnings before interest and taxes at the end of the year wherein goodwill is tested for impairment plus the amount of GIL reported at the same year end. GWA_{it} is the goodwill's carrying amount at the end of the year wherein goodwill is tested for impairment plus the amount of GIL

[6] We divided the dependent variable by 100 for presentation purposes (see, e.g., Albertazzi et al., 2014; Lee & Lin, 2018).

reported at the same year end. $GIL_{it}$is goodwill impairment amounts reported at the end of *t*. All variables are defined in Table 1.

[Insert Table 1]

The value relevance model is estimated using ordinary least squares, after eliminating outliers by winsorizing at the first and ninety-ninth percentiles (e.g., Isidro and Raonic, 2012). We also include industry, country, and time fixed effects to control for any systematic heterogeneity in industries, countries, and time periods, which are likely to affect value relevance comparisons. Similar to Lapointe-Antunes et al. (2009), all variables are scaled by the number of common shares outstanding at the end of the year in which the impairment test is performed.

According to Barth, Beaver, & Landsman, (2001), "an accounting amount is defined as value relevant if it has a predicted association with equity market values" (p. 79). Hence, GIL_{it} is regarded as value relevant if its coefficient (β4) is found to be significantly different from zero. In our empirical setting, we posit that GIL_{it} is valued differently and so the valuation coefficient β4 is expected to differ significantly across countries with different levels of IQ. In order to perform such a comparison, we re-estimate the above model after introducing a dummy variable (IC_i¿ that takes the value of one if the firm *i* is domiciled in a country that belongs to a high-quality institutional cluster (H-IC) and zero if it is domiciled in a country that belongs to a low-quality institutional cluster (L-IC). The model is then developed as follows:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 EARN_{it} + ¿\ \beta_3 GWA_{it} + B_4 GIL_{it} + B_5 IC_i + B_6\ IC_i \times GIL_{it} + \varepsilon \qquad (2)$$

In order to examine whether there is a systematic difference in the value relevance of GIL between the two institutional clusters, we allow the variableIC_i to interact with GIL_{it}. If the coefficient of the interaction term $(IC_i \times GIL_{it})$ is negative and statistically significant, then it

can be argued that the IQ has enhanced the relevance of GIL. On the other hand, if the coefficient of the interaction term ¿) is statistically significant but positive, it can be inferred that GIL have "partially" lost their relevance. If the coefficient of the interaction term ¿) is statistically insignificant, it can be argued that the quality of legal institutions in a country has no impact on the relevance of GIL.

3.2 Sample and Data

Our sample includes 18,159 firm-year observations over the sample period 2005–2018 that were derived from 21 countries with mandated IFRS and enough observations to estimate our models.[7] Hence, our sample excludes non-IFRS firms and firms in the financial services industry. In line with the literature (e.g., Mazzi et al., 2018), we restrict the sample to non-financial industries to increase the sample homogeneity and comparability of our research findings. We also exclude firm and year observations with negative goodwill or impairment and missing data. All accounting- and market-related data were obtained from Thomson Reuters DataStream.

3.3 Cluster Membership

Our regression models require the classification of countries into clusters on the basis of their IQ. For this purpose, rigorous cluster analysis was undertaken.

First, in order to distinguish between countries with high- and low-level IQ, we perform a K-means cluster analysis using three distinct institutional factors: *Investor Protection, Enforcement Quality,* and *Equity Market Development*. These factors are developed, and subsequently empirically tested for reliability and validity using a two-step approach: (i)

[7] Since the number of potential sample firms varies considerably across countries in line with differences in the size of a country's economy and equity market, as well as the availability of complete data, it was decided to screen each country sample with regard to the total number of firm/year observations with goodwill. If the number of firm/year observations with goodwill was fewer than 50 for any country, the firms of that country were dropped from the study sample. We use this restriction to "avoid lopsided representation of countries in the study" (Jaggi and Low, 2000, p. 504) and to "increase the homogeneity of the sample and the comparability of the results across countries" (Hung, 2000, p. 441).

exploratory factor analysis (EFA), and (ii) confirmatory factor analysis (CFA) for a sample of 69 countries.[8] In the first step, we perform an EFA on 48 country-level items selected on the basis of their face values (i.e., content validity). These items are drawn from the following databases: *World Development Indicators, Worldwide Governance Indicators, Global Financial Development, Doing Business Report, Economic Freedom of the World,* and *Global Competitiveness Report*. The EFA results in 29 items,[9] which are assigned to three distinct factors. Each of these factors has an eigenvalue greater than 1.00 and jointly explain 81.84% of the total variance in the original data. We name the first factor *"Investor Protection"* because it captures the level of de jure investor protection provided by a given country's regulations and legal provisions; the second factor is named *"Enforcement Quality"* because it captures the degree of de facto effectiveness of the country's institutions and regulatory system; and the third factor is named "*Equity Market Development"* because it captures the depth and breadth of the country's equity capital market.

In the second step, we perform a CFA with Amos 22 in order to test for the reliability and validity of the EFA results and reach the most parsimonious measurement model (see Appendix 3). The final model consists of 22 items.[10] These are highly reliable because their individual Cronbach's alpha values are greater than the accepted reliability threshold of 0.7 and the corresponding average variance extracted values are above the recommended level of 0.5 (see Appendix 4) and greater than the corresponding squared inter-construct correlation estimates (see Appendix 5), suggesting that all three factors (*Investor Protection, Enforcement Quality,* and *Equity Market Development*) have fully passed the test of discriminant validity.

[8] Because of space constraints, we only report results related to the 21 countries constituting the study sample. The full table of results for the full 69-country sample is available on request.

[9] An item can be a single indicant or an index that consists of a certain number of indicants.

[10] A full list of these 22 items and their corresponding sources and definitions is shown in Appendix 2.

Appendix 6 reports the classifications of high- and low-level IQ countries (H-IC versus L-IC), and their associated scores for each of the three institutional factors.[11] We find that countries in the H-IC cluster have a relatively higher degree of investor protection, higher quality of law enforcement and, consequently, more developed equity markets. Specifically, we compare the difference in mean (median) among all the firm-year observations in H-IC versus L-IC countries, and find that countries in H-IC have 1.83 (0.92) points higher *Investor Protection*, 2.40 (2.01) points higher *Enforcement Quality*, and 56.60 (54.69) points higher *Equity Market Development*. These differences are all statistically significant at the 1% level.

4. Empirical Results

4.1 Descriptive Statistics

Table 2 shows the total number of firm-year observations per country for the years 2005 to 2018. We find that our sample observations are concentrated in Germany, the UK, France, and Australia. These four countries together comprise more than 50% of the sample observations. This is not surprising; these countries have the largest economies and the largest stock markets among the sample countries. In contrast, firms operating in Ireland and Portugal have a lower representation within the sample (e.g., only 0.58% for Ireland), whereas the rest of the sample observations were somewhat evenly divided between countries with a relatively higher number of firms (e.g., 7.36% for Sweden).

[Insert Table 2]

Table 3 provides the number of observations in each year for 21 countries. As can be seen from the table, the number of observations varies across years. For example, the number of observations was the highest in 2018 (8.85%), followed by the years 2017 (8.37%) and 2016

[11] For example, a Greek firm will have a value of 3.6 for *Investor Protection*, while a French firm will have a value of 7.27. *Equity Market Development* scores are 233 for South Africa, 144 for the UK, 141 for Australia, 127 for Sweden, 96 for France, 61 for Germany, and 43 for Italy.

(8.15%). However, it was the lowest in 2005 and 2006 (3.19% and 5.45% respectively). The table also shows that our sample observations increased from 579 in 2005 to 989 in 2006 and 1,100 in 2007. A likely reason for this is that certain firms were permitted to delay the adoption of IFRS until 2007 (e.g., firms that only have debt securities traded on an EU regulated market, as well as firms that are traded both in the EU and on a regulated third-country market and have already been applying another set of globally recognized accounting standards).

[Insert Table 3]

Table 4 presents the descriptive statistics for the dependent and independent variables for the full sample. The results show an average share price of €18.225 and an average pre-goodwill book value per share of €7.231. The table also shows that the sample firms reported an average earnings per share of €1.923. The average values of goodwill and goodwill impairment loss (per share) are €4.838 and €0.028 respectively.

[Insert Table 4]

Table 5 shows the correlation coefficients and their statistical significance for the variables included in the regression for the full pooled sample. As expected, BV_{it}, $EARN_{it}$, and GWA_{it} are significantly and positively correlated with MV_{it}. The table also shows that the highest correlation coefficient is 0.67 (between BV_{it} and $EARN_{it}$). This is below the conventional threshold above which serious problems of multicollinearity are indicated (Gujarati & Porter, 2009). Besides that, the highest variation inflation factor value is found to be 2.46, indicating that multicollinearity is not an issue in this study.

[Insert Table 5]

4.2 Effect of Institutional Quality

Table 6 shows the results of the regression analyses testing the value relevance of GIL. It also shows that *F*-tests are statistically significant at the 1% level across all model specifications, which indicates that all model coefficients are jointly significant and so provide a good overall fit to data. The explanatory power of the models is also strong with R^2 values ranging from 0.651 (Model 4 of Table 6) to 0.735 (Model 3 of Table 7). Similar to prior research (e.g., Borensztein, Cowan, & Valenzuela, 2013; Cao, Cumming, Qian, & Wang, 2014), the standard errors are clustered by country and year to obtain efficient estimates of coefficients (Petersen, 2009).

Turning to the estimation results, the first column of Table 6 shows the estimated coefficients for the book value per share (BV_{it}), and earnings per share ($EARN_{it}$) are positive and significant as predicted (BV_{it}, $\beta 1 = 0.007$, *t*-statistic = 14.757; $EARN_{it}$, $\beta 2 = 0.020$; *t*-statistic = 8.447). The results also show a significant and positive association between goodwill per share before impairment (GWA_{it}) and MV_{it} (GWA_{it}, $\beta 3 = 0.010$, *t*-statistic = 12.630), which indicates that goodwill does affect the firm's market value.

Turning our attention to the main test of our study, the pooled results reveal that goodwill impairment loss per share (GIL_{it}) is statistically significant with the expected negative sign (GIL_{it}, $\beta 4 = -0.071$, *t*-statistic = −2.733). This is consistent with the findings of prior research (e.g., Laghi et al., 2013; Lapointe-Antunes et al., 2009) demonstrating that goodwill impairments provide information useful to investors who tend to incorporate this information in their evaluation of a firm's market value.

However, further analysis reveals that the relevance or informativeness of GIL is sensitive to the level of IQ in a country. In the fully interacted model (Model 2), the coefficient of GIL_{it} remains negative and significant individually and jointly with its interaction term (see the *F*-

test outcomes reported below the regression estimates). The effect of goodwill impairments (per share) is negative and significant for both high- and low-level IQ clusters, but its absolute magnitude increases for H-IC (from −0.066 to −0.177). The coefficient on the interaction term is also negative, large, and statistically significant at the 1% level ($IC_i \times GIL_{it}$,β6 = −0.111, *t*-statistic = −2.085).[12]

Taken together, our findings show not only statistically but also economically significant differences between these two institutional clusters (H-IC vs. L-IC) in terms of the value relevance of GIL. This result indicates that firms in countries with high-level IQ report more value-relevant impairment losses. This pattern of results is, in general, comparable with the findings of a number of studies (e.g., Ali and Hwang, 2000; Davis-Friday et al., 2006) demonstrating that accounting numbers have relatively low value relevance when corporate governance is weak. Overall, our findings indicate that (i) there are clear differences between investors in different countries and clusters in terms of their perceptions about the importance or relevance of GIL, and (ii) investors are more likely to trust accounting numbers in countries where they feel their investments are well protected by the law (i.e., countries upholding the rule of law).

Because our sample period (2005–2018) includes years that predate, include, and follow the recent financial crisis, we further examine whether the effect of IQ on the value relevance of GIL is attenuated or accentuated by the 2008–09 financial crisis, a period during which the magnitude of impairments and firms' stock returns were affected by the economic consequences of the crisis. In this regard, several authors (e.g., Ball and Shivakumar, 2005; Brown Jr et al., 2006) demonstrate that the relevance of accounting numbers varies across the business cycle. In particular, Bertomeu and Magee (2011) develop a model linking financial reporting quality to the cyclical variations in macroeconomic activity and show that the

[12] We also re-estimated Model 2 without country fixed-effects indicators, and results remain essentially the same as those tabulated (β6 = −0.109, *t*-statistic = −1.998).

quality of financial reporting increases in expansionary times, and then decreases as the economy deteriorates.

In order to control for the effects of the financial crisis on our main findings, we split the sample into three subsamples: pre-crisis (2005 to 2007), crisis (2008 to 2009), and post-crisis (2010 to 2018). We then run separate regressions for each group and report the results in the last three columns of Table 6. We find that the coefficient on the interaction term ($IC_i \times GIL_{it}$) is negative and statistically significant in the period following the global financial crisis (β6 = −0.137, *t*-statistic = −2.148). The sums of the coefficient on goodwill impairments and the coefficient on the interaction term are significant at the 1% level. This evidence dovetails well with Laghi et al. (2013), who argue that "country differences are mitigated or less tangible when the economic cycle is stressed" (p. 46).

In summary, the results in the last three columns of Table 6 suggest that firms across the two institutional clusters failed to report any impairment losses that are relevant or more closely associated with their market values of equity either before or during the crisis period (with one exception for H-IC in crisis period). This indicates that our results are sensitive to the past crisis episodes.

[Insert Table 6]

4.3 Robustness Checks

In this section, we provide several robustness checks of our results. First, we examine the sensitivity of our findings to positive and negative earnings,[13] and re-estimate Model 2 by introducing an interaction term between $EARN_{it}$ and $LOSS_{it}$, which is a binary variable ($LOSS_{it}$) that takes the value of one if $EARN_{it}$ is negative and zero otherwise. The results in

[13] According to Lapointe-Antunes et al. (2009), the coefficient on earnings differs across positive and negative earnings, so assuming it is the same across the two groups can result in model misspecification.

column 1 of Table 7 show that goodwill impairment (per share) and its interaction are qualitatively the same as those reported in Table 6, suggesting that our results are unaffected.

Second, to ensure our results are not influenced by model misspecification, we replicate our value relevance test with an additional macroeconomic control variable: the annual percentage growth rate gross domestic product (from the World Bank). The results in column 2 of Table 7 show that the negative relations between goodwill impairment (and its interaction) and market values remain negative and significant, even after controlling for macroeconomic impact. Overall, this indicates that our findings do not appear to be affected by model misspecification (via omitted variables).

Third, we re-estimate Model 2 after excluding observations from the biggest countries (Australia, France, Germany, and the UK) in the regression sample to ensure that our results are not driven by the overrepresentation of these big countries. The results in column 3 of Table 7 are qualitatively the same as those reported in Table 6, and hence do not alter our conclusion related to the impact of IQ on the relevance of goodwill impairments.

[Insert Table 7]

4.4 Additional Analyses

4.4.1 Effect of the Strength of Auditing and Reporting Standards

In our main analysis, we develop robust metrics for capturing the IQ in a country using SEM. However, prior international accounting studies have been criticized for using a range of "legal" proxies that capture differences between countries in terms of their enforcement of accounting standards. As Brown, Preiato, & Tarca (2014) state, "[legal] proxies are deficient in that they seldom focus explicitly on factors that affect how compliance with accounting standards is promoted through external audit and the activities of independent enforcement bodies" (p. 1). To check the sensitivity of our results to the World Economic Forum's country

scores for "strength of auditing and reporting standards (SARS)", we re-run the basic specification of regression (Equation 2) but include ARS_iinstead of IC_i. Thus, the estimated form of our model is as follows:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 EARN_{it} + ¿\ \beta_3 GWA_{it} + B_4 GIL_{it} + B_5 ARS_i + B_6\ ARS_i \times GIL_{it} + \varepsilon \quad (3)$$

ARS_i is a binary variable that takes the value of one if the firm *i*'s country of domicile has a score higher than the mean score of the index, indicating strong financial auditing or reporting standards, and zero if the firm *i*'s country of domicile has a score below the mean score of the SARS index, indicating weak financial auditing or reporting standards. The empirical results are reported in the first column in Table 8. The coefficient on the interaction term is negative and statistically significant, as expected ($ARS_i \times GIL_{it}$, β6 = −0.145, *t*-statistic = −2.089), suggesting that significant differences exist across the two clusters. These results are consistent with the original findings and provide still further corroborating evidence that IQ is as important as the strength of auditing or reporting standards in explaining the variations in the value relevance of GIL across the firms in our data set.

4.4.2 Cultural Effect

The cultural perspective can provide another explanation for the observed links between cultural attributes and the relevance of impairment losses. This study examines whether the relevance of goodwill impairments is compromised in countries in which managers are culturally inclined to manipulate the timing and amounts of goodwill impairments to achieve certain financial targets.

Several studies (e.g., Hoftede, Hofstede, & Minkov, 2010; Kanagaretnam, Lim, & Lobo, 2011; Smith & Hume, 2005; Tian & Peterson, 2016; Waldman et al., 2006; Zhang, Liang, & Sun, 2013) argue that managers in countries with particular cultural traits (such as low individualism, high power distance, and high uncertainty avoidance) are less concerned with

the needs of out-group members (i.e., outside investors) than with their in-group members (i.e., insiders), more acceptable of "questionable" accounting choices, and so are increasingly inclined to intervene and manipulate accounting records in their attempt to present the desired image and increase their sense of control over future events. Consistent with this line of reasoning, we expect that in these countries, managers have greater influence on impairment choices, and so can more easily influence the reporting of goodwill impairments for opportunistic reasons, thereby reducing the reliability of impairment information, which in turn reduces its relevance.

In order to examine the impact of culture on the relevance of GIL, we then perform then a K-means cluster analysis using three cultural dimension indices of Hofstede (individualism, power distance, and uncertainty avoidance). These are regarded as the most important dimensions that explain much of the cultural differences across countries (Doupnik, 2008), and they are also closely associated with "ethical" decision-making processes (e.g., Goodwin, Goodwin, & Fiedler, 2000; Smith & Hume, 2005; Vitell, Nwachkwu, & Barnes, 1993; Waldman et al., 2006). The result of a K-means cluster analysis shows two distinct clusters, which differ significantly in relation to the three cultural dimensions. Countries in the Type A Cultural Cluster (A-CC) have high individualism, low uncertainty avoidance, and low power distance. Countries in the Type B Cultural Cluster (B-CC) have low individualism, high uncertainty avoidance, and high power distance. We then re-run the basic specification of regression (Equation 2) but include CC_iinstead of IC_i. Thus, the estimated form of our model is as follows:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 EARN_{it} + ¿\ \beta_3 GWA_{it} + B_4 GIL_{it} + B_5 CC_i + B_6\ CC_i \times GIL_{it} + \varepsilon \qquad (4)$$

CC_i is a binary variable that takes the value of one if the firm i is domiciled in a country that belongs to A-CC and zero if it is domiciled in a country that belongs to B-CC. The empirical

results are reported in column 2 in Table 8. The coefficient of goodwill impairments, although negative, is statistically insignificant (GIL_{it}, β4= −0.002, *t*-statistic = −0.049), suggesting that firms in the second cultural cluster (B-CC) failed to report goodwill impairments that significantly affect their market values. In contrast, firms in the first cultural cluster (A-CC) report impairment losses that are negatively and significantly related to their market values (marginal effect = −0.235, *t*-statistic = −4.830).

Results also show that the coefficient on the interaction term has the expected negative sign and is statistically significant ($CC_i \times GIL_{it}$,β6 = −0.234, *t*-statistic = −3.934), suggesting that statistically significant differences exist across the two cultural clusters, consistent with our prediction. Overall, our results indicate that (i) investors in firms belonging to different cultural clusters do differ in terms of their perceptions about the importance of GIL, and (ii) cultural norms in a country determine the relevance of impairment information at least as strongly as the quality of legal institutions in that country.

4.4.3 Religious Effect

From a social norm theory perspective, individuals' behaviors are shaped and determined by the social norms of the society in which they live. Individuals tend to follow the norms that are considered acceptable within their own peer group, and thereby avoid cost or social penalties associated with non-adherence to such norms (Cialdini, 1993; Cialdini & Goldstein, 2004; Kohlberg, 1984; Sunstein, 1996). Therefore, it is suggested that the religious norms in a society serve as a "social" control mechanism (Stavrova, Fetchenhauer, & Schlösser, 2013) through which societal members reward those who are conforming to these norms via social recognition, and respect and sanction those who are violating these norms via open criticism and withdrawal of social support (Horne, 2009; Opp, Hechter, & Opp, 2001).

Thus, high threat of social sanctions can deter managers from engaging in socially illegitimate or ethically unacceptable behaviors (e.g., accounting fraud, insider trading and financial misreporting), which may result in shareholder lawsuits or accounting restatements (Walker, Smither, & DeBode, 2012). Prior studies provide evidence that managers of firms headquartered in countries with strong religious social norms experience a lower incidence of financial reporting irregularities (e.g., McGuire, Omer, & Sharp, 2012), or engage less in earnings management activities (e.g., Halabi, Alshehabi, & Zakaria, 2019; Kanagaretnam, Lobo, & Wang, 2015). Consistent with this line of reasoning, one would expect that, in their attempts to meet society's ethical expectations, firms in countries with high religiosity would endeavor to have their financial performance fairly presented, which should unequivocally improve the reliability of impairment information, and hence its relevance.

In order to test the impact of religiosity on the value relevance of GIL, we split the sample firms into two clusters based on the religiosity scores of their country of domicile, using the 2009 Global Index of Religiosity and Atheism: WIN-Gallup International. A firm is allocated to the More Religious Cluster (M-RC) if the religiosity scores of its country of domicile is above the mean scores of the Gallup-based measure of religiosity, and to the Less Religious Cluster (L-RC) if its religiosity scores are below the mean scores. We then re-run the basic specification of regression (Equation 2) but include RC_iinstead of IC_i. Thus, the estimated form of our model is as follows:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 EARN_{it} + ¿\ \beta_3 GWA_{it} + B_4 GIL_{it} + B_5 RC_i + B_6\ RC_i \times GIL_{it} + \varepsilon \qquad (5)$$

RC_i is a binary variable that takes the value of one if the firm *i* is domiciled in a country that belongs to M-RC, and zero if it is domiciled in a country that belongs to L-RC. Results reported in column 3 of Table 8 show that the effect of goodwill impairments (per share) is negative and significant only for L-RC (GIL_{it},β4 = −0.105, *t*-statistic = −3.495) but not for

M-RC. In addition, results show that the coefficient on the interaction term is positive and statistically significant ¿β6 = 0.124, *t*-statistic = 2.128). The overall results indicate that, contrary to our prediction, firms domiciled in countries with strong religious social norms do not report impairment losses that significantly affect their market values, suggesting that the effect of IQ is greater than the religious effect.

[Insert Table 8]

5. Conclusion

In this study, we investigate the value relevance of GIL in an international context, using a sample of 18,143 firm-year observations (over the period 2005–2018) drawn from 21 countries that have mandated IFRS. We argue that the relevance of GIL depends not only on their ability to reflect the declines of the economic value in goodwill (i.e., their representational quality), but also on whether investors incorporate these impairments in their estimation of firm market valuation, and this in turn depends on the quality of legal institutions. Our initial results show that firms, on average, appear to have reported impairment losses that are value relevant to their investors.

Consistent with the litigation perspective, we find that firms domiciled in countries with high-level IQ tend to report impairment losses that possess higher value relevance than those reported by their counterparts in countries where IQ is relatively low. These results provide support for the argument that the association between firms' goodwill impairments with their market values of equity is moderated by the quality of a country's legal institutions. The higher the level of investor protection, quality of regulatory enforcement, and equity market development, the higher the relevance of goodwill impairments reported to investors.

Our results also provide evidence in support of the role of cultural norms in explaining cross-country differences in relation to the value relevance of GIL. Consistent with our prediction,

our additional analysis reveals that the value relevance of GIL is substantially higher for firms in countries with certain cultural traits – high individualism, low power distance, and low uncertainty avoidance – than for firms in countries characterized by relatively low individualism, high power distance, and high uncertainty avoidance. These findings indicate that cultural norms in a country determine the relevance of impairment information at least as strongly as the quality of legal institutions in that country. Finally, our analysis shows that, contrary to our prediction, firms domiciled in countries with strong religious norms do not report impairment losses that significantly affect their market values, suggesting that that the effect of IQ is greater than the religious effect.

The study's findings improve our understanding of the relevance of impairment losses by providing additional insights into the factors that moderate the association between impairment losses and equity market values. The findings are also of importance to the IASB and other supervisory authorities as they bring to the fore the argument that the IFRS standards will have to be sufficiently rigorous to produce useful (i.e., relevant and reliable) information to investors and other market participants, who have proven to be sensitized to the institutions prevalent in IFRS-adopting countries. Finally, this study paves the way for the development of reliable and valid measures of institutions that can be applied to investigate financial reporting and disclosure issues in an international context.

However, this study is subject to a number of limitations similar to those found in international accounting studies, such as non-inclusion of countries because of the lack of availability of country-level data regarding institutions and religiosity, and the assumption that country's institutions are independent from one another (although in reality national institutions evolve jointly over time) and exogenous (i.e., the direction of causality runs from institutions to accounting practices). Another limitation is that "the value relevance literature's reported associations between accounting numbers and common equity valuations

have limited implications or inferences for standard setting; they are mere associations" (Holthausen & Watts, 2001, p. 3). Thus, it is difficult to know whether the negative association between goodwill impairments and equity market values is causal, especially because impairment losses are driven by adverse economic conditions, which can affect both the impairments and the market values.

Future research needs to examine whether the findings of the present study will hold over time, as the enforcement of accounting standards continues to develop further. More precisely, future research should take steps to determine whether the results are representative of all IFRS-adopting countries, and whether this is of real concern or whether this is a temporary situation and IFRS users will converge, and the diversity will decrease (or even disappear) over time. Finally, future research could also use the study's newly developed (and empirically tested) measures of institutions across many different accounting subjects, and test whether their findings are consistent with the general pattern of the reported results.

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Table 1 Variables definitions

MV_{it}	Market value of firm *i*'s equity measured three months after fiscal year-end (Datastream item identifier: MVC).
BV_{it}	Book value of firm *i* 's equity at the end of the year wherein goodwill is tested for impairment (Datastream item identifier: WC03501), minus goodwill's carrying amount at the same year-end (Datastream item identifier: WC02502).
$EARN_{it}$	Earnings before interest and tax at the end of the year wherein goodwill is tested for impairment (Datastream item identifier: DWEB), plus the amount of goodwill impairments reported at the same year-end (Datastream item identifier: WC18225).
GWA_{it}	Goodwill's carrying amount at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end (Datastream item identifier: WC02502).
GIL_{it}	Goodwill impairments reported at the end of *t* (Datastream item identifier: WC18225).
IC_i	A dummy variable that takes the value of one if the firm *i* is domiciled in a country that belongs to a high-quality institutional cluster (H-IC); and zero if the firm is domiciled in a country that belongs to a low-quality institutional cluster (L-IC)
Investor protection	The (predicted) factor scores computed as linear functions of the observed-variable scores: (1) Revised Anti-Director Rights Index; (2) Anti-Self-Dealing Index; (3) Strength of Investor Protection Index; and (4) Business Extent of Disclosure Index.
Enforcement Quality	The (predicted) factor scores computed as linear functions of the observed-variable scores: (1) Regulatory Quality Index; (2) corporate ethics; (3) strength of auditing and reporting standards; (4) efficacy of corporate boards; (5) protection of minority shareholders; and (6) regulation of securities exchanges.
Equity Market development	The (predicted) factor scores computed as linear functions of the observed-variable scores: (1) the ratio of the number of domestic firms listed in a given country to its population; (2) market capitalization of listed companies (% of GDP); and (3) stock market total value traded to GDP.

Table 2 Sample distribution by country

Country	Obs.	Country	Obs.
Australia	1,579	Italy	647
Austria	340	Netherlands	560
Belgium	445	New Zealand	223
Denmark	530	Norway	575
Finland	715	Poland	746
France	2,657	Portugal	187
Germany	2,813	South Africa	678
Greece	224	Spain	355
Hong Kong	218	Sweden	1,335
Ireland	105	United Kingdom	2,680
Israel	531	Total	18,143

This table presents the sample distribution by country.

Table 3 Sample distribution by year

Year	Obs.	Year	Obs.
2005	579	2012	1,370
2006	989	2013	1,398
2007	1,100	2014	1,422
2008	1,240	2015	1,419
2009	1,272	2016	1,479
2010	1,313	2017	1,518

2011	1,439	2018	1,605
		Total	

This table presents the sample distribution by year.

Table 4 Descriptive statistics for the value relevance model

Variables	Obs.	Mean	Std. Dev.	Q1	Median	Q3
MV_{it}	18,143	18.225	38.030	1.387	5.387	17.554
BV_{it}	18,143	7.231	20.480	0.180	1.539	6.184
$EARN_{it}$	18,143	1.923	4.656	0.090	0.541	1.967
GWA_{it}	18,143	4.838	12.428	0.232	1.064	3.566
GIL_{it}	18,143	0.028	0.116	0.000	0.000	0.000

This table presents descriptive statistics for the variables in the empirical model. MV_{it} is the market value of firm *i*'s equity measured three months after fiscal year-end. BV_{it} is the book value of firm *i* 's equity at the end of the year wherein goodwill is tested for impairment, minus goodwill's carrying amount at the same year-end. $EARN_{it}$ is earnings before interest and tax at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GWA_{it} is the carrying amount of goodwill at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GIL_{it} is goodwill impairments reported at the end of *t*. See Table 1 for all variable definitions.

Table 5 Correlation matrix

Variables	MV_{it}	BV_{it}	$EARN_{it}$	GWA_{it}	GIL_{it}
MV_{it}	1.000				
BV_{it}	0.675*	1.000			
$EARN_{it}$	0.706*	0.675*	1.000		
GWA_{it}	0.579*	0.294*	0.553*	1.000	
GIL_{it}	0.092*	0.031*	0.123*	0.227*	1.000

This table presents the correlation coefficients between the variables in the empirical model. MV_{it} is the market value of firm *i*'s equity measured three months after fiscal year-end (divided by 100). BV_{it} is the book value of firm *i* 's equity at the end of the year wherein goodwill is tested for impairment, minus goodwill's carrying amount at the same year-end. $EARN_{it}$ is earnings before interest and tax at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GWA_{it} is the carrying amount of goodwill at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GIL_{it} is goodwill impairments reported at the end of *t*. See Table 1 for all variable definitions.

* indicate statistical significance at p<5% using two-sided t-statistics.

Table 6 The effects of the IQ and financial crisis on the value relevance of GIL

Variables	(1)	(2)	(3)	(4)	(5)
	Baseline	Institutional clusters	Pre-crisis	Crisis	Post-crisis
BV_{it}	0.007***	0.007***	0.007***	0.008***	0.007***
	(14.757)	(14.748)	(8.346)	(9.118)	(9.958)
$EARN_{it}$	0.020***	0.020***	0.015***	0.013***	0.026***
	(8.447)	(8.446)	(2.834)	(2.743)	(8.293)
GWA_{it}	0.010***	0.010***	0.013***	0.010***	0.009***
	(12.630)	(12.627)	(7.430)	(6.002)	(8.759)
GIL_{it}	-0.071***	-0.066**	-0.083	-0.102	-0.022
	(-2.733)	(-2.402)	(-1.239)	(-1.511)	(-0.750)
IC_i		0.015*	0.038***	0.052***	-0.004
		(1.766)	(2.717)	(2.853)	(-0.731)
$IC_i \times GIL_{it}$		-0.111**	0.029	-0.084	-0.137**
		(-2.085)	(0.210)	(-1.047)	(-2.148)
Constant	-0.024	-0.024	0.085***	0.068*	0.016
	(-0.861)	(-0.869)	(2.713)	(1.884)	(1.261)
Obs.	18,143	18,143	2,668	2,512	12,963
R-squared	0.652	0.652	0.664	0.651	0.653
F-test	114.65***	112.29***	177.57***	180.64***	170.42***
F-test (GIL and its interaction)		8.30***	3.24**	14.31***	3.67**
GIL Marg. Eff. (H-IC)		-0.177***	-0.053	-0.186***	-0.159***
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	-	-	-

This table reports regressions of value relevance of goodwill impairments. The sample covers the period of 2005–2018 for 21 countries. MV_{it} is the market value of firm *i*'s equity measured three months after fiscal year-end (divided by 100). BV_{it} is the book value of firm *i* 's equity at the end of the year wherein goodwill is tested for impairment, minus goodwill's carrying amount at the same year-end. $EARN_{it}$ is earnings before interest and tax at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GWA_{it} is the carrying amount of goodwill at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GIL_{it} is goodwill impairments reported at the end of *t*. See Table 1 for all variable definitions.

Robust standard errors are in parentheses under the coefficient estimates and are clustered by country and year.

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

Table 7 Robustness checks

Variables	(1)	(2)	(3)
	LOSS	GDP-Growth	Excluding largest countries
BV_{it}	0.006***	0.007***	0.009***
	(14.662)	(14.749)	(12.719)
$EARN_{it}$	0.030***	0.020***	0.020***
	(11.837)	(8.445)	(7.631)
$LOSS_{it}$	-0.005		
	(-0.662)		
$EARN_{it} \times LOSS_{it}$	-0.052***		
	(-5.314)		
GWA_{it}	0.008***	0.010***	0.013***
	(11.697)	(12.625)	(13.488)
GIL_{it}	-0.065**	-0.066**	-0.073*
	(-2.439)	(-2.396)	(-1.843)
IC_i	0.011	0.018**	-0.006
	(1.440)	(2.071)	(-1.006)
$IC_i \times GIL_{it}$	-0.093**	-0.108**	-0.171**
	(-2.060)	(-2.015)	(-2.379)
$GDP_{Growthit}$		0.002	
		(1.129)	
Constant	-0.033	-0.029	-0.128**
	(-1.174)	(-1.035)	(-2.041)
Obs.	18,143	18,143	8,414
R-squared	0.663	0.652	0.735
F-test	188.06***	113.81***	91.35***
F-test (GIL and its interaction)	8.25***	8.41***	7.87***
GIL Marg. Eff. (H-IC)	-0.158***	-0.173***	-0.244***
Industry fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes

This table reports regressions of value relevance of goodwill impairments. The sample covers the period of 2005–2018 for 21 countries. MV_{it} is the market value of firm *i*'s equity measured three months after fiscal year-end (divided by 100).BV_{it} is the book value of firm *i* 's equity at the end of the year wherein goodwill is tested for impairment, minus goodwill's carrying amount at the same year-end. $EARN_{it}$ is earnings before interest and tax at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GWA_{it} is the carrying amount of goodwill at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GIL_{it} is goodwill impairments reported at the end of *t*. See Table 1 for all variable definitions. Robust standard errors are in parentheses under the coefficient estimates and are clustered by country and year.

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

Table 8 The effects of the strength of auditing and reporting standards, culture, and religiosity

Variables	(1)	(2)	(3)
	SARS	Cultural clusters	Religious clusters
BV_{it}	0.008***	0.007***	0.007***
	(13.082)	(14.734)	(14.769)
$EARN_{it}$	0.020***	0.020***	0.020***
	(7.621)	(8.450)	(8.461)
GWA_{it}	0.010***	0.010***	0.010***
	(11.286)	(12.608)	(12.600)
GIL_{it}	-0.047	-0.002	-0.105***
	(-1.487)	(-0.049)	(-3.229)
ARS_i	-0.024***		
	(-2.619)		
$ARS_i \times GIL_{it}$	-0.145**		
	(-2.089)		
CC_i		0.019**	
		(2.181)	
$CC_i \times GIL_{it}$		-0.234***	
		(-3.934)	
RC_i			0.010
			(1.263)
$RC_i \times GIL_{it}$			0.124**
			(2.128)
Constant	0.071***	-0.026	-0.022
	(3.967)	(-0.959)	(-0.772)
Obs.	14,970	18,143	18,143
R-squared	0.657	0.653	0.652
F-test	118.77***	113.29***	117.00***
F-test (GIL and its interaction)	7.24***	8.84***	4.37***
GIL Marg. Eff. (S-ARS)	-0.210***		
GIL Marg. Eff. (A-CC)		-0.235***	
GIL Marg. Eff. (M-RC)			0.019
Industry fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes

This table reports regressions of value relevance of goodwill impairments. The sample covers the period of 2005–2018 for 21 countries. MV_{it} is the market value of firm *i*'s equity measured three months after fiscal year-end (divided by 100). BV_{it} is the book value of firm *i* 's equity at the end of the year wherein goodwill is tested for impairment, minus goodwill's carrying amount at the same year-end. $EARN_{it}$ is earnings before interest and tax at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GWA_{it} is the carrying amount of goodwill at the end of the year wherein goodwill is tested for impairment, plus the amount of goodwill impairments reported at the same year-end. GIL_{it} is goodwill impairments reported at the end of *t*. See Table 1 for all variable definitions. Robust standard errors are in parentheses under the coefficient estimates and are clustered by country and year.

* Significance at the 10% level.

** Significance at the 5% level.

*** Significance at the 1% level.

Appendix 1: Accounting treatment of goodwill under IFRS

The revised versions of IFRS 3 (Business Combinations) and IAS 36 (Impairment of Assets) represent the latest episode in the accounting treatment of goodwill. The impairment-only model under IFRS defines goodwill, in terms of its nature or attributes, as "an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognised" (IFRS 3, Appendix A). This means that goodwill is a resource that generates economic benefits in the future only in combination with other assets not being capable of separate identification. Technically, goodwill acquired in a business combination does not produce cash inflows separately from other assets (or groups of assets). Goodwill cannot be purchased or sold separately because its value is not established by reference to a traded market. Unlike many other assets, goodwill cannot be measured directly but rather can only be measured indirectly as a residual amount being the difference between the consideration paid by the acquirer and the fair value of identifiable net asset of the acquiree at the date of acquisition.

Goodwill is no longer considered a wasting asset with a definite life during which it is consumed. Goodwill should not, therefore, be amortised as an expense on a straight-line basis because its value does not necessarily decline on a regular/systematic pattern. Instead, according to IFRS 3, goodwill arising in the context of a business combination must be tested for impairment in compliance with IAS 36, at least annually, or more frequently if certain triggering events or changes in circumstances occur. The IAS 36 impairment test applies to goodwill and other intangibles with indefinite useful lives, with the purpose of ensuring that assets are not carried at more than their recoverable amounts (IAS 36, 2008).

The IAS 36 provide a non-exhaustive list of internal and external factors that should be taken into account to determine whether goodwill might have been impaired. An example of an external indicator is when "an asset's market value has declined significantly more than would be expected" (IAS 36, 2008, Para 12 (a)) or when "the carrying amount of the net assets of the entity is more than its market capitalisation" (IAS 36, 2008, Para 12 (d)). Another example of a potential external indicator is "significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates" (IAS 36, 2008, Para 12 (b)).

Under IAS 36, the impairment review of goodwill will take place at cash-generating units (CGUs) level. Thus, from the date of acquisition, an acquirer shall assign goodwill to a CGU (or a group of CGUs) that is/are expected to benefit from the synergies arising from the business combination. Each CGU shall represent the lowest level within the entity at which goodwill is monitored for internal management purposes. This level, however, cannot be larger than an operating segment determined in accordance with IFRS 8 Operating Segments (IAS 36, 2008, Para. 80). IAS 36 defines CGU as "the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets" (IAS 36, 2008, Para. 66).

The CGU to which goodwill is assigned shall be tested for impairment, at least annually, or more frequently if there is an indication that the unit may have been impaired. An impairment loss should be recognised for the CGU if, and only if, the carrying amount of the unit exceeds its recoverable amount (IAS 36, 2008, Para. 90). While the former is defined as "the amount at which an asset is recognised after deducting any accumulated depreciation and accumulated impairment losses", the latter can be achieved by recognising the higher of an asset's or a CGU's fair value less costs to sell (net selling price) and its value in use. The fair value is defined in accordance with IFRS 13, Fair Value Measurement, as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date" (IFRS 13, Appendix A). This definition explicitly excludes forced sales or liquidations, where the seller is compelled to sell and the buyer knows about the seller's need to sell, which would, in turn, reduce the amount a non-particular (i.e., hypothetical) buyer would be willing to pay in cash to a willing seller of the asset(s). The value in use, however, represents "the present value of the future cash flows expected to be derived from an asset or cash-generating unit" (IAS 36, 2008, Para. 6). The amount of impairment is allocated to: "first reduce the carrying amount of any goodwill allocated to the cash-generating unit (group of units); and then, reduce the carrying amounts of the other assets of the unit (group of units) pro rata on the basis" (IAS 36, 2008, Para. 104). Any goodwill impairment losses are immediately recognised as an expense in the income statement and are not reversed in subsequent periods (IAS 36, 2008, Para. 124).

Appendix 2: Composite variables of the latent variables

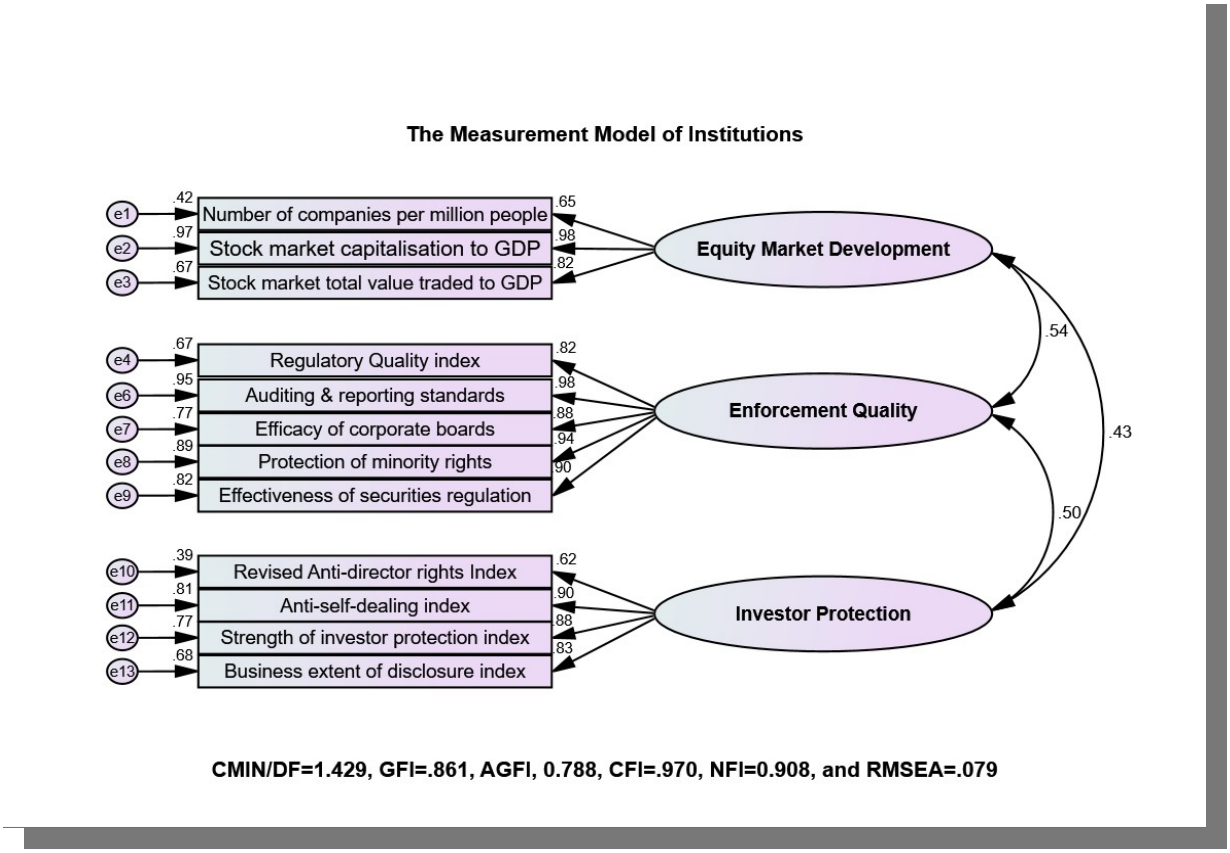
Factor	No. of items	Dimensions	Sub-dimensions	Sources
Equity Market Development	3	(1) The national logarithm of the average ratio of the number of domestic firms listed in a given country to its population (in millions) for the period 2006–2010.		World Bank / Global Financial Development (GFD)
		(2) The average ratio of the total market capitalization to the country's GDP for the period 2006–2010.		
		(3) The average ratio of the total value of shares traded to the country's GDP for the period 2006–2010.		
Enforcement Quality	12	(1) Regulatory Quality Index and government investment: the simple average of (1) judicial independence (2); impartial courts; (3) protection of property rights; (4) military interference in rule of law and politics; (5) integrity of the legal system; (6) legal enforcement of contracts; (7) extra payments/bribes/favoritism; and (8) government enterprises and investment.	Judicial independence. "Is the judiciary in your country independent from political influences of members of government, citizens, or firms? No – heavily influenced (= 1) or Yes – entirely independent (= 7)." All variables from the Global Competitiveness Report were converted from the original 1–7 scale to a 0–10 scale using this formula: EFWi = ((GCRi− 1) ÷ 6) × 10.	World Economic Forum / Global Competitiveness Report
			Impartial courts. "The legal framework in your country for private businesses to settle disputes and challenge the legality of government actions and/or regulations is inefficient and subject to manipulation (= 1) or is efficient and follows a clear, neutral process (= 7)." Note the 'rule of law' ratings from the World Bank's Worldwide Governance Indicators (WGI) have been used to fill in country omissions in the primary data source since 1995.	World Economic Forum
			Protection of property rights. This component is from the Global Competitiveness Report question: "Property rights, including over financial assets, are poorly defined and not protected by law (= 1) or are clearly defined and well protected by law (= 7)." Note this replaces a previous Global Competitiveness Report question on the protection of intellectual property.	World Economic Forum
			Military interference in rule of law and politics. This component is based on the International Country Risk Guide: "A measure of the military's involvement in politics. A system of military government will almost certainly diminish effective governmental	World Economic Forum

	functioning, become corrupt, and create an uneasy environment for foreign businesses." Note the 'political stability and absence of violence' ratings from the World Bank's WGI have been used to fill in country omissions in the primary data source since 1995.	
	Integrity of the legal system. This component is based on the International Country Risk Guide: "Two measures comprising one risk component. Each sub-component equals half of the total. The 'law' sub-component assesses the strength and impartiality of the legal system, and the 'order' sub-component assesses popular observance of the law."	World Economic Forum
	Legal enforcement of contracts. This component is based on the World Bank's Doing Business estimates for the time and money required to collect a debt. Ratings of 0–10 were constructed for (1) the time cost (measured in the number of calendar days required from the moment the lawsuit is filed until payment); and (2) the monetary cost of the case (measured as a percentage of the debt).	World Economic Forum
	Extra payments / bribes / favoritism. This sub-component is based on the Global Competitiveness Report questions: "In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the following: A – Import and export permits; B – Connection to public utilities (e.g., telephone or electricity); C – Annual tax payments; D – Awarding of public contracts (investment projects); E – Getting favorable judicial decisions. Common (= 1), Never occur (= 7)"; "Do illegal payments aimed at influencing government policies, laws or regulations have an impact on companies in your country? 1 = Yes, significant negative impact, 7 = No, no impact at all"; and "To what extent do government officials in your country show favoritism to well-connected firms and individuals when deciding upon policies and contracts? 1 = Always show favoritism, 7 = Never show favoritism."	World Economic Forum

			Government enterprises and investment. Data on government investment as a share of total investment were used to construct the 0–10 ratings. Countries with more government enterprises and government investment received lower ratings. When the government investment share was generally less than 15% of the total investment, countries were given a rating of 10.	World Economic Forum
		(2) Strength of auditing and reporting standards: "In your country, how would you assess financial auditing and reporting standards regarding company financial performance?" [1 = extremely weak; 7 = extremely strong.]		Global Competitiveness Report
		(3) Efficacy of corporate boards: "How would you characterize corporate governance by investors and boards of directors in your country?" [1 = management has little accountability to investors and boards; 7 = investors and boards exert strong supervision of management decisions.]		Global Competitiveness Report
		(4) Protection of minority rights. "In your country, to what extent are the interests of minority shareholders protected by the legal system?" [1 = not protected at all; 7 = fully protected.]		Global Competitiveness Report
		(5) Effectiveness of securities regulation: "How would you assess the regulation and supervision of securities exchanges in your country?" [1 = ineffective; 7 = effective.]		Global Competitiveness Report
Investor Protection	7	(1) Revised Anti-Director Rights Index: an aggregate measure of the legal protection of minority shareholders against expropriation by corporate insiders.		Djankov et al. (2008)
		(2) Anti-Self-Dealing Index (0-1): equals the average of ex-ante and ex-post private control over self-dealing transactions.	(1) Ex-ante private control of self-dealing: identifies the strength of private enforcement of provisions against self-dealing by insiders, focusing on ex-ante control (e.g. requiring approval by disinterested shareholders and ex-ante disclosures).	Djankov et al. (2008)
			(2) Ex-post private control of self-dealing: identifies the strength of private enforcement of provisions against self-dealing by insiders, focusing on ex-post control (e.g. periodic filing requirements and ease of proving wrongdoing).	
		(3) Strength of Investor Protection Index (0–10): the average of: (1) the Extent of Disclosure Index; (2) the Extent of Director Liability Index; and (3) the Ease of Shareholder Suits Index.	(1) Extent of Disclosure Index: identifies the approval and transparency of related-party transactions.	Doing Business Indicators / World Bank Group
			(2) Extent of Director Liability Index: identifies the liability of company directors for self-dealing	

	(3) Ease of Shareholder Suits Index: identifies shareholders' ability to obtain corporate documents before and during litigation.	
(4) Business Extent of Disclosure Index: identifies the extent to which investors are protected through disclosure of ownership and financial information. The index ranges 0–10, with higher values indicating more disclosure.		World Bank / World Development Indicators

Appendix 3: Measurement model of institutions



Appendix 4: Individual loadings (λ), construct reliability (CR), average variance extracted (AVE)

Construct	Indicators	λ	CR	AVE

Equity Market Development	Stock market total value traded	0.82***	0.86	0.69
	Stock market capitalisation	0.98***		
	Number of listed companies	0.65***		
Enforcement Quality	Regulatory quality index	0.82***	0.96	0.83
	Strength of auditing and reporting standards	0.98***		
	Efficacy of corporate boards	0.88***		
	Protection of minority shareholders' interests	0.94***		
	Effectiveness of securities regulations	0.91***		
Investor Protection	Business extent of disclosure index	0.83***	0.88	0.66
	Strength of investor protection index	0.88***		
	Anti-self-dealing index	0.90***		
	Revised Anti-Director index	0.62***		

Appendix 5: Correlations and inter-construct correlations (SIC)

Construct	1	2	3
1. Equity Market Development	**0.83**		
2. Enforcement Quality	0.54*	**0.91**	
	(0.29)		
3.Investor Protection	0.43*	0.50*	**0.81**
	(0.18)	(0.25)	

Diagonal elements in bold font are the square roots of AVEs. Off-diagonal elements are correlations and SIC. For discriminant validity, diagonal elements should be greater than off-diagonal elements in the same raw and column.

Appendix 6: Country-level institutions

Country	Investor Protection	Enforcement Quality	Equity Market Development

Panel A: H-IC countries			
Australia	8.7	11.91	141.03
Austria	5.37	11.43	46.11
Belgium	8.22	11.22	76.73
Denmark	7.63	11.78	83.35
Finland	7.08	12.18	100.71
France	7.27	11.12	95.69
Germany	5.82	11.46	60.67
Hong Kong	11.87	11.75	510.38
Ireland	10.43	10.57	53.53
Israel	9.54	10.95	117.84
Netherlands	4.71	11.54	100.78
New Zealand	11.62	12.1	56.13
Norway	7.56	12.04	81.09
South Africa	10.27	12.24	232.95
Sweden	6.78	12.47	126.88
United Kingdom	11.04	11.5	144.36
Mean	8.00	11.62	114.05
Median	7.27	11.50	100.71
Std. dev.	1.99	0.43	61.90
Panel B: L-IC countries			
Greece	3.6	9.52	56.89
Italy	6.68	8.28	42.95
Poland	6.26	9.49	46.02
Portugal	6.82	10.07	53.44
Spain	6.35	9.74	110.52
Mean	6.17	9.22	57.46
Median	6.35	9.49	46.02
Std. dev.	0.90	0.64	23.91

The table reports the classification of H-IC and L-IC countries based on their similarities or differences in *Investor Protection*, *Enforcement Quality*, and *Equity Market Development*. Appendix 2 contains the definitions of the institutional variables.