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## Joint Ventures investments: an analysis of the level of compliance with the disclosure requirements of IFRS 12<sup>1</sup>

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## **Abstract**

This study provides empirical evidence on the way entities that had to change their reporting method for interests in joint ventures from the proportionate consolidation to the equity method apply the IFRS 12 disclosure requirements. The empirical analysis relies on a sample composed by 551 firms that were affected by the adoption of IFRS 11, since they had to change from proportionate consolidation to equity method, and are thus most likely to properly implement the IFRS 12 disclosure requirements. The findings show that firms are not properly complying with IFRS 12 disclosure requirements and firm-level characteristics (such as firms' size, leverage and ownership concentration) contributed the most to explain this level of (non)compliance, when compared to the country-level variables (such as legal system and emerging *versus* developed countries). We also find that a higher relative weight of the joint ventures (higher materially) is associated to a higher level of compliance with the IFRS 12 disclosure requirements. Our results contribute to the literature on the determinants of compliance with IFRS disclosure requirements and may bring important insights for the post-implementation review of IFRS 11 and IFRS 12 currently in place.

**Keywords:** IFRS 12, Joint Ventures, Compliance, Disclosure Requirements.

### **1. Introduction**

This study aims to provide empirical evidence on the way entities that had to change their reporting method for interests in joint ventures from the proportionate consolidation to the equity method apply some of the main disclosure requirements of IFRS 12 - *Disclosure of Interests in Other Entities*.

In 2011, the *International Accounting Standards Board* (IASB) issued a new standard, IFRS 11 - *Joint Arrangements*, that requires firms to apply the equity method to account for interests in joint ventures, while the previous international standard (IAS 31) allowed the choice between proportionate consolidation and equity method. Therefore, some firms had to replace the proportionate consolidation by the equity method, which lead to material reductions on the venturers' total assets, liabilities, revenues and expenses (Richardson, Roubi, & Soonawalla, 2012; Sarquis & Santos, 2018).

The IASB's decision to eliminate the proportionate consolidation was controversial, given the divergence of opinions about which of these two methods would be the most appropriate, which may be assessed by the number of comment letters that were sent during the public consultation period of the Exposure Draft 09 - *Joint Arrangements*. Of the total of 111 comment letters received by the IASB, 68 (i.e., 61%) respondents clearly stated that they do not agree with the elimination of the proportionate consolidation (Sarquis & Santos, 2019).

In addition to the IFRS 11, the IASB also issued the IFRS 12 - *Disclosure of Interests in Other Entities*, which requires entities to disclose in the Notes information that enables users to assess the nature, extension, financial effects and risks associated with its interests in joint ventures. These disclosure requirements include the disclose of summarized financial information of their interests in joint ventures, which is expected to allow users to estimate the accounting amounts that would be reported by firms whether the proportionate consolidated method was used instead of the equity method and, therefore, compensate the informational loss resulting from the elimination of the proportionate consolidation. In the Basis for Conclusions of IFRS 11, the IASB argued that the elimination of the proportionate consolidation would not cause a loss of information for users of financial statements because the disclosure requirements in IFRS 12, when compared with IAS 31, improve the quality of the information provided to users relating to an entity's interest in joint ventures.

However, there is a body of literature providing empirical evidence of non-compliance and of discrepancies in the level of firms' compliance with IFRS mandatory disclosure requirements. Tsalavoutas, Tsoligkas, and Evans (2020) systematically reviewed 70 empirical studies on this issue and found that the vast majority of companies do not comply with all mandated disclosure requirements. These authors highlight that the analyzed studies mostly draw on samples from one country and there is an absence of detailed evidence (i.e., in-depth 'single topic' studies) on compliance with key areas such as investments in associates and joint ventures (IAS 28, IAS 31, now IFRS 11). We add to this literature by analyzing the level and the determinants of compliance with disclosure requirements regarding this key subject - interests in joint ventures - and by using a comprehensive international sample.

This empirical study relies on the firms that are the most affected by the IASB's decision to eliminate the proportionate consolidation, namely those that had to change from the proportionate consolidation to the equity method, which would be most likely to properly implement the IFRS 12 disclosure requirements. We started by identifying the 26 countries that adopted IFRS Standards since at least 2012 (one year before the adoption of IFRS 11 and IFRS 12), whose firms have information available in the *Worldscope* database and present the financial statements in any language derived from Latin Alphabet. Then, we identified the 2,059 firms that reported interests in joint ventures in the 2016 financial statements. As a third step, we manually collected and analyzed the several financial statements of each of these 2,059 firms to identify the year in which they applied IFRS 11 (and whether they change the reporting method from the proportionate consolidation to the equity method). After excluding firms that we were unable to find the financial statements of the years around the adoption of IFRS 11 and 12, firms that did not have interests in joint ventures in these years, and firms that were not affected by the adoption of IFRS 11, since they already used the equity method, we identi-

fied a final sample composed by 551 firms that had to change their reporting method for interests in joint ventures from the proportionate consolidation to the equity method.

In order to find evidences about how these firms implemented some of the main disclosure requirements of IFRS 12, we deeply analyzed their post IFRS 12 financial statements (of the year in which each of these 551 firms adopted IFRS 12 until 2016), resulting in a sample of 1,858 financial statements, and computed two disclosure indexes that capture the level of compliance with the disclosure requirements related to the joint ventures summarized financial information. Our findings indicate that firms are not complying with IFRS 12 disclosure requirements, especially in countries such as Kuwait, Sweden, Netherlands and Australia. The highest indexes of disclosure were presented by firms from New Zealand, Malaysia, Hong Kong and South Africa.

Seeking to identify the firm-level and country-level characteristics that may explain the level of compliance with these disclosure requirements, we estimate two regression models (hierarchical in the null version and non-hierarchical). The findings show that the firm-level characteristics are more important to explain the level of compliance with the IFRS 12 analyzed disclosure requirements, when compared to the country-level variables, although both are statistically significant. Additionally, we find that larger and less leveraged firms, firms with a lower ownership concentration, and firms with a higher relative weight of the joint ventures (higher materially) are associated to a higher level of compliance with the analyzed IFRS 12 disclosure requirements. We also found that being from Common-law countries or emerging countries is associated with a higher level of compliance with the analyzed IFRS 12 disclosure requirements, when compared to the firms from French-civil-law and German-civil-law countries and from developed countries.

Our results contribute to the literature on the determinants of the level of compliance with IFRS disclosure requirements by analyzing the level and the determinants of compliance with

a key area such as interests in joint ventures and by using a comprehensive international sample composed by large and small firms from both developed and emerging countries. We also contribute to the evidence-based standard setting of the IASB, particularly regarding the post-implementation review of IFRS 11 and IFRS 12 currently in place.

The remainder of this study is organized as follows. Section 2 presents the theoretical background. Section 3 describes the research design. Section 4 presents the research results and, finally, Section 5 presents the summary and concluding remarks.

## **2. Theoretical Background**

### **2.1. The IASB Agenda on Mandatory Disclosures**

In February 2010, the Trustees of the IFRS Foundation, the IASB's oversight body, announced enhancements to their governance arrangements, including the decision to undertake a three-yearly public consultation on the IASB's future technical agenda, in addition to consulting the Trustees and the IFRS Advisory Council annually on the existing and future agenda. During its first three-year, the feedback received by the IASB included a call for a review of the existing disclosure requirements in IFRS and the development of a disclosure framework (IASB, 2013).

Therefore, the IASB decided to set up a public forum to discuss disclosure so that it could obtain a better understanding of the types of problems identified by users, preparers, standard-setters, auditors and regulators and, with such input, better assess the issues to be addressed. A public Disclosure Forum was hosted by the IASB in January 2013 to discuss the disclosure overload and in July 2013, Hans Hoogervorst (IASB Chairman) has addressed a speech entitled "Breaking the boilerplate" in which the chairman of the IASB highlighted the risk that financial reports become simply compliance documents, rather than instruments of communication (Hoogervorst, 2013). Such view that, at least part of the "disclosure problem" stems from the application of disclosure requirements in IFRS Standards mechanically, has also in-



tegrated the Discussion Paper published by the IASB in 2017 (IASB, 2017). As per such view, preparers, auditors and regulators use IFRS disclosure requirements as a checklist rather than applying judgement to determine what information is relevant to users.

Nevertheless, Tsalavoutas et al. (2020) provide evidence that suggests low compliance levels (and high standard deviation of non-compliance levels) rather than a pervasive compliance check-list approach to disclosures. It appears that preparers are selectively providing users with trivial and rather uncostly disclosures but are not complying with the IFRS requirements for disclosure where proprietary information is required (Tsalavoutas et al., 2020).

The debate over the usefulness of mandatory disclosures is ongoing. After reviewing the evidence gathered in its Disclosure Initiative, the IASB decided that improving the way disclosure requirements are developed and drafted in IFRS is the most effective way it can help to address the disclosure problem, leading to the commencement of a Targeted Standards-level Review of Disclosures project (IASB, 2019).

## **2.2. Mandatory Disclosure of Interests in Joint Ventures**

The general objective of IFRS 12 is to set the disclosure requirements that enables users of its financial statements to evaluate: (a) the nature of, and risks associated with, its interests in other entities; and (b) the effects of those interests on its financial position, financial performance and cash flows (IASB, 2011c).

Particularly regarding joint ventures, IFRS 12 requires entities to disclose information that enables users to assess the nature, extension and financial effects of its interests in joint arrangements, including the nature and effects of its contractual relationship with the other investors with joint control of joint arrangements, as well as the nature of, and changes in, the risks associated with its interests in joint ventures.

The IASB states in the Basis for Conclusions of IFRS 12 that users of financial statements consistently requested improvements to the disclosure of a reporting entity's interests in other

entities to help identify the profit or loss and cash flows available to the reporting entity and determine the value of a current or future investment in the reporting entity. Furthermore, users highlighted the need for better information of interests in joint arrangements and associates that are not consolidated but with which the entity has a special relationship (IASB, 2011b).

We argue that complying with IFRS 12 is particularly relevant considering the elimination of proportionate consolidation option for joint ventures that was allowed in IAS 31 (replaced by IFRS 11). In the Basis for Conclusions on IFRS 11, the IASB argued that the elimination of proportionate consolidation would not cause a loss of information for users of financial statements because the disclosure requirements in IFRS 12 improve the quality of the information provided to users relating to an entity's interest in joint ventures.

The disclosure requirements in IFRS 12 should provide users with information about individual joint ventures when those joint ventures are material to the reporting entity. Furthermore, the summarized financial information required in IFRS 12 should result in a higher degree of detail than did IAS 31, which should give users a better basis for assessing the effect on the reporting entity of the activities carried out through joint ventures (IASB, 2011a). Consequently, the compliance level with the mandatory disclosure requirements regarding joint ventures is key after IFRS 11 is adopted.

### **2.3. Empirical Literature on the Compliance with IFRS Disclosure Requirements**

There is an extensive literature that analyses the behavior of managers regarding disclosure and the reasons why some firms disclose more information than others. The motivations for disclosure have been the focus of several voluntary disclosure studies, which provides evidence of some factors that may explain the firms' behavior (Baloria, Klassen, & Wiedman, 2019; Bamber, Jiang, & Wang, 2010; Ceustermans & Breesch, 2017; Haddad, Shibly, & Haddad, 2020; Kend, 2015; Louie, Ahmed, & Ji, 2019; Morris & Tronnes, 2018; Zechman, 2010).

In addition, there is a stream of literature on the motivations for mandatory disclosure, especially regarding IFRS. We may think that if it is mandatory to disclose a set of information, companies will do so. However, there is a body of literature providing empirical evidence of non-compliance and discrepancies in the level of firms' compliance with IFRS mandatory disclosure requirements (Bepari, Rahman, & Mollik, 2014; Carlin & Finch, 2010; Che Azmi & English, 2016; Glaum, Schmidt, Street, & Vogel; 2013; Izzo, Valerio, & Elisa, 2013; Lazar & Velte, 2018; Lucas & Lourenço, 2014; Mazzi, André, Dionysiou & Tsalavoutas, 2017; Mazzi, Slack, & Tsalavoutas, 2018; Wang, 2019). This literature argues that accounting practices do not develop in a vacuum but are determined by a set of firm or country characteristics.

Samaha, Khlif, and Dahawy (2016) developed a meta-analysis of a set of 17 empirical studies (published between 1998 and 2012) dealing with the determinants of the degree of compliance with IFRS, including compliance with IFRS mandatory disclosures. They found that firm's size (proxy for agency theory), profitability (proxy for signaling theory), leverage (proxy for agency and signaling theory), auditor size and being audited by a Big 4 auditor (proxy for signaling theory), ownership dispersion (proxy for agency theory), and cross listing (proxy for capital need theory) were positively associated with the level of compliance.

Carvalho, Rodrigues, and Ferreira (2016) analyzed the literature published from 2002 to mid-2015 on disclosures of goodwill and their respective impairment tests, and they found the majority of the studies reveals that the information disclosed about goodwill is incomplete and largely heterogeneous, even in developed markets (with strong enforcement mechanisms). The authors highlight the following factors as positively associated with greater compliance with goodwill (and impairment) disclosure requirements: firms' size, profitability, audit quality, market capitalization, magnitude of goodwill, and magnitude of goodwill impairment losses.

The literature review conducted by Tsalavoutas et al. (2020) indicates that the vast majority of companies do not comply with all mandated disclosure requirements and that studies mostly draw samples from one country and mainly focus on small markets or less developed economies. The few cross-country studies usually analyze only firms with the highest market capitalization. They also found the majority of the studies cover individual topics, among which *Goodwill and goodwill impairment testing* has received most attention, followed by *financial instruments* and *business combinations*. Regarding the determinants of compliance, they found that firms' size, being audited by a Big 4 auditor, audit quality, cross listing, stronger corporate governance, being a firm from a common law country were positively associated with the level of compliance, while leverage and profitability tend to be associated with compliance levels, but the sign of the relationships differs between studies. Finally, these authors highlight a lack of evidence for smaller firms from developed markets, and an absence of detailed evidence on compliance with key areas such as leasing (IFRS 16), post-retirement benefits (IAS 19), share-based payments (IFRS 2), provisions and contingent liabilities (IAS 37), and interests in associates and joint ventures (IFRS 11). Our research aims to fill this gap in the literature.

### **3. Research Design**

#### **3.1. Sample**

Our sample is composed by firms with interests in joint venture that were affected by the adoption of IFRS 11 and the elimination of the proportionate consolidation. These firms were the most affected by IFRS 11 adoption, given that they had to change the accounting treatment used until then to the equity method, which lead to a decrease of their total assets, liabilities, revenues and expenses. Consequently, it could be argued that these firms, seeking to compensate the informational loss caused by the elimination of proportionate consolidation, would be more likely to properly implement the disclosure requirements of IFRS 12.

To compose this sample, the first step was to select all countries available in the *Worldscope* database whose listed firms adopted IFRS Standards since prior to 2012 (one year before the adoption of IFRS 11 and 12). We also maintained only those countries in which firms disclose their financial statements in any language derived from Latin Alphabet, resulting in a sample of 26 countries.

From all publicly listed firms from these 26 countries, the second step was to identify which firms have interests in joint venture. To do so, we first collected in the *Worldscope* database the information about which firms had an investment account in the consolidated financial statements of 2016. This does not guarantee that these firms have interests in joint venture, but it allows us to eliminate those firms without an investment account, which certainly do not have interests in joint ventures. After this elimination, we found 5,618 firms. Following, we hand collected and analyzed the financial statements of 2016 of each of these 5,618 firms in order to identify which of these firms actually had interests in joint venture and not only associate investments. We found 2,059 firms with interests in joint venture from 26 countries.

The third step was to analyze the historical financial statements of each of these 2,059 firms, in order to identify the exact year in which each of these firms adopted IFRS 11 and 12. Following, we classified these 2,059 firms into three groups: i) *488 missing firms*: firms that we were unable to find the financial statements of the years around the adoption of IFRS 11 and 12 or firms that did not have interests in joint ventures during the years around the adoption of IFRS 11 and 12; (ii) *1,020 unaffected firms*: firms that were not affected by IFRS 11 adoption, since they already used the equity method before the adoption; and (iii) *551 affected firms*: firms that were affected by IFRS 11 adoption, since they had to change their accounting treatment from proportionate consolidation to the equity method. Our sample is composed by these 551 firms.

Seeking to provide evidence on the way these 551 firms implemented some of the main financial disclosure requirements of IFRS 12, the period of analysis begins in the year in which each of these 551 firms adopted IFRS 12 and ends in 2016, which was the last year available at the time the data were collected. For those firms that adopted IFRS 12 in 2013, we analyzed the financial statements from 2013 to 2016 (4 years). For those firms that adopted IFRS 12 after 2013, the period of analysis is shorter. Consequently, our final sample is composed by 551 firms from 26 countries and 1,858 financial statements, as shown in Table 1.

Table 1: Sample

<b>PANEL A - Sample distribution by country</b>				
Country	Firms with JV	Sample (affected firms)		
		Firms	Obs (financial statements)	
Australia	158	5	16	
Belgium	26	12	42	
Brazil	94	70	272	
Canada	124	41	154	
Chile	41	11	41	
Denmark	15	11	34	
Finland	32	11	37	
France	105	76	244	
Germany	116	33	108	
Hong Kong	338	24	84	
Ireland	14	3	7	
Italy	83	32	103	
Kuwait	12	1	4	
Malaysia	168	9	31	
Mexico	34	16	63	
Netherlands	37	18	63	
New Zealand	26	3	9	
Norway	48	19	63	
Philippines	56	7	28	
Poland	43	13	38	
South Africa	82	26	84	
Spain	48	30	98	
Sri Lanka	26	19	40	
Sweden	49	10	32	
Turkey	38	18	71	
United Kingdom	246	33	92	
<b>Total</b>	<b>2,059</b>	<b>551</b>	<b>1,858</b>	

<b>PANEL B - Sample distribution by industry</b>				
Country	Firms with JV	Sample (affected firms)		
		Firms	Obs (financial statements)	
Agriculture, Forestry, and Fishing	33	7	21	
Mining	151	36	127	
Construction	198	55	197	
Manufacturing	518	159	525	

Transportation and Public Utilities	307	118	411
Wholesale Trade	72	16	54
Retail Trade	101	20	61
Finance, Insurance, and Real Estate	408	83	286
Services	254	51	159
Others	17	6	17
<b>Total</b>	<b>2,059</b>	<b>551</b>	<b>1,858</b>

Note: This table shows the distribution of the sample by country (Panel A) and by industry (Panel B). The second column indicates the initial sample (2,059 firms), which is composed of all firms with interests in joint venture in 2016. However, our final sample is composed only by those firms that had to change their accounting treatment from proportionate consolidation to the equity method when adopting IFRS 11 (551 firms – third column). The period of analysis begins in the year of the adoption of IFRS 12 and ends in 2016. Therefore, the last column of this table shows the number of financial statements that were analyzed in this research (1,858).

### 3.2. Data collected from the financial statements

The IFRS 12 determines that firms with interests in joint ventures shall disclose information about (i) *“the nature, extent and financial effects of its interests in joint arrangements”* and (ii) *“the nature of, and changes in, the risk associated with its interests in joint ventures”* (IASB, 2011c, item 20).

Tsalavoutas et al. (2020) argue that an inherent limitation of research on disclosure is the subjective judgment of the author in order to identify whether a disclosure requirement is not applicable (or immaterial/irrelevant) to the firm or whether the firm is not complying with the requirement. We believe that this limitation would be more pronounced for the disclosure requirements related to the *“nature of, and changes in, the risk associated with its interests in joint ventures”*, given that we would not be able to properly evaluate whether the firm has commitments or contingent liabilities relating to its interests in joint ventures (IASB, 2011c, item 23) or whether the firm is not complying with this disclosure requirement.

Seeking to mitigate this limitation and possible judgment errors, we decided to focus on the disclosure requirements related to *“the nature, extent and financial effects”* of its interests in joint ventures and, more specifically, on the summarized financial information. IFRS 12 de-



termines that for each material joint venture, a firm shall disclose a summarized financial information about the joint venture according to paragraphs B12 and B13. For joint ventures that are not individually material, a firm shall disclose financial information as specified in paragraphs B16 in aggregate. Therefore, even for immaterial joint ventures some financial information shall be disclosed. Consequently, focusing on financial information, the limitation mentioned above would be mitigated.

However, even considering only the financial information, we could still incur in judgment errors. For example, for material joint ventures, IFRS 12 requires the firm to disclose the other comprehensive income of the joint venture or the dividends received from the joint ventures and we would not be able to identify whether the firm is not complying with these disclosure requirements or whether the joint venture has no other comprehensive income or has not paid dividends. In order to mitigate this problem, we decided to focus on the most essential financial information, which all firms in general present, such as financial information about the assets, liabilities, equity, revenues and net income of the joint ventures. In addition, these financial information are also the most relevant for investors and other users of accounting information to understand and evaluate the financial effect of interests in joint ventures, given that with this financial information they would be able to estimate what would be the accounting amounts reported by the joint venturers whether the proportionate consolidation method had been used instead of the equity method.

We recognize that focusing on the most essential financial information could be a limitation of this research, but the introduction of disclosure requirements that we would not be able to evaluate whether the firm is not complying with or whether it is not applicable could introduce even more relevant biases in our analyses. Also, if our results provide evidence that firms are not complying with the disclosure requirements of the most essential financial in-

formation, it can be expected that this non-compliance would be even more pronounced for the other detailed disclosure requirements of IFRS 12.

Based on this contextualization, we have analyzed in depth each of the 1,858 financial statements of our sample and collected the following information:

- Level of aggregation of financial information: (i) individualized for each joint venture; (ii) aggregated for all joint ventures; or (iii) mixed (individualized for material joint ventures and aggregated for other joint ventures);
- Name of the joint ventures;
- Proportion of ownership interest held by the firm in each joint venture;
- Whether financial information of joint ventures is disclosed: (i) in full (100%, as presented in the joint ventures' financial statement); (ii) proportional to the percentage of interest; or (iii) mixed (in full for joint ventures that are disclosed individually and proportional to the percentage of interest for joint ventures that are disclosed in aggregated);
- Whether assets (liabilities, equity, revenues and net income) of the joint ventures are: (i) disclosed for all joint ventures; (ii) disclosed only for some joint ventures; or (iii) not disclosed.
- Whether the total asset (liabilities, equity, revenues and net income) is disclosed for all or only for some joint ventures, the amount of the total asset (liabilities, equity, revenues and net income) of the joint venture proportional to the percentage of interest.
- Whether the disclosed financial information allows users of accounting information to estimate the accounting amounts that would be reported by the joint venturers if the proportionate consolidation method had been used: (i) yes or (ii) no.

An additional issue that is extremely important for research on disclosure is the concept of materiality. According to the Conceptual Framework, an information is material “*if omitting,*

*misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial reports make on the basis of those reports”* (IASB, 2018, item 2.11). Tsalavoutas et al. (2020) mentioned that studies about disclosure should consider a materiality threshold in order to not introduce bias, by considering as non-compliance what should be considered as not applicable to that firm due to immateriality. Seeking to address this issue, we incorporate a materiality threshold in our research, which is based on the relevance of the proportional share of the joint venture's total assets in relation to the total assets of the investor firm. Firms with more material joint ventures are more likely to have a higher level of compliance with the requirements of IFRS 12 than firms with immaterial joint ventures.

### **3.3. Disclosure Index**

One of the main critical issues of research on disclosure is the definition of the scoring method that will be used, in order to avoid the random assignment of weights to variables. According to Tsalavoutas et al. (2020), Cook's method is the most frequently used and is obtained by the ratio between the total number of items disclosed by a firm and the maximum number of required disclosure items that are applicable to this firm.

We used a similar approach in this research, but some of the information that was collected (Section 3.2) is related to the presentation format instead of whether the information was disclosed or not as, for example, the level of aggregation of the financial information of the joint ventures (individualized for each joint venture or aggregated for all). It would be expected that firms that had disclosed individually would have a higher score than those firms that have disclosed in aggregate, but IFRS 12 allows firms to disclose in aggregate for all joint ventures that are individually immaterial. Therefore, it would not be appropriate to state that a firm that is disclosing in aggregate is not complying with the disclosure requirements of IFRS 12 in the same way as firms that have disclosed individually.

Consequently, we decided to build our disclosure index based on whether the firm disclosed or not the financial information of joint ventures (assets, liabilities, equity, revenues and net income). However, we built two different indexes:

- **INDEX 1:** we assign 1 if the firm disclosed the information about the assets (liabilities, equity, revenues and net income) of at least some of their joint ventures, regardless of whether individually or aggregated, and 0 otherwise. This index ranges from 0 (if no financial information was disclosed) to 5 (if all financial information was disclosed).
- **INDEX 2:** we differentiate the firms that disclosed the information about the total assets (liabilities, equity, revenues and net income) for all joint ventures (assigning 2) and the firms that disclosed only for some of their interests in joint ventures (assigning 1). For those firms that did not disclose the financial information to any of their joint ventures, we assign 0. Thus, the score for this second index ranges from 0 to 10.

After calculating the ratio between the score obtained by the firm and the maximum possible score (5 in the first index and 10 in the second index), both disclosure indexes were converted into percentages that ranges from 0% to 100%.

The differentiation between indexes 1 and 2 is an attempt to differentiate firms that are disclosing financial information about all their joint ventures from those firms that are disclosing only to some of their joint ventures. However, the difference in the weighting between indexes 1 and 2 is random and does not capture individual differences relating to the number of joint ventures, being a limitation of this research. However, despite this limitation, the results and conclusions of the two indexes are the same.

### **3.4. Explanatory Factors and Empirical Models**

Glaum et al. (2013) analyzed the determinant of the level of compliance of European firms with the disclosure requirements of IFRS 3 and IAS 36 and, therefore, the authors proposed a

model in which the level of compliance is explained by both firm-level and country-level characteristics. Specifically, Glaum et al. (2013) explored the relation not only between firm (and country) variables and the level of compliance, but also whether country-level variables influence the impact of firm-level variables on the level of compliance.

There is indeed a demand for evidence of how country characteristics can explain firms' level of compliance with IFRS Standards. The vast majority of research on compliance are single country studies and, consequently, previous literature mainly uses firm-level characteristics as explanatory factors (Tsalavoutas et al., 2020). Using a worldwide sample and a set of country-level variables, in addition to firm-level variables, this research aims to fill this gap.

To do so, the first step was to estimate a Hierarchical Linear Model (HLM). Our data are organized in a hierarchical structure with three levels and repeated measures: the years (level 1) are grouped into firms (level 2) that are nested into countries (level 3) (Fávero & Belfiore, 2017; Rabe-Hesketh & Skrondal, 2012). Rabe-Hesketh and Skrondal (2012) argue that the dependency between observations within the same cluster is greater than the dependency between observations from different clusters. This is explained by the fact that there are specific characteristics of each cluster (firms and countries) that can affect the behavior of the observations that belong to them. Therefore, a greater correlation between the disclosure indexes of firms from the same country than between firms from different countries is expected.

According to Rabe-Hesketh and Skrondal (2012) the main advantage of HLM over traditional regression models is that it considers the natural clustering structure of the data and handles with such dependence among observations within the same cluster. Specifically, the advantage of the HLM model is that it attributes part of the variance not explained by traditional regression models (error term) to the different levels of the hierarchical structure of the data, through the identification of random effects at each level (Rabe-Hesketh & Skrondal, 2012). These random effects represent the characteristics of each cluster (that is, firm-level and coun-

try-level characteristics) that can affect the behavior of the dependent variable (disclosure index).

The basic model of the HLM is known as the null model (or unconditional model), since it does not include any explanatory variables in any of the levels (Fávero & Belfiore, 2017; Rabe-Hesketh & Skrondal, 2012; Raudenbush & Bryk, 2002). The null model indicates how the variance of the dependent variable is allocated to each level of the hierarchical structure of the data (Raudenbush & Bryk, 2002). In this research, we used the null model of the HLM, as shown in Equations 1, 2, 3 and 4, in order to identify the proportion of the variance of the disclosure index that is explained by firm-level and country-level characteristics.

**Null Model:**

$$Index_{tjk} = \pi_{0jk} + \epsilon_{tjk} \quad (1)$$

$$\pi_{0jk} = \beta_{00k} + r_{0jk} \quad (2)$$

$$\beta_{00k} = \gamma_{000} + u_{00k} \quad (3)$$

**Reorganizing:**

$$Index_{tjk} = \gamma_{000} + r_{0jk} + u_{00k} + \epsilon_{tjk} \quad (4)$$

in which  $Index_{tjk}$  represents the disclosure index in each period  $t$  of each firm  $j$  that belongs to country  $k$ . In addition,  $r_{0jk}$  represents the random effect of level 2 (firm) and  $u_{00k}$  the random effect of level 3 (country). If  $r_{0jk}$  and  $u_{00k}$  are significant, it means that both firm-level and country-level characteristics are relevant to explain the variance of the dependent variable.

Following, seeking to identify which are the firm-level and country-level characteristics that better explain the firms' level of compliance with the disclosure requirements of IFRS 12, we estimate a OLS regression model using a set of variables defined based on previous literature. According to Tsalavoutas et al. (2020), the firm-level variables most frequently used in research on the determinants of disclosure are: audit firm size, firm size and leverage. Previous

studies have shown a positive relation between being audited by a BIG 4 firm and the level of disclosure (Bepari et al., 2014; Cascino & Gassen, 2015; Florio, Lionzo, & Corbella, 2018; Glaum et al., 2013; Juhmani, 2017; Tsalavoutas, 2011). Glaum et al. (2013) explain that auditors play an important role in the enforcement of financial reporting and larger firms, known as BIG 4, tend to perform higher quality auditing procedures than smaller auditing firms, mainly because they are more independent from clients and are more concerned with protecting their reputations. We thus use a dummy variable coded 1 for firms that are audited by a BIG4 and 0 otherwise.

Similarly, firm size is also positively associated with the level of disclosure (Ajili & Bouri, 2018; Cascino & Gassen, 2015; Mazzi et al., 2018; Santos, Ponte, & Mapurunga, 2014). Larger firms tend to be more exposed and, therefore, are more likely to disclose more in order to reduce political pressure (Archambault & Archambault, 2003). Another explanation is that larger firms tend to have more resources designated to produce more disclosures (Archambault & Archambault, 2003; Glaum et al., 2013). We measure the firm size using the natural logarithm of total assets.

Previous studies show a significant relation between leverage and the level of disclosure, but the sign of this relation is not clear (Tsalavoutas et al., 2020). On the one hand, more leveraged firms tend to present a higher level of disclosure in order to reduce the agency cost of debts (positive relation). On the other hand, creditors may be able to use private information, not depending on disclosure and a negative association is expected (Archambault & Archambault, 2003). To measure the firm's leverage, we use the ratio of total liabilities to total assets. Being a cross-listed firm is also associated with higher disclosure, given that they have to comply with the requirements of more than one stock exchange (Archambault & Archambault, 2003). This relation is more pronounced for firms cross-listing on US stock exchanges, that are subject to the strong securities regulation of the US capital market (Hail & Leuz,

2009). We use a dummy variable coded 1 for firms cross-listed on NYSE or NASDAQ and 0 otherwise.

The ownership concentration also may explain the level of disclosure (Glaum et al., 2013; Goh, Joos, & Soonawalla, 2016). If a single shareholder owns a larger percentage of the shares, this large investor will be able to obtain private information directly from the firm, not requiring public disclosure (Archambault & Archambault, 2003). Similarly, firms with the ownership widely dispersed tend to present more pronounced agency problems and, therefore, they have more incentives to disclose information (Glaum et al., 2013). In this research, the ownership concentration was measured by the percentage of shares that are held by the largest shareholder.

Another important factor is whether the firm needs to raise funds to face investment opportunities. Firms that need to raise funds have more incentives to improve the quality of their financial reporting and increase the disclosure in order to mitigate information asymmetries (Glaum et al., 2013). Therefore, firms that need to raise funds seem to be more likely to have a higher level of compliance with disclosure requirements. To measure this construct, we use two variables based on Barth, Landsman, and Lang (2008): (i) percentage change in common stock (Equity Issue) and (ii) percentage change in total debts (Debt Issue).

The Return on Assets (ROA) is also expected to be significantly and positively related to the level of compliance with disclosure requirements (Cascino & Gassen, 2015; Lazar & Velte, 2018; Lucas & Lourenço, 2014). Profitable firms are more willing to disclose information, in order to provide signals to the market about their positive performance (Lazar & Velte, 2018). We also use the variable ROA, measured as earnings before interest and taxes divided by total assets.

The industry in which a firm operates is also an important factor to explain the level of disclosure (Glaum et al., 2013). Based on the first two digits of the SIC Code, we use dummy vari-



ables for each industry that represents more than 10% of our total sample: (i) Finance, Insurance and Real Estate; (ii) Manufacturing; (iii) Transportation and Public Utilities.

The data used to compute all these firm-level variables was collected from the database Capital IQ.

Tsalavoutas et al. (2020) also argue that studies on disclosure should consider materiality as a potential determinant, given that the more material the object is for the reporting firm, the higher will be the quality of the information disclosed. Therefore, our final firm-level variable is a proxy for the materiality of the interests in joint ventures, measured by the ratio between the proportional share of the total asset of the joint venture and the total asset of the investor firm.

Given that the results of the HLM model (discussed in 4.2) indicated that both firm-level and country level effects are statistically significant, but that the proportion of the variance of the disclosure index that is explained by firm-level characteristics is much higher than the proportion explained by country-level variables, we decided to focus on only two country-level variables that may properly represent a country's institutional environment, which is the legal system and the level of development. The inclusion of additional country-level variables, such as level of enforcement, size of the capital market, among others, could introduce bias in our analysis, given that it would be correlated with the legal system and the level of development. Leuz (2010) argues that the elements of the institutional environments of each country, such as for example enforcement mechanisms, stock market regulation and financial reporting, are interdependent and are evolved jointly in a complex interrelationship.

Based on La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), we classified the 26 countries of our sample into: (i) Common-law; (ii) French-civil-law; (iii) German-civil-law and (iv) Scandinavian-civil-law. According to La Porta et al. (1998), Common-law (French-civil-law) countries have the strongest (weakest) legal protection of investors. German and Scandi-

navian-civil-law countries are in the middle. Therefore, Common-law countries are expected to be associated with a higher level of disclosure than other countries.

Another important issue is the difference in the level of compliance between firms from emerging and developed countries, which is not properly explored by the previous literature (Kang & Gray, 2011; Tsalavoutas et al., 2020; Zaini, Samkin, Sharma, & Davey, 2018). Zaini et al. (2018) argue that there are differences in the political, economic and social environment between emerging and developed countries and, therefore, prior studies that have been conducted in developed countries are not applicable to emerging economies. To address this issue, we classified our sample into developed and emerging economies based on the 2020 World Economic Situation and Prospectus (United Nations)<sup>2</sup>. Emerging markets are generally associated with a lower level of disclosure compliance, given that they usually have a weaker institutional environment and a low level of enforcement (Zaini et al., 2018). However, emerging countries that raise funds in international markets are under pressure to improve the quality and the transparency of their financial reporting. Therefore, firms from emerging countries would engage in better disclosure practices seeking to be as competitive in attracting foreign funds as firms from developed economies (Kang & Gray, 2011). Emerging countries may 'compensate' their weaker institution environment by improving their disclosure practices.

Using these variables, our main model is presented in Equation 5. This model was estimated using OLS regression with cluster-robust standard errors at the individual level.

$$Index = \alpha + \beta_1 MATERIALITY + \beta_2 BIG4 + \beta_3 SIZE + \beta_4 ADR + \beta_5 OWNER + \beta_6 ROA + \beta_7 INDEBTEDNESS + \beta_8 EQUITY\_ISSUE + \beta_9 DEBT\_ISSUE + \sum_{j=10}^{15} \beta_j INDUSTRY + \sum_{k=13}^{15} \beta_k LEGAL\_SYSTEM + \beta_{16} EMERGING\_COUNTRY + \sum_{l=17}^{19} \beta_l YEAR + \epsilon \quad (5)$$

#### 4. Results

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<sup>2</sup> As additional analysis, we also classified our countries into emerging and developed economies using the World Bank classification, which is based on the level of income, and the results are generally the same.

## **4.1. Descriptive Statistics**

### **4.1.1. Disclosures regarding joint ventures**

Tables 2 and 3, both presented in Appendix A, report a detailed descriptive analysis of the financial information that was collected from the Notes to the financial statements. This Section presents a summary of the main results that can be obtained in this descriptive analysis. However, for a more detailed analysis, especially segregating by country, see Tables 2 and 3 in Appendix A.

Of the total of 1,858 financial statements that were analyzed, in 464 (25%) the firm did not clearly disclose any financial information about their interests in joint ventures. However, we found some firms that disclose the financial information about interests in joint ventures and associate investments together, without identifying which one is a joint venture and which one is an associate investment. Given that after IFRS 12 both investments are measured using the equity method, some firms are disclosing aggregated information for all their ‘investments measured by the equity method’, making it more difficult to obtain the data, as we cannot even differentiate interests in joint ventures from investments in associate, let alone collect the financial information only about joint ventures. This finding is quite intriguing, given that IFRS 12 requires the firm to disclose the financial information of joint ventures separately from the financial information of associate investments (IASB, 2011c, Item B4 and B16).

Of the 1,394 financial statements in which the firm disclosed at least some financial information about their interests in joint ventures, 69% disclosed the financial information individually for each joint venture, 21% disclosed in aggregate for all joint ventures and 10% disclosed mixed (individualized for material joint ventures and aggregated for other joint ventures). This is also related to the presentation format of financial information, given that firms that disclose financial information individually for each joint venture are more likely to present financial information in full (100%, as presented in the joint ventures’ financial statements).

On the other hand, when financial information is presented in aggregate for all joint ventures, it is usually disclosed proportionally to the percentage of interest held by the investor firm.

Regarding the name of the joint ventures, we found 605 (32%) financial statements in which the name is not disclosed, 1,163 (63%) in which the name is disclosed for all joint ventures that the investor firm owns and 90 (5%) in which the name is disclosed only for some joint ventures (possibly only for material joint ventures). In addition, although the mean of the percentage of interest held by the investor firm is close to 50%, we found firms with only 1% (Brazil and Italy) and firms with 99% (Denmark) of interests in the joint ventures.

In relation to the summarized financial information of the interests in joint ventures, IFRS 12 (item B16) requires firms to disclose at least the net income of all their interests in joint ventures, even for immaterial joint ventures. Therefore, all firms with interests in joint ventures should disclose at least the net income of all their joint ventures. However, we found that in 28% of the 1,858 financial statements that were analyzed, the net income of the joint ventures was not disclosed. Similarly, the equity was not disclosed in 27% of the financial statements. These percentages are very high and indicate that, even for the most essential financial information (equity and net income), firms are not complying with the minimum disclosure requirements of IFRS 12. Consequently, it is expected that the incidence of missing or defective disclosure is even more pronounced for the other financial information required by IFRS 12.

Regarding the total asset and the total liabilities of the joint ventures, we found that this financial information was disclosed in only 61% of the financial statements that were analyzed. If we consider only those financial statements in which the total asset and the total liabilities of all interests in joint ventures have been disclosed, this percentage of compliance decreases to only 53%. Similarly, in only 55% of the financial statements we found the information about the revenues of the joint ventures, with only 46% disclosing for all their interests in joint ventures.

The results of our descriptive analysis indicate that firms that had to change their accounting treatment (from proportionate consolidation to the equity method) when adopting IFRS 11 are not properly implementing the disclosure requirements of IFRS 12, not even for the most essential financial information. This issue is quite important, given that in the Basis for Conclusion on IFRS 11, the IASB argued that all information about interests in joint ventures that was previously provided in the financial statements that were prepared using the proportionate consolidation can now be obtained in the Notes, due to the improvement in disclosure requirements brought by IFRS 12. However, this research provides evidence that firms are not providing all disclosures implied by the objectives and requirements of IFRS 12. The potential country-level and firm-level characteristics associated with this missing or defective disclosures are explored in Topic 4.2.

In addition, in only 52% of the financial statements that were analyzed (963 out of 1,858) the investor firm disclosed sufficient financial information about their interests in joint ventures to allow investors to estimate the accounting amounts that would be reported under the proportionate consolidation method instead of the equity method. It means that, despite of the increase in IFRS 12 disclosure requirements, in 48% of our sample the investor would not be able to obtain the same financial information that previously could be obtained using the proportionate consolidation method. The countries with the highest percentage of financial statements in which the information disclosed would be sufficient to estimate the accounting amounts that would be reported under proportionate consolidation were New Zealand (89%), Philippines (79%), Norway (70%), Hong Kong (68%), Malaysia (68%) and South Africa (67%). On the opposite side, we found countries such as Ireland (0%), Kuwait (0%), Sweden (3%), Netherlands (32%) and France (33%).

Finally, for those firms that disclosed some financial information, we also measured the materiality of the joint venture by comparing the financial information of the joint ventures (pro-

portional to the percentage of interest) with the financial information of the investor firm. The results indicate that interests in joint ventures are quite material for our sample, especially in some countries. On average, the total assets (liabilities, equity, revenues and net income) of the joint venture, proportional to the percentage of interest, represent 22% (44%, 16.9%, 53.5% and 40.6%) of the total assets (liabilities, equity, revenues and net income) of the investor firm, which is a quite relevant percentage. The materiality of interests in joint ventures is even more pronounced for firms from some countries, such as Belgium, Brazil, Denmark, Hong Kong, New Zealand, South Africa, Sri Lanka and United Kingdom.

#### 4.1.2. Disclosure Index

Using only the financial information on interests in joint ventures collected from the Notes (assets, liabilities, equity, revenues and net income), we built two different disclosure indexes that ranges from 0% to 100%, as described in Section 3.3. Table 4 shows the descriptive statistics of these two indexes, segregating by country, industry and year.

Table 4: Descriptive statistics for dependent variables (level of compliance)

	INDEX 1					INDEX 2				
	Mean	STD	Medi- an	Min	Ma x	Mean	STD	Medi- an	Min	Ma x
<b>Total</b>	64.6	42.6	100	0	100	61.1	41.3	80	0	100
<b>By country</b>										
Australia	50.0	43.2	40	0	100	41.3	39.5	40	0	100
Belgium	69.0	44.9	100	0	100	65.2	43.9	95	0	100
Brazil	68.1	40.6	100	0	100	66.0	40.2	80	0	100
Canada	62.7	43.9	100	0	100	61.3	43.6	80	0	100
Chile	61.5	47.6	100	0	100	60.0	47.0	90	0	100
Denmark	64.1	44.3	100	0	100	53.5	39.1	60	0	100
Finland	59.5	46.8	100	0	100	53.5	43.0	70	0	100
France	50.2	42.8	40	0	100	47.7	40.8	40	0	100
Germany	68.7	40.7	100	0	100	63.4	38.4	70	0	100

Hong Kong	82.1	28.1	100	20	100	79.4	28.0	100	20	100
Ireland	51.4	10.7	60	40	60	51.4	10.7	60	40	60
Italy	68.0	42.6	100	0	100	57.3	39.0	60	0	100
Kuwait	20.0	40.0	0	0	80	15.0	30.0	0	0	60
Malaysia	87.7	21.1	100	40	100	86.8	21.2	100	40	100
Mexico	60.3	44.4	80	0	100	55.4	42.0	50	0	100
Netherlands	47.6	42.4	40	0	100	41.6	36.6	40	0	100
New Zealand	88.9	33.3	100	0	100	88.9	33.3	100	0	100
Norway	73.7	42.3	100	0	100	68.4	40.8	100	0	100
Philippines	77.9	41.6	100	0	100	65.4	40.2	80	0	100
Poland	53.2	49.5	90	0	100	53.2	49.5	90	0	100
South Africa	78.3	34.5	100	0	100	76.5	34.0	100	0	100
Spain	58.0	49.4	100	0	100	54.0	47.2	80	0	100
Sri Lanka	74.0	38.2	100	0	100	73.8	38.5	100	0	100
Sweden	38.8	33.3	40	0	100	38.8	33.3	40	0	100
Turkey	65.4	45.2	100	0	100	65.4	45.2	100	0	100
United Kingdom	75.0	37.1	100	0	100	73.3	36.7	100	0	100

***By industry***

Finance, Insurance, Real Estate	64.0	43.5	100	0	100	60.6	42.3	80	0	100
Manufacturing	62.9	42.1	80	0	100	60.2	40.9	70	0	100
Transport. & Public Utilities	62.3	44.0	100	0	100	59.5	42.8	80	0	100
Others	67.9	41.4	100	0	100	63.4	39.9	80	0	100

***By year***

2013	65.4	42.6	100	0	100	62.3	41.7	80	0	100
2014	63.3	42.8	100	0	100	59.8	41.3	80	0	100
2015	64.9	42.4	100	0	100	61.4	41.0	80	0	100
2016	64.9	42.7	100	0	100	61.5	41.4	80	0	100

<b>ANOVA</b>	<b>F value</b>	<b>Pr(&gt;F)</b>	<b>F value</b>	<b>Pr(&gt;F)</b>
Group: Country	4.858	4.38e-14 ***	5.547	<2e-16 ***
Group: Industry	1.837	0.138	0.923	0.429

Group: Year	0.213	0.888	0.274	0.844
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**Note:** This table presents the descriptive statistics (mean, standard deviation, median, minimum and maximum) of the two disclosure indexes analyzed in this research. These descriptive statistics were first presented using the total sample and then segregating by country, by industry and by year. The last part of this table shows the results of the ANOVA test and indicates whether there are statistically significant differences in disclosure indexes between countries, industries and years.

The mean of the first (second) disclosure index is 64.6% (61.1%), with 970 (789) financial statements (of the total of 1,858) disclosing all financial information about their investments in joint ventures (highest score) and 464 (464) not disclosing any financial information (lowest score). As argued before, firms are not properly implementing the disclosure requirements of IFRS 12, not even for the primary financial information (assets, liabilities, equity, revenues and net income), let alone with the more detailed disclosure requirements proposed by IFRS 12, such as joint venture's cash and cash equivalents, depreciation and amortization expenses, other comprehensive income, among others (IASB, 2011c, Items B12 and B13) .

It would be expected that the level of disclosure would be lower in the first year of adoption of IFRS 12, since firms would still be adapting to the new disclosure requirements, but that the level of disclosure would be improved over time. However, Table 4 shows that this non-compliance is not a transitory problem, given that the disclosure index remained almost constant during the four years after the implementation of IFRS 12. Similarly, industry is not an important factor to explain the firms' disclosure index, given that the difference between firms from different industries is not statistically significant.

Regarding to the country, Table 4 indicates that there is a statistically significant difference in the disclosure index between firms from different countries. Specifically, the highest indexes of disclosure were presented by firms from countries such as New Zealand, Malaysia, Hong Kong and South Africa. On the contrary, firms from Kuwait, Sweden, Netherlands and Australia had the lowest levels of compliance with the disclosure requirements of IFRS 12.

#### **4.1.3.Independent Variables**



Table 5 presents the descriptive statistics of the firm-level independent variables. All the results reported in this paper were estimated without any procedure for dealing with outliers. However, we re-estimated all models winsorizing at 1% and the results and conclusions remained similar.

Table 5: Descriptive statistics of the firm-level independent variables

	<b>Obs</b>	<b>Mean</b>	<b>Stand. Dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<i><b>Non-dichotomous</b></i>						
Total assets (in millions USD)	1,857	30,240.05	153,449.85	2,556.10	1.39	2,514,988.80
Return on Assets (%)	1,846	2.69	5.44	3.16	-58.3	39.8
Leverage (%)	1,857	59.17	35.56	58.14	0.37	759.61
Ownership Concentration (%)	1,854	33.93	22.52	30.02	0.06	100.00
Equity Issue (%)	1,853	59.31	1,273.08	0.00	-98.36	44,325.73
Debt Issue (%)	1,850	102.43	1,826.81	2.44	-100.00	64,636.84
Materiality (%)	1,128	22.38	191.49	4.52	0.00	5,328.68
<i><b>Dichotomous</b></i>						
BIG4 (1 = audited by Big 4)	1,858	78,6%	<i>Proportion of firms audited by a Big 4</i>			
ADR (1 = US cross-listed)	1,858	6,9%	<i>Proportion of firms that are cross-listed in the US</i>			
<i><b>Industry</b></i>						
Finance, Insurance, Real Estate	332					
Manufacturing	524					
Transportation and Public Utilities	415					
Other	587					

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**Note:** The first part of this table presents the descriptive statistics for the non-dichotomous firm-level variables: (i) total assets (in millions USD); (ii) Return on Assets (%), measured by the ratio of earnings before interest and taxes to total assets; (iii) Leverage (%), measured by the ratio of total liabilities to total assets; (iv) Ownership concentration (%), measured by the percentage held by the largest shareholder; (v) Equity Issue (%) represents the percentage change in common stock; (vi) Debt Issue (%) represents the percentage change in total debts; and (vii) Materiality (%), measured by the ratio between the proportional share of the total asset of the joint venture and the total asset of the investor firm. Regarding the dichotomous variables, the second part of this table indicates the proportion of firms audited by a Big 4 and also the proportion of firms that are cross-listed in the US (NYSE or NASDAQ). The last part of this table presents the number of observations by industry, considering only those industries with more than 10% of our total sample.

Regarding to the country-level variables, our total sample (26) is composed by 9 Common-law countries (Australia, Canada, Hong Kong, Ireland, Malaysia, New Zealand, South Africa, Sri Lanka and United Kingdom), 12 French-civil-law countries (Belgium, Brazil, Chile, France, Italy, Kuwait, Mexico, Netherlands, Philippines, Poland, Spain and Turkey), 1 German-civil-law countries (Germany) and 4 Scandinavian-civil-law countries (Denmark, Finland, Norway and Sweden). Our analyses indicate that firms from Common-law countries are associated with higher levels of compliance with the disclosure requirements of IFRS 12 and firms from French-civil-law countries or Scandinavian-civil-law countries were those that had the lowest levels of compliance. German-civil law countries were in the middle.

In addition, our sample is also composed by 10 emerging countries (Brazil, Chile, Hong Kong, Kuwait, Malaysia, Mexico, Philippines, South Africa, Sri Lanka and Turkey) and 16 developed countries (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, New Zealand, Norway, Poland, Spain, Sweden and United Kingdom) and our findings suggest that emerging countries, on average, are associated with a higher level of compliance with IFRS 12 disclosure requirements than developed countries.

#### **4.2. Determinants of level of Compliance**

Our previous descriptive analyses suggested that firms that had to change their accounting treatment from proportionate consolidation to the equity method when adopting IFRS 11 are not properly implementing the disclosure requirements of IFRS 12. In order to understand the

specific characteristics associated with missing/defective disclosure, we performed an analysis of the determinants of disclosure compliance with IFRS 12.

We first estimate the null version of a Hierarchical Linear Model (HLM) with three levels and repeated measures, in order to identify the proportion of the variance of our dependent variable (disclosure index) that is explained by specific-characteristics of each level of the hierarchical structure of our data (i.e., firm-level and country-level) (Rabe-Hesketh & Skrondal, 2012). Specifically, with this null model, we can identify not only whether the specific characteristics of both firms and countries are statistically significant to explain the variance in the disclosure index, but also to assess whether firm-level characteristics are more (or less) relevant than country-level characteristics. The results are presented in Table 6.

Table 6: Hierarchical Linear Model (HLM) – Null Model

<b>PANEL A - INDEX 1</b>					
<b>Fixed Effects</b>					
	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>		
Intercept	3.3231	0.1037	0.0000		
<b>Random Effects</b>					
	<i>Variance</i>	<i>Std. Error</i>	<i>Confidence intervals (99%)</i>		<i>ICC</i>
Firm level	3.16435	1.7789	1.777994	1.7794226	0.8520
Country level	0.0863	0.2938	0.2751097	0.2779443	0.0232
Residual	0.4634	0.6807	0.6805389	0.6808726	

Observations: 1,858; Years: 4; Firms: 551; Countries: 26.

Log Likelihood = -2796.9

AIC = 5601.7850      BIC = 5623.8940

Pseudo-R<sup>2</sup> (total) = 0.8752

LRT (1 Country)	0.04599 **
LRT (1 Firm)	0.00000 ***

  

<b>PANEL B - INDEX 2</b>			
<b>Fixed Effects</b>			
	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
Intercept	3.2756	0.1044	0.0000

<b>Random Effects</b>					
	<i>Variance</i>	<i>Std. Error</i>	<i>Confidence intervals (99%)</i>		<i>ICC</i>
Firm level	3.0706	1.7523	1.7515155	1.7529253	0.8474
Country level	0.0931	0.3051	0.2863584	0.289179	0.0257
Residual	0.4600	0.6782	0.6780777	0.6784101	

Observations: 1,858; Years: 4; Firms: 551; Countries: 26.

Log Likelihood = -2784.6

AIC = 5577.1632      BIC = 5599.2722

Pseudo-R<sup>2</sup> (total) = 0.8731

LRT (1|Country)      0.03405 \*\*

LRT (1|Firm)      0.00000 \*\*\*

Note: This table presents the results of the Hierarchical Linear Model (HLM) in the null version, both for the disclosure index 1 (Panel A) and the disclosure index 2 (Panel B), in order to evaluate whether the random effects at firm and country level are statistically significant.

The first important conclusion that can be drawn from Table 6 is that both firm-level and country-level variables are statistically significant to explain the firms' level of compliance with the disclosure requirements of IFRS 12. Both Likelihood-Ratio Tests (LRT) indicated that the company-level and the country-level random effects are statistically different from zero at a significance level of 1% and 5%, respectively. This corroborates previous literature that suggests that the level of disclosure is explained not only by firm-specific characteristics, but also by the characteristics of the country in which the firm operates (Glaum et al., 2013). However, the results reported in Table 6 also indicate that the proportion of the variance of the dependent variable (disclosure index) that is explained by the firm-level clustering is much higher than the proportion explained by the country-level clustering. Specifically, the Intra-class Correlation Coefficient (ICC) for the firm-level is 85.20% (84.74%) considering the first (second) disclosure index. For the country-level, this coefficient is only 2.32% (2.57%) using the first (second) disclosure index. It means that firm level variables are more important to

explain the firms' level of compliance with the disclosure requirements of IFRS 12 than country level variables, although both are statistically significant.

Consequently, we performed an analysis of the determinants of disclosure compliance with IFRS 12 estimating a regression model in which the disclosure index is explained by ten firm-level variables and two country-level variables. All these variables are described in Topic 3.4 and the descriptive statistics are presented in Topic 4.1.3.

Table 7 presents the results for the estimation of four different models. In Model 1 compliance (dependent variable) is measured by our first disclosure index, which assess whether the firm disclosed the financial information (assets, liabilities, equity, revenues and net income) of at least some of their interests in joint ventures or not. Model 2 is similar to Model 1, but using our second disclosure index as the dependent variable. As explained before, this second disclosure index differentiates firms that disclosed the financial information for all their interests in joint ventures and firms that disclosed only for some of their interests in joint ventures. Seeking to better explore the effect of a materiality threshold in our analyses, we first estimate these two models without the MATERIALITY variable. Following, in Model 3 (4) we estimate again the Model 1 (2), but adding the MATERIALITY variable.

Table 7: Determinants of compliance: OLS regression results

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
	Index 1	Index 2	Index 1 - Materiality	Index 2 - Materiality
Constant	3.281*** (0.249)	3.261*** (0.245)	4.527*** (0.018)	4.529*** (0.033)
Materiality			0.00002*** (0.000)	0.00004** (0.000)
BIG4	0.086 (0.123)	0.102 (0.121)	0.004 (0.009)	0.037** (0.017)

Size	0.069*** (0.024)	0.063*** (0.024)	0.006** (0.003)	-0.002 (0.004)
ADR	-1.041*** (0.298)	-1.014*** (0.294)	-0.091** (0.036)	-0.069 (0.048)
ROA	0.012 (0.009)	0.014 (0.009)	0.002** (0.001)	0.005*** (0.001)
Leverage	-0.004*** (0.001)	-0.004*** (0.001)	-0.0002 (0.0003)	-0.001** (0.0004)
Owner	-0.005** (0.002)	-0.004** (0.002)	0.0002 (0.0002)	0.0004 (0.0003)
Finance	-0.202 (0.136)	-0.184 (0.134)	-0.001 (0.010)	0.023 (0.018)
Transportation	-0.162 (0.126)	-0.136 (0.124)	0.018* (0.010)	0.049*** (0.017)
Manufacturing	-0.098 (0.111)	-0.075 (0.109)	0.005 (0.009)	0.022 (0.015)
Equity Issue	0.00000 (0.00001)	0.00000 (0.00001)	-0.00000 (0.00000)	-0.00000 (0.00000)
Debt Issue	-0.00003 (0.00003)	-0.00003 (0.00003)	-0.00000 (0.00000)	-0.00000 (0.00000)
French-civil-law	-0.628*** (0.103)	-0.650*** (0.103)	-0.016* (0.009)	-0.053*** (0.013)

German-civil-law	-0.069 (0.200)	-0.097 (0.197)	0.004 (0.011)	-0.031 (0.024)
Scandinavian-civil-law	-0.346* (0.179)	-0.391** (0.176)	-0.052** (0.022)	-0.121*** (0.029)
Emerging Economies	0.549*** (0.104)	0.557*** (0.102)	-0.012* (0.007)	0.015 (0.013)
ADR*Emerging Economies	0.927** (0.372)	0.892** (0.367)	0.092** (0.036)	0.044 (0.055)
Year2014	0.035 (0.142)	0.032 (0.140)	-0.001 (0.010)	-0.007 (0.018)
Year2015	0.108 (0.140)	0.104 (0.138)	0.002 (0.010)	-0.007 (0.018)
Year2016	0.074 (0.140)	0.071 (0.138)	0.0005 (0.010)	-0.005 (0.018)
Observations	1,838	1,838	1,112	1,112
Adjusted R-squared	0.04981	0.05359	0.03003	0.06409
F-statistics	6.068***	6.474***	2.72***	4.804***

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

*Materiality* is measured by the ratio between the proportional share of the total asset of the joint venture and the total asset of the investor firm; *BIG4* is a dummy variable coded as 1 for firms that are audited by a BIG4 and 0 otherwise; *Size* is measured by the total asset (in millions USD); *ADR* is a dummy variable coded as 1 for firms cross-listed on NYSE or NASDAQ and 0 otherwise; *ROA* is the return on assets (%), measured by the ratio of earnings before interest and taxes to total asset; *Leverage (%)* is measured by the ratio of total liabilities to total assets; *Owner (%)* is the ownership concentration, measured by the percentage held by the largest shareholder; *Equity Issue (%)* represents the percentage change in common stock; *Debt Issue (%)* represents the percentage change in total debts; *Emerging Economies* is a dummy variable coded as 1 for firm from emerging economies and 0 otherwise. We also added dummy variables for the legal system (*French-civil-law*, *German-civil-law* and *Scandinavian-civil-law*), for the industries with more than 10% of the total sample (*Finance*, *Transportation* and *Manufacturing*) and also time dummies.

The estimation results for Model 1 are quite similar to the results obtained in Model 2, given that the same firm-level variables and country-level variables that are statistically significant

to explain the disclosure index 1 are also statistically significant to explain the disclosure index 2. In more detail, Models 1 and 2 indicate that SIZE is significantly positively associated with the level of compliance with IFRS 12 disclosure requirements. This finding is aligned with previous literature that suggest that larger firms are expected to disclose more information than smaller firms (Ajili & Bouri, 2018; Archambault & Archambault, 2003; Cascino & Gassen, 2015; Mazzi et al., 2018; Santos et al., 2014).

On the contrary, we found a negative association between the leverage and the level of compliance with the disclosure requirements of IFRS 12, suggesting that more leveraged firms are associated with lower level of disclosure. Based on Signaling Theory, a possible explanation is that more leveraged firms would tend to disclose less information to the market, in an attempt to hide information about their financial performance and position. An alternative explanation is that creditors are usually able to access firm's private information, not depending on the information that is disclosed to the market (Archambault & Archambault, 2003).

Similarly, previous literature suggests that firms with higher ownership concentration have less incentives to disclose information, since this large investor will be able to obtain private information directly from the firm, not depending on public disclosure of information (Archambault & Archambault, 2003; Glaum et al., 2013). Our finding is consistent with this view, given that OWNER is significantly negatively associated with the level of compliance with the disclosure requirements of IFRS 12, both in Model 1 and Model 2.

Our models were estimated using industry dummy variables, but none of them were statistically significant in Models 1 and 2. This would be expected, given that the descriptive analysis (Table 4) indicated that the mean of the disclosure index is not statistically different between industries.

Regarding our country-level variables (legal system and emerging *versus* developed economies), both are statistically significant, corroborating the argument that the differences



in the cultural, economic and institutional environment of each country may also influence firms' level of compliance with disclosure requirements.

In more detail, the coefficients for French-civil-law countries and Scandinavian-civil-law countries are negative and statistically significant. This finding means that the level of compliance with IFRS 12 disclosure requirements of firms from French-civil-law countries and from Scandinavian-civil-law countries is lower than the level of compliance of firms from Common-law countries. The German-civil-law variable also has a negative sign, but it is not statistically significant. As expected, firms from Common-law countries are associated with a higher level of disclosure than other countries. This finding is supported by the argument that Common-law countries usually have the strongest legal protection of investors (measured by the legal rules and the quality of law enforcement), which may explain the higher level of disclosure. On the contrary, French civil law countries have the weakest legal protection of investors (La Porta et al., 1998; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997).

The previous literature does not properly explore the effect of the difference between emerging and developed countries on the level of disclosure of firms (Kang & Gray, 2011; Tsalavoutas et al., 2020; Zaini et al., 2018). However, emerging countries are usually associated with a weaker institutional environment and a weaker level of enforcement and, consequently, with a low level of disclosure (Zaini et al., 2018). Contrary to this expectation, the sign of EMERGING ECONOMIES variable is positive and statistically significant, suggesting that firms from emerging countries are associated with a higher level of compliance with IFRS 12 disclosure requirements than firms from developed countries. Specifically, our descriptive analyses (Topic 4.1) indicated that the mean of the first (second) disclosure index for firms from emerging countries is 70.89% (68.48%), while for firms from developed countries it is 60.56% (56.50%). A possible explanation for this finding is that firms from emerging countries may 'compensate' their weaker institutional environment by improving their disclo-

sure practices, in order to be as competitive in attracting funds in the international market as firms from developed economies (Kang & Gray, 2011). Seeking to provide signs to foreign investors, firms from emerging countries have to improve the quality and the transparency of their financial reporting.

Also contrary to expectations, we found a negative relation between ADR and the disclosure index, suggesting that firms cross-listing on US stock exchanges (NYSE or NASDAQ) are associated with a lower level of compliance with IFRS 12 disclosure requirements than firms that are not cross-listed. Specifically, the mean of the first (second) disclosure index for firms that are cross-listed on US stock exchanges is 59.38% (56.17%) and for firms that are not cross-listed it is 64.94% (61.5%). We added an interaction term between ADR and EMERGING ECONOMIES, which presented a positive and statistically significant sign in both Models 1 and 2. It means that firms from emerging countries that are cross-listed on US stock exchanges are associated with a higher level of compliance with IFRS 12 disclosure requirements than firms that are also cross-listed on US stock exchanges, but that are from developed countries.

Finally, the time dummy variables are not statistically significant, corroborating the descriptive statistics presented in Table 4 that indicate that the disclosure index remained almost constant, without any improvement, during the four years of application of IFRS 11 and IFRS 12. In Models 3 and 4 we estimate exactly the same equations as in Models 1 and 2, respectively, but we add the MATERIALITY variable, which is measured by the ratio between the proportional share of the total assets of the joint venture and the total assets of the investor firm. Given that this materiality variable requires firms to disclose the total assets of at least some of their joint ventures, there is a high number of missing observations. Consequently, Models 3 and 4 were estimated using 1,112 observations. The results indicate that the sign of the MATERIALITY variable is positive and statistically significant, suggesting that the greater the

materiality of interests in joint ventures for the reporting firm, the higher will be the level of compliance with IFRS 12 disclosure requirements.

After controlling for a materiality threshold, some of the firm-level and country-level variables have reduced or lost their significance in Models 3 and 4. For example, the OWNER variable was statistically significant in Models 1 and 2, but lost its significance in Models 3 and 4. The variable SIZE, which was statistically significant at 1% in Models 1 and 2, became significant at only 5% in Model 3 and lost its significance in Model 4.

On the other side, we found some variables that were not statistically significant in Models 1 and 2, but that after adding the MATERIALITY variable, they became statistically significant in Models 3 and 4. Turning to the estimation results for Model 4, for example, we found a positive and statistically significant association between being audited by a BIG 4 audit firm (Deloitte, EY, KPMG and PwC) and the level of compliance with IFRS 12 disclosure requirements. This finding is aligned with previous literature that suggests that larger audit firms tend to perform higher quality audit procedures than smaller audit firms (Bepari et al., 2014; Cascino & Gassen, 2015; Florio et al., 2018; Glaum et al., 2013; Tsalavoutas, 2011). Similarly, the sign of the ROA variable is also positive and statistically significant, suggesting that more profitable firms seem to have a higher level of disclosure, seeking to provide signals to the market about their positive performance, based on Signaling Theory (Cascino & Gassen, 2015; Lazar & Velte, 2018; Lucas & Lourenço, 2014).

## **5. Concluding Remarks**

The IFRS 11 eliminates the firm's option of apply proportionate consolidation to account for interests in joint ventures. In addition, the IFRS 12 requires entities to disclose in the Notes information that enables users of accounting information to assess the nature, extension, financial effects and risks associated with its interests in joint ventures, including a summary of joint ventures' financial information, which is expected to allow users to estimate the account-

ing amounts that would be reported by firms whether the proportionate consolidated method was used instead of the equity method. Therefore, the improvement in disclosure requirements proposed by IFRS 12 is expected to compensate the informational loss resulting from the elimination of the proportionate consolidation.

However, prior literature provides empirical evidence of non-compliance and of discrepancies in the level of firms' compliance with IFRS mandatory disclosure requirements (Tsalavoutas et al., 2020). We add to this literature by analyzing the level and the determinants of compliance with IFRS 12 disclosure requirements regarding interests in joint ventures, using a comprehensive international sample.

Our findings indicate that firms are not complying with some of the main disclosure requirements of IFRS 12, especially in some countries such as Kuwait, Sweden, Netherlands and Australia. Also, this non-compliance is not a transitory problem, given that the level of compliance has not increased during the four years after the implementation of IFRS 12. We also find that the firm-level characteristics, such as size, leverage, ownership concentration and joint ventures materiality, may explain the level of compliance with IFRS 12 disclosure requirements, and that they are more important in explaining this firm's behaviour when compared to the country-level variables.

These findings are useful for the post-implementation review of IFRS 11 and IFRS 12 currently in place, as far as they show that firms are not properly implementing the disclosure requirements of IFRS 12, not even for the most essential financial information. Consequently, the improvement in disclosure requirements proposed by IFRS 12 are not compensating the informational loss resulting from the elimination of the proportionate consolidation.

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## **APPENDIX A – Summary of the financial information that was collected in the Notes**

Table 2: Summary of Disclosed Variables – Part A



Country	Obs	Level of aggregation	Name - JV	% of Interest	Presentat. Format
Australia	16	Individualized	11 Yes - All JV	14 Mean 45.6%	In full (100%) 5
		Aggregated	0 Yes - Some JV	0 Min 12.0%	Proportional 6
		Mixed	0 Not disclosed	2 Max 59.0%	Mixed 0
		Not disclosed	5		Not disclosed 5
Belgium	42	Individualized	22 Yes - All JV	30 Mean 52.0%	In full (100%) 22
		Aggregated	4 Yes - Some JV	0 Min 33.0%	Proportional 8
		Mixed	4 Not disclosed	12 Max 75.0%	Mixed 0
		Not disclosed	12		Not disclosed 12
Brazil	272	Individualized	198 Yes - All JV	200 Mean 45.2%	In full (100%) 178
		Aggregated	3 Yes - Some JV	12 Min 1.0%	Proportional 24
		Mixed	12 Not disclosed	60 Max 90.0%	Mixed 11
		Not disclosed	59		Not disclosed 59
Canada	154	Individualized	76 Yes - All JV	114 Mean 49.1%	In full (100%) 68
		Aggregated	34 Yes - Some JV	5 Min 10.0%	Proportional 42
		Mixed	1 Not disclosed	35 Max 85.0%	Mixed 1
		Not disclosed	43		Not disclosed 43
Chile	41	Individualized	25 Yes - All JV	26 Mean 46.4%	In full (100%) 25
		Aggregated	0 Yes - Some JV	0 Min 20.0%	Proportional 1
		Mixed	1 Not disclosed	15 Max 67.0%	Mixed 0
		Not disclosed	15		Not disclosed 15
Denmark	34	Individualized	9 Yes - All JV	19 Mean 48.8%	In full (100%) 14
		Aggregated	7 Yes - Some JV	6 Min 16.0%	Proportional 7
		Mixed	9 Not disclosed	9 Max 99.0%	Mixed 4
		Not disclosed	9		Not disclosed 9
		Individualized	18 Yes - All JV	20 Mean 40.5%	In full (100%) 18

Country	Obs	Level of aggregation	Name - JV	% of Interest	Presentat. Format		
Finland	37	Aggregated	2 Yes - Some JV	4 Min	10.0 %	Proportional	2
		Mixed	4 Not disclosed	13 Max	50.0 %	Mixed	4
		Not disclosed	13			Not disclosed	13
France	244	Individualized	78 Yes - All JV	127 Mean	47.7 %	In full (100%)	78
		Aggregated	54 Yes - Some JV	3 Min	20.0 %	Proportional	66
		Mixed	29 Not disclosed	114 Max	76.0 %	Mixed	17
Germany	108	Not disclosed	83			Not disclosed	83
		Individualized	36 Yes - All JV	80 Mean	49.7 %	In full (100%)	40
		Aggregated	33 Yes - Some JV	3 Min	25.0 %	Proportional	32
Hong Kong	84	Mixed	19 Not disclosed	25 Max	75.0 %	Mixed	16
		Not disclosed	20			Not disclosed	20
		Individualized	53 Yes - All JV	60 Mean	51.1 %	In full (100%)	45
Ireland	7	Aggregated	26 Yes - Some JV	5 Min	30.0 %	Proportional	34
		Mixed	5 Not disclosed	19 Max	75.0 %	Mixed	5
		Not disclosed	0			Not disclosed	0
Italy	103	Individualized	2 Yes - All JV	2 Mean	50.0 %	In full (100%)	0
		Aggregated	5 Yes - Some JV	0 Min	50.0 %	Proportional	7
		Mixed	0 Not disclosed	5 Max	50.0 %	Mixed	0
Kuwait	4	Not disclosed	0			Not disclosed	0
		Individualized	76 Yes - All JV	66 Mean	44.9 %	In full (100%)	62
		Aggregated	1 Yes - Some JV	10 Min	1.0 %	Proportional	15
Kuwait	4	Mixed	0 Not disclosed	27 Max	70.0 %	Mixed	0
		Not disclosed	26			Not disclosed	26
		Individualized	0 Yes - All JV	0 Mean	50.0 %	In full (100%)	0
Kuwait	4	Aggregated	0 Yes - Some JV	1 Min	50.0 %	Proportional	0
		Not disclosed	0			Not disclosed	0

Country	Obs	Level of aggregation	Name - JV	% of Interest	Presentat. Format		
		Mixed	1 Not disclosed	3 Max	50.0 %	Mixed	1
		Not disclosed	3			Not disclosed	3
		Individualized	22 Yes - All JV	22 Mean	46.9 %	In full (100%)	21
Malaysia	31	Aggregated	5 Yes - Some JV	4 Min	36.0 %	Proportional	9
		Mixed	4 Not disclosed	5 Max	51.0 %	Mixed	1
		Not disclosed	0			Not disclosed	0
		Individualized	44 Yes - All JV	40 Mean	47.0 %	In full (100%)	37
Mexico	63	Aggregated	0 Yes - Some JV	4 Min	20.0 %	Proportional	6
		Mixed	0 Not disclosed	19 Max	51.0 %	Mixed	1
		Not disclosed	19			Not disclosed	19
		Individualized	13 Yes - All JV	18 Mean	44.8 %	In full (100%)	13
Netherlands	63	Aggregated	17 Yes - Some JV	7 Min	20.0 %	Proportional	21
		Mixed	12 Not disclosed	38 Max	50.0 %	Mixed	8
		Not disclosed	21			Not disclosed	21
		Individualized	7 Yes - All JV	8 Mean	50.2 %	In full (100%)	8
New Zealand	9	Aggregated	1 Yes - Some JV	0 Min	50.0 %	Proportional	0
		Mixed	0 Not disclosed	1 Max	51.0 %	Mixed	0
		Not disclosed	1			Not disclosed	1
		Individualized	38 Yes - All JV	38 Mean	49.7 %	In full (100%)	41
Norway	63	Aggregated	4 Yes - Some JV	7 Min	40.0 %	Proportional	4
		Mixed	7 Not disclosed	18 Max	54.0 %	Mixed	4
		Not disclosed	14			Not disclosed	14
		Individualized	18 Yes - All JV	22 Mean	51.9 %	In full (100%)	18
Philippines	28	Aggregated	1 Yes - Some JV	0 Min	30.0 %	Proportional	0
		Mixed	3 Not disclosed	6 Max	78.0 %	Mixed	4

Country	Obs	Level of aggregation	Name - JV	% of Interest			Presentat. Format		
		Not disclosed	6				Not disclosed	6	
Poland	38	Individualized	20	Yes - All JV	20	Mean	48.2 %	In full (100%)	20
		Aggregated	1	Yes - Some JV	0	Min	33.0 %	Proportional	1
		Mixed	0	Not disclosed	18	Max	50.0 %	Mixed	0
		Not disclosed	17					Not disclosed	17
South Africa	84	Individualized	32	Yes - All JV	54	Mean	48.4 %	In full (100%)	45
		Aggregated	30	Yes - Some JV	7	Min	27.0 %	Proportional	26
		Mixed	15	Not disclosed	23	Max	75.0 %	Mixed	6
		Not disclosed	7					Not disclosed	7
Spain	98	Individualized	35	Yes - All JV	35	Mean	46.6 %	In full (100%)	34
		Aggregated	13	Yes - Some JV	9	Min	20.0 %	Proportional	23
		Mixed	9	Not disclosed	54	Max	73.0 %	Mixed	0
		Not disclosed	41					Not disclosed	41
Sri Lanka	40	Individualized	24	Yes - All JV	26	Mean	50.5 %	In full (100%)	20
		Aggregated	10	Yes - Some JV	0	Min	47.0 %	Proportional	14
		Mixed	0	Not disclosed	14	Max	60.0 %	Mixed	0
		Not disclosed	6					Not disclosed	6
Sweden	32	Individualized	14	Yes - All JV	20	Mean	49.1 %	In full (100%)	10
		Aggregated	9	Yes - Some JV	0	Min	45.0 %	Proportional	13
		Mixed	0	Not disclosed	12	Max	50.0 %	Mixed	0
		Not disclosed	9					Not disclosed	9
Turkey	71	Individualized	48	Yes - All JV	50	Mean	45.6 %	In full (100%)	46
		Aggregated	1	Yes - Some JV	0	Min	25.0 %	Proportional	3
		Mixed	0	Not disclosed	21	Max	70.0 %	Mixed	0
		Not disclosed	22					Not disclosed	22

Country	Obs	Level of aggregation	Name - JV	% of Interest	Presentat. Format
United Kingdom	92	Individualized	40 Yes - All JV	52 Mean 48.4%	In full (100%) 42
		Aggregated	28 Yes - Some JV	3 Min 20.0%	Proportional 36
		Mixed	11 Not disclosed	37 Max 73.0%	Mixed 1
		Not disclosed	13		Not disclosed 13
TOTAL	1,858	Individualized	959 Yes - All JV	116 Mean 47.6%	In full (100%) 910
		Aggregated	289 Yes - Some JV	90 Min 1.0%	Proportional 400
		Mixed	146 Not disclosed	605 Max 99.0%	Mixed 84
		Not disclosed	464		Not disclosed 464

**Note:** This table shows by country a summary of some of the financial information on interests in joint ventures disclosed in the Notes to each of the 1,858 financial statements that were analyzed. Specifically, the first part of this table indicates the level of aggregation of financial information, if it was disclosed individually for each joint venture, aggregated for all joint ventures or mixed (individualized for material joint ventures and aggregated for other joint ventures). The next columns indicate whether the name of the joint venture was disclosed for all joint ventures, for only some joint ventures or if it has not been disclosed. In addition, this table also shows the mean, minimum and maximum percentage of interest held by the investor firm in each joint venture. Finally, the last two columns indicate whether the financial information of joint ventures was disclosed in full (100%), proportional to the percentage of interest, or mixed (in full for joint ventures that were disclosed individually and proportional to the percentage of interest for joint ventures that were disclosed in aggregated).

Table 3: Summary of Disclosed Variables – Part B

Country	Obs	ASSET		LIABILITY		EQUITY		REVENUES		NET INCOME		Esti- mation of PC						
		Disclosure	Mat er.	Disclosure	Mat er.	Disclosure	Ma ter.	Disclosure	Mat er.	Disclosure	Mat er.							
Australia	16	Yes - All	4	Yes - All	4	Yes - All	7	Yes - All	4	Yes - All	7	Yes	6					
		Yes - Some	2	4.5 %	Yes - Some	2	5.5 %	Yes - Some	4	5.3 %	Yes - Some	2	7.0 %	Yes - Some	4	18.8 %	No	10
		Not	10		Not	10		Not	5		Not	10		Not	5			
Belgium	42	Yes - All	27	Yes - All	27	Yes - All	27	Yes - All	21	Yes - All	27	Yes	26					
		Yes - Some	3	29.0 %	Yes - Some	3	37.5 %	Yes - Some	3	20.7 %	Yes - Some	5	52.0 %	Yes - Some	2	59.5 %	No	16
		Not	12		Not	12		Not	12		Not	16		Not	13			
Brazil	272	Yes - All	17	Yes - All	17	Yes - All	20	Yes - All	12	Yes - All	19	Yes	14					
		Yes - Some	12	15.7 %	Yes - Some	12	15.2 %	Yes - Some	10	23.2 %	Yes - Some	13	101.4 %	Yes - Some	10	44.2 %	No	13
		Not	89		Not	89		Not	59		Not	1		Not	66			
Canada	154	Yes - All	89	Yes - All	88	Yes - All	10	Yes - All	77	Yes - All	10	Yes	79					
		Yes - Some	4	15.0 %	Yes - Some	5	28.9 %	Yes - Some	6	13.6 %	Yes - Some	4	18.3 %	Yes - Some	3	50.6 %	No	75
		Not	61		Not	61		Not	47		Not	73		Not	45			
Chile	41	Yes - All	25	Yes - All	25	Yes - All	25	Yes - All	19	Yes - All	26	Yes	22					
		Yes - Some	1	7.0 %	Yes - Some	1	9.5 %	Yes - Some	1	3.9 %	Yes - Some	3	7.8 %	Yes - Some	0	7.7 %	No	19
		Not	15		Not	15		Not	15		Not	19		Not	15			
Denmark	34	Yes - All	11	Yes - All	11	Yes - All	18	Yes - All	10	Yes - All	23	Yes	16					
		Yes - Some	10	10.4 %	Yes - Some	10	33.0 %	Yes - Some	6	5.2 %	Yes - Some	8	51.6 %	Yes - Some	2	217.1 %	No	18
		Not	13		Not	13		Not	10		Not	16		Not	9			
Finland	37	Yes - All	17	Yes - All	17	Yes - All	23	Yes - All	15	Yes - All	16	Yes	19					
		Yes - Some	5	4.4 %	Yes - Some	5	3.8 %	Yes - Some	1	6.0 %	Yes - Some	6	1.1 %	Yes - Some	5	14.6 %	No	18
		Not	15		Not	15		Not	13		Not	16		Not	16			
France	244	Yes - All	82	Yes - All	83	Yes - All	14	Yes - All	90	Yes - All	15	Yes	80					
		Yes - Some	14	6.9 %	Yes - Some	13	7.4 %	Yes - Some	3	5.8 %	Yes - Some	21	5.8 %	Yes - Some	9	11.6 %	No	16
		Not	14		Not	14		Not	94		Not	3		Not	85			

Germany	108	Yes - All	49	Yes - All	49	Yes - All	86	Yes - All	46	Yes - All	84	Yes	63					
		Yes - Some	18	3.7%	Yes - Some	18	3.2%	Yes - Some	2	5.1%	Yes - Some	17	5.3%	Yes - Some	2	9.4%	No	45
		Not	41		Not	41		Not	20		Not	45		Not	22			
Hong Kong	84	Yes - All	55	Yes - All	55	Yes - All	77	Yes - All	53	Yes - All	82	Yes	57					
		Yes - Some	6	22.9%	Yes - Some	6	73.8%	Yes - Some	2	12.9%	Yes - Some	7	89.7%	Yes - Some	2	147.9%	No	27
		Not	23		Not	23		Not	5		Not	24		Not	0			
Ireland	7	Yes - All	4	Yes - All	4	Yes - All	5	Yes - All	2	Yes - All	3	Yes	0					
		Yes - Some	0	3.1%	Yes - Some	0	2.2%	Yes - Some	0	3.5%	Yes - Some	0	0.2%	Yes - Some	0	0.4%	No	7
		Not	3		Not	3		Not	2		Not	5		Not	4			
Italy	103	Yes - All	49	Yes - All	49	Yes - All	56	Yes - All	38	Yes - All	48	Yes	57					
		Yes - Some	22	10.2%	Yes - Some	22	15.0%	Yes - Some	21	7.7%	Yes - Some	27	13.2%	Yes - Some	18	22.8%	No	46
		Not	32		Not	32		Not	26		Not	38		Not	37			
Kuwait	4	Yes - All	0	Yes - All	0	Yes - All	1	Yes - All	0	Yes - All	1	Yes	0					
		Yes - Some	1	12.4%	Yes - Some	1	11.4%	Yes - Some	0	17.6%	Yes - Some	0	ND	Yes - Some	0	173.1%	No	4
		Not	3		Not	3		Not	3		Not	4		Not	3			
Malaysia	31	Yes - All	26	Yes - All	26	Yes - All	31	Yes - All	20	Yes - All	30	Yes	21					
		Yes - Some	1	9.1%	Yes - Some	1	15.6%	Yes - Some	0	4.4%	Yes - Some	1	43.5%	Yes - Some	0	12.7%	No	10
		Not	4		Not	4		Not	0		Not	10		Not	1			
Mexico	63	Yes - All	31	Yes - All	31	Yes - All	40	Yes - All	21	Yes - All	36	Yes	30					
		Yes - Some	5	14.9%	Yes - Some	5	16.9%	Yes - Some	4	19.5%	Yes - Some	9	12.0%	Yes - Some	8	32.9%	No	33
		Not	27		Not	27		Not	19		Not	33		Not	19			
Netherlands	63	Yes - All	15	Yes - All	15	Yes - All	35	Yes - All	13	Yes - All	34	Yes	20					
		Yes - Some	10	5.6%	Yes - Some	10	6.3%	Yes - Some	3	11.8%	Yes - Some	11	6.3%	Yes - Some	4	16.4%	No	43
		Not	38		Not	38		Not	25		Not	39		Not	25			
New Zealand	9	Yes - All	8	Yes - All	8	Yes - All	8	Yes - All	8	Yes - All	8	Yes	8					
		Yes - Some	0	21.9%	Yes - Some	0	616.7%	Yes - Some	0	15.9%	Yes - Some	0	66.0%	Yes - Some	0	34.8%	No	1
		Not	1		Not	1		Not	1		Not	1		Not	1			
		Yes - All	37	Yes - All	37	Yes - All	45	Yes - All	35	Yes - All	45	Yes	44					

Norway	63	Yes - Some	8	125.0%	Yes - Some	8	7.5%	Yes - Some	3	12.1%	Yes - Some	11	9.5%	Yes - Some	3	25.6%	No	19
		Not	18		Not	18		Not	15		Not	17		Not	15			
Philippines	28	Yes - All	14		Yes - All	14		Yes - All	18		Yes - All	14		Yes - All	14		Yes	22
		Yes - Some	8	15.0%	Yes - Some	8	17.9%	Yes - Some	4	13.2%	Yes - Some	7	8.3%	Yes - Some	8	12.1%	No	6
		Not	6		Not	6		Not	6		Not	7		Not	6			
Poland	38	Yes - All	20		Yes - All	20		Yes - All	20		Yes - All	21		Yes - All	20		Yes	20
		Yes - Some	0	3.2%	Yes - Some	0	3.6%	Yes - Some	0	3.0%	Yes - Some	0	6.7%	Yes - Some	0	11.8%	No	18
		Not	18		Not	18		Not	18		Not	17		Not	18			
South Africa	84	Yes - All	55		Yes - All	55		Yes - All	77		Yes - All	55		Yes - All	72		Yes	56
		Yes - Some	6	12.9%	Yes - Some	6	23.5%	Yes - Some	0	50.3%	Yes - Some	3	45.6%	Yes - Some	0	53.4%	No	28
		Not	23		Not	23		Not	7		Not	26		Not	12			
Spain	98	Yes - All	50		Yes - All	50		Yes - All	54		Yes - All	42		Yes - All	49		Yes	56
		Yes - Some	7	10.5%	Yes - Some	7	11.9%	Yes - Some	3	80.6%	Yes - Some	14	10.8%	Yes - Some	8	22.8%	No	42
		Not	41		Not	41		Not	41		Not	42		Not	41			
Sri Lanka	40	Yes - All	28		Yes - All	28		Yes - All	33		Yes - All	25		Yes - All	33		Yes	25
		Yes - Some	0	17.0%	Yes - Some	0	112.5%	Yes - Some	1	12.8%	Yes - Some	0	122.5%	Yes - Some	0	26.3%	No	15
		Not	12		Not	12		Not	6		Not	15		Not	7			
Sweden	32	Yes - All	13		Yes - All	10		Yes - All	20		Yes - All	1		Yes - All	18		Yes	1
		Yes - Some	0	27.9%	Yes - Some	0	0.2%	Yes - Some	0	0.6%	Yes - Some	0	0.0%	Yes - Some	0	10.2%	No	31
		Not	19		Not	22		Not	12		Not	31		Not	14			
Turkey	71	Yes - All	48		Yes - All	48		Yes - All	49		Yes - All	39		Yes - All	48		Yes	39
		Yes - Some	0	15.0%	Yes - Some	0	17.8%	Yes - Some	0	11.7%	Yes - Some	0	19.6%	Yes - Some	0	52.2%	No	32
		Not	23		Not	23		Not	22		Not	32		Not	23			
United Kingdom	92	Yes - All	65		Yes - All	65		Yes - All	76		Yes - All	53		Yes - All	70		Yes	55
		Yes - Some	3	96.5%	Yes - Some	3	329.8%	Yes - Some	3	8.1%	Yes - Some	5	347.6%	Yes - Some	2	28.5%	No	37
		Not	24		Not	24		Not	13		Not	34		Not	20			
TO-TAL	1,858	Yes - All	993		Yes - All	990		Yes - All	1,282		Yes - All	850		Yes - All	1,246		Yes	963
		Yes - Some	146	22.4%	Yes - Some	146	44.0%	Yes - Some	80	16.9%	Yes - Some	174	53.5%	Yes - Some	90	40.6%	No	895



	71		72		49		83		52
Not	9	Not	2	Not	6	Not	4	Not	2

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**Note:** Of the total of 1,858, this table shows by country in how many financial statements the financial information (assets, liabilities, equity, revenues and net income) was disclosed for all joint ventures, in how many the financial information was disclosed to only some joint ventures (only for the most material joint ventures, for example) and in how many such information has not been disclosed. For those financial statements in which some financial information was disclosed, this table also presents the percentages that indicate the relevance of the financial information of the joint venture (proportional to the percentage of interest) in relation to the financial information of the investor firm (in module). Finally, using only the financial information disclosed in the notes, the last two columns indicate the number of financial statements (of the total of 1,858) in which we were able to estimate the accounting amounts that would be reported by the investor firm if the proportionate consolidation method was used instead of the equity method.

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