

How financial information about joint ventures is being disclosed and processed by the market

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Resumo

Objective: This research aims to evaluate how the joint ventures' financial information is being disclosed in the notes to the joint venturer's financial statements and how this disclosed information is being processed by the market, exploring the mediating effect of investors' level of sophistication.

Methods: Using a sample of 1,858 financial statements from 551 firms from 26 countries, we hand collected the financial information of interests in joint ventures from the notes to the financial statements. Using a descriptive analysis, we first analyzed how firms are disclosing this information. Following, using a value relevance model, we evaluated whether this information is incorporated into stock prices.

Results: We show that IFRS 11 adoption and the elimination of proportionate consolidation resulted in a loss of information given that firms are not disclosing in the notes the financial information of their joint ventures as required by IFRS 12, and, even for those firms that are disclosing (57%), this information is only absorbed by more sophisticated investors.

Contributions: This research contributes not only to the previous literature (joint ventures' accounting treatment, disclosure compliance and recognition versus disclosure), but also to investors in the capital market and to the IASB during the Post-Implementation Review (PIR) of IFRS 11/12 and the Disclosure Initiative.

Keywords: Joint ventures; IFRS 11/12; Disclosure; Investor sophistication.

1. Introduction

The purpose of this research is to evaluate how the joint ventures' financial information is being disclosed in the notes to the joint venturer's financial statements and how this disclosed information is being processed by the market. Specifically, this research aims first to provide evidence on whether the financial information on joint ventures previously recognized in the joint venturer's financial statements prepared using the proportionate consolidation can now be obtained in the notes to the financial statements, after the adoption of International Financial Reporting Standards (IFRS) 11 and IFRS 12. Following, we evaluate whether this joint ventures' financial information disclosed in the notes is being processed by investors in a value relevance analysis, in which we also analyze the mediating effect of the investor's level of sophistication in incorporating financial information disclosed in the notes into stock prices.

A joint venture is defined as a joint arrangement in which the parties that have the joint control of the arrangement (joint venturers) have rights to the net assets of the arrangements (IASB, 2011b). Before the adoption of IFRS 11 in 2013 (or 2014 in European Union countries), the previous international accounting standard (International Accounting Standard (IAS) 31) allowed the joint venturer to choose between the proportionate consolidation method and the equity method to measure its interests in joint ventures. After the adoption of IFRS 11, only the equity method is allowed.

The process of issuing IFRS 11 was quite controversial (Sarquis & Santos, 2019), given that there was a divergence of opinions about which of these two methods (proportionate consolidation or equity method) would be more appropriate for recognizing interests in joint ventures. The academic literature, for instance, provided evidence that the accounting information obtained by using the proportionate consolidation was more value relevant to users than the accounting information obtained by using the equity method (Bauman, 2007; Gavana, Gottardo, & Moisello, 2020; Graham, King, & Morrill, 2003; Stoltzfus & Epps, 2005).

Nevertheless, the International Accounting Standards Board (IASB) argued that the existence of this accounting choice was impairing the comparability of accounting information and that the proportionate consolidation method was inconsistent with the definition of assets and liabilities of the Framework (IASB, 2011a). Consequently, the IASB issued the IFRS 11 – Joint Arrangements, requiring that all interests in joint ventures should be accounted for using the equity method. The consequence is that the financial information of joint ventures is no longer being recognized, line by line, in the joint venturers' financial statements. This can encourage firms to use interests in joint ventures to keep off-balance-sheet liabilities and, therefore, it may provide a distorted view of the financial and economic performance of the joint venturers.

In addition to IFRS 11, the IASB also issued the IFRS 12 – Disclosure of Interests in Other Entities in order to consolidate and improve the disclosure requirements of interests in controlled entities, associated investments, joint arrangements, and unconsolidated entities. Therefore, in the Basis for Conclusion on IFRS 11, the IASB explains that the elimination of the proportionate consolidation should not result in information loss for users of accounting information because the IFRS 12 improved the disclosure requirements regarding interests in joint ventures. Consequently, joint ventures' financial information that could be previously obtained in the joint venturer's financial statements prepared using proportionate consolidation can now be obtained in the notes to the financial statements (IASB, 2011a, BC45).

However, the previous literature argues that firms do not always comply with disclosure requirements (Che, Azmi, & English, 2016; Glaum, Schmidt, Street, & Vogel, 2013; Izzo, Luciani, & Sartori, 2013; Lucas & Lourenço, 2014; Mazzi, André, Dionysiou, & Tsalavoutas, 2017; Sarquis, Santos, Lourenço, & Braunbeck, 2021; Tsalavoutas, Tsoligkas, & Evans, 2020). A second issue is that, even for firms that comply with the disclosure requirements of IFRS Standards, the previous literature provides evidence that investors do not evaluate in the same way information that was recognized in the financial statements and information that was only disclosed in the notes. Specifically, investors assign a discount to information that is disclosed in the notes compared to information that is recognized in the financial statements (Ahmed, Kilic, & Lobo, 2006; Michels, 2017; Müller, Riedl, & Sellhorn, 2015; Schipper, 2007; Yu, 2013). The information disclosed in the notes is perceived by investors as less reliable than the information recognized in the financial statements (Ahmed et al., 2006; Müller et al., 2015; Schipper, 2007; Yu, 2013) and the investors face higher costs to process a disclosed information in comparison to a recognized information (Müller et al., 2015; Schipper, 2007; Yu, 2013). Based on these arguments, there is a tension in the literature about whether the elimination of proportionate consolidation did not result in informational loss for users, as argued by the IASB. Despite the increase in the disclosure requirements of IFRS 12, firms may not be complying with these requirements and, even if they are, investors may not be absorbing this information disclosed in the notes.

This research aims to empirically explore this tension in the literature by assessing (i) whether firms are disclosing in the notes the financial information (assets, liabilities, revenues, and expenses) of joint ventures that could be previously obtained in the financial statements prepared using proportionate consolidation, (ii) whether this disclosed information is being processed by the market in a value relevance context, and (iii) whether it depends on the investor's level of sophistication.

To achieve these purposes, our sample is composed by those firms that were most affected by the adoption of IFRS 11, that is, those that had to change from proportionate consolidation to the equity method when adopting IFRS 11. The period of analysis starts in the year each firm adopted IFRS 11 and IFRS 12 (2013 or 2014, depending on the country) and ends in 2016. Therefore, our sample is composed by 551 firms from 26 countries and 1,858 financial statements that were hand collected and analyzed. We built a unique and quite comprehensive database composed by financial information of interests in joint ventures, hand collected from the notes to the financial statements.

After the data collection and using descriptive statistics, we found that firms are not complying with the disclosure requirements of IFRS 12, given that only 316 firms (of the total of 551 – 57%) are disclosing in the notes the same financial information of joint ventures (assets, liabilities, revenues, and expenses) that could be previously obtained in the financial statements prepared by proportionate consolidation. This finding is aligned with the previous literature that argues that firms do not always comply with disclosure requirements (Glaum et al., 2013; Mazzi et al., 2017; Sarquis et al., 2021; Tsalavoutas et al., 2020) and indicates that information was lost when adopting IFRS 11 and the improvement in disclosure requirements of IFRS 12 are not compensating the information loss caused by the elimination of proportionate consolidation.

Next, using only these 316 firms that disclosed in the notes the financial information of their interests in joint ventures, we found that joint ventures' financial information disclosed in the notes are value relevant and are absorbed by the market, being able to explain the joint venturer's stock prices. However, this value relevance depends on the investor's level of sophistication, given that the joint ventures' financial information disclosed in the notes is absorbed only by more sophisticated investors (measured by the proportion of institutional ownership). It means that less sophisticated investors are not able to process the joint ventures' financial information disclosed in the notes.

These results are supported by the previous literature that argues that disclosure and recognition are not substitutes (Ahmed et al., 2006; Müller et al., 2015; Schipper, 2007; Yu, 2013) and indicate that there was a loss of information with the adoption of IFRS 11 and the elimination of proportionate consolidation, given that firms are not disclosing in the notes the financial information of joint ventures, as required by IFRS 12, and even for those firms that are disclosing (57% of our total sample), this disclosed information is only absorbed and processed by sophisticated investors.

This research has important contributions to the academic literature, to investors in the capital market, as well as to accounting regulatory bodies. First, this research is expected to contribute to the literature on the accounting treatment of interests in joint ventures (Bauman, 2007; Gavana et al., 2020; Graham et al., 2003; Lourenço, Fernandes, & Curto, 2012; Richardson, Roubi, & Soonawalla, 2012; Sarquis, Santos, Lourenço, & Braunbeck, 2020; Stoltzfus & Epps, 2005), by providing evidence that the recent change in the accounting treatment (from proportionate consolidation to the equity method) may have resulted in an information loss, especially for less sophisticated investors. It is also expected to contribute to the literature that aims to explore the firm's level of compliance with disclosure requirements (Che Azmi & English, 2016; Glaum et al., 2013; Izzo et al., 2013; Lucas & Lourenço, 2014; Mazzi et al., 2017; Sarquis et al., 2021; Tsalavoutas et al., 2020) and also with the literature that discusses the differences between recognizing an item in the financial statements or only disclosing it in the notes to the financial statements (Ahmed et al., 2006; Michels, 2017; Müller et al., 2015; Schipper, 2007; Yu, 2013).

Second, our findings are also important to investors in the capital market, especially less sophisticated investors, as they provide evidence that such investors are not properly absorbing and processing the financial information of joint ventures, which were previously recognized in the financial statements and are now only being disclosed in the notes. This informational loss can affect the investment decisions of these investors and, consequently, the efficiency in the allocation of resources.

Third, our findings also provide relevant insights to the accounting standards setters, by providing evidence that the adoption of IFRS 11 and IFRS 12 may not have had the effect that was expected by the IASB. Therefore, this research may contribute not only to the Post-Implementation Review (PIR) of IFRS 11 and IFRS 12 currently in progress, but also to the Disclosure Initiative project of the IASB.

2. Literature review

The literature that supports the development of this research is segregated into two sections. The first section (2.1) describes the adoption of IFRS 11 and 12 and the changes in the accounting treatment of interests in joint ventures, as well as the main studies related to this topic. The second section (2.2) explains the theories that support this research and also presents the development of the hypotheses.

2.1 Interests in Joint Ventures and the adoption of IFRS 11 and IFRS 12

In 2013 the IASB issued a package of three accounting standards, which came into force in 2013 (or 2014 in European Union countries): IFRS 10 – Consolidated Financial Statements, IFRS 11 – Joint Arrangements, and IFRS 12 – Disclosure of Interests in Other Entities. While IFRS 10 is about interests in controlled entities, IFRS 11 is about interests in entities with joint control, which can be classified in joint operations or joint ventures, and IFRS 12 consolidates the disclosure requirements of interests in all other entities (controlled entities, joint arrangements, associated investments, and unconsolidated entities).

Before the adoption of IFRS 11, under the previous international accounting standard (IAS 31), firms should choose to account for their interests in joint arrangements classified as joint ventures by either the equity method or the proportionate consolidation method. While in the equity method the joint venturer should recognize its interest in the net assets (net income) of the joint venture in a single line of the balance sheet (income statement), in the proportionate consolidation the joint venturer should recognize in its own financial statements its percentage of interests in each of the joint ventures' assets, liabilities, revenues, and expenses. Although the joint venturer's net income and equity are usually the same in both methods, the joint venturer's total assets, liabilities, revenues, and expenses are lower under the equity method than under the proportionate consolidation method (Lourenço et al., 2012; Richardson et al., 2012; Sarquis & Santos, 2018).

However, academics and accounting regulatory bodies (mainly the Financial Accounting Standards Board (FASB) and the IASB) have divergent opinions about which of these two methods would be more appropriate for accounting interests in joint ventures. There are arguments in favor and against both methods. Namely, while the proportionate consolidation method may be inconsistent with the definitions of assets and liabilities of the Framework, given that it may allow the recognition of assets (liabilities) that are not fully controlled by (present obligations of) the joint venturer, the equity method can provide a distorted view about the financial and economic performance of the joint venturer, by allowing them to use interests in joint ventures to keep off-balance-sheet liabilities (Graham et al., 2003; Richardson et al., 2012; Sarquis et al., 2020).

Consequently, the process of issuing IFRS 11 was quite controversial. Of the total of 111 comment letters received by the IASB during the public consultation period of the Exposure Draft (ED) 09 – Joint Arrangements, 68 (i.e., 61%) clearly stated disagreement with the elimination of proportionate consolidation, arguing that this method provides more relevant accounting information than the equity method (Sarquis & Santos, 2019). Notwithstanding, the IASB issued IFRS 11 in 2011, eliminating the option of using proportionate consolidation and requiring that all interests in joint ventures should be accounted for by the equity method. The IASB argued that the existence of this accounting choice was impairing the comparability of accounting information across firms (IASB, 2011a, BC8).

For those firms that previously used proportionate consolidation, the adoption of IFRS 11 had a significant impact on their financial statements and financial ratios, given that the change from proportionate consolidation to the equity method led to material reductions in the joint venturer's assets, liabilities, revenues, and expenses (Richardson et al., 2012; Sarquis & Santos, 2018). In addition, the academic literature does not provide support to the IASB's decision to eliminate proportionate consolidation. There is evidence that the joint venturer's share of joint ventures' assets and liabilities are considered by investors as being similar to the assets and liabilities of the joint venturer (Lourenço et al., 2012) and, therefore, the joint venturer's financial statements prepared using the proportionate consolidation method should have incremental information content over those using the equity method (Bauman, 2007; Graham et al., 2003; Stoltzfus & Epps, 2005). In this context, Gavana et al. (2020) provide evidence that the value relevance of joint venturer's assets and liabilities decreased after the adoption of IFRS 11, since the financial information of the joint ventures is no longer being recognized in the joint venturer's financial statements.

In addition to IFRS 11, the IASB also issued IFRS 12, which improves the quality of the disclosure about interests in other entities, including interests in joint ventures. Therefore, in the Basis for Conclusions on IFRS 11, the IASB argues that the elimination of proportionate consolidation would not cause information loss for the users of financial statements, given that IFRS 12 improved the quality of the disclosure about interests in joint ventures and that all the information that could be previously obtained in the financial statements prepared using proportionate consolidation can now be obtained in the notes to the financial statements (IASB, 2011a, BC45). Additionally to information that enables users to assess the nature, extension, and the risks associated with their interests in joint ventures, IFRS 12 also requires the joint venturer to disclose in the Notes to the financial statements a summary of the joint ventures' financial information (such as, for example, assets, liabilities, revenues, expenses, and net income). This financial information should be disclosed individualized for each material joint ventures and aggregated for joint ventures that are individually immaterial.

Therefore, this is an interesting setting to evaluate how information that was previously recognized in financial statements and that is now only disclosed in the notes to the financial statements is being absorbed by the market.

2.2 Theoretical Background and hypotheses development

Based on the Theory of the Firm, proposed by Coase (1937), the firm should be understood as a set of contracts between different agents. These agents, which include not only managers and investors, but also auditors, government, employees, suppliers, customers, among others, establish contracts with the firm in which they contribute with some input (capital, products, services, labor, etc.) in exchange for some return on the contribution offered to the firm (Watts & Zimmerman, 1986, Sunder 1997).

Given that these agents are rational and each one aims to maximize their own utility, these contracts will only be efficient if there are some control mechanisms which allow to identify when any of the agents is not complying with the contract. It is in this context that accounting plays an important role as a control mechanism for these contracts and, consequently, accounting numbers are frequently used in contracts established between agents who transact with the firm (Christie & Zimmerman, 1994; Holthausen, 1990; Sunder, 1997; Watts, 1992; Watts & Zimmerman, 1986).

As a consequence of this important role that accounting plays in establishing and monitoring these contracts, accounting practices have economic consequences. Therefore, managers have economic incentives to choose certain accounting practices (Christie & Zimmerman, 1994; Fields, Lys, & Vincent, 2001; Holthausen, 1990). In this context, the Positive Accounting Theory is intended to explain variations in accounting practices between firms and how managers choose between different accounting practices (Watts & Zimmerman, 1986, Collins, Tagesson, Andersson, Cato, & Hansson, 2009; Scott, 2015).

There are two perspectives of the Positive Accounting Theory: (i) contractual efficiency and (ii) opportunistic behavior. The contractual efficiency perspective argues that managers perceive that their utility also depends on the survival of the firm and, therefore, the accounting practices are chosen with the purpose of reducing the agency cost among the various agents of the firm and, consequently, maximizing the firm's value (Watts & Zimmerman, 1986; Holthausen, 1990; Scott, 2015). The opportunistic behavior perspective, on the other side, argues that managers are rational and, therefore, will choose accounting practices that maximize only their own utility, even if this choice reduces the firm's value and its chance of survival (Christie & Zimmerman, 1994; Scott, 2015; Watts & Zimmerman, 1986).

In this contractual relationship between various agents that interact with the firm, it is expected that some agents have more information than others, giving rise to the problem of information asymmetry. Specifically, agents that are inside the firm have more information than the agents that are outside the firm. In the agency relationship, the investor (principal) is outside the firm and, therefore, has less information than the manager (agent). Consequently, the information asymmetry between the principal and the agent hinders the principal to fully supervise the agent's actions. The consequence of the information asymmetry is that some parties may take advantage through privileged information, causing problems in the market, such as moral hazard and adverse selection (Jensen & Meckling, 1976; Eisenhardt, 1989; Scott, 2015).

The Efficient Market Hypothesis (EMH) argues that prices are a result of all available information (Malkiel & Fama, 1970) and, therefore, the existence of information asymmetry violates one of the main assumptions of the Efficient Market Hypothesis (EMH). One of the mechanisms to reduce the information asymmetry is the increase of financial reporting quality and disclosure. Healy and Palepu (2001) mention that the increased in corporate disclosure, not only in quantity but also in quality, is crucial for the functioning of an efficient capital market.

Verrecchia (2001) is one of the precursors of the Theory of Disclosure. The author argues that information asymmetry should be used as a vehicle to integrate the efficiency of disclosure choice, the incentives to disclosure, and the endogeneity of the capital market, being the starting point for a comprehensive Theory of Disclosure. Verrecchia (2001) also proposed a taxonomy of the accounting literature on disclosure, classifying it into three categories: (i) association-based disclosure; (ii) discretionary-based disclosure; and (iii) efficiency-based disclosure.

Considering the importance of corporate disclosure for the functioning of the capital market, this issue is also one of the main concerns of the IASB. There is a project currently being developed by the IASB, called *Disclosure Initiative* project, with the objective of proposing a new approach to developing and drafting disclosure requirements in IFRS Accounting Standards.

In this context, there are several studies analyzing not only the level of compliance with the disclosure requirements of IFRS Accounting Standards, but also the behavior of the manager regarding disclosure and the reasons some firms disclose more information than others (e.g. Baloria, Klassen, & Wiedman, 2019; Bamber, Jiang, & Wang, 2010; Bepari, Rahman, & Mollik, 2014; Carlin & Finch, 2010; Che Azmi & English, 2016; Glaum, Schmidt, Street, & Vogel; 2013; Haddad, Shibly, & Haddad, 2020; Izzo, Valerio, & Elisa, 2013; Lazar & Velte, 2018; Lucas & Lourenço, 2014; Mazzi, André, Dionysiou & Tsalavoutas, 2017; Mazzi, Slack, & Tsalavoutas, 2018; Wang, 2019).

This literature provides strong evidence that firms do not always comply with IFRS mandatory disclosure requirements and that the level of compliance varies significantly across firms (Che Azmi & English, 2016; Glaum et al., 2013; Izzo et al., 2013; Lucas & Lourenço, 2014; Mazzi et al., 2017; Sarquis et al., 2021; Tsalavoutas et al., 2020). The first objective of this research, which is to evaluate how the joint ventures' financial information is being disclosed in the notes to the joint venturer's financial statements should give inputs to argue that the increase in disclosure requirements of IFRS 12 are not compensating the information loss caused by the elimination of proportionate consolidation, given that firms may not be complying with it. Therefore, the first hypothesis of this research is that:

H₁: Firms are not disclosing in the notes the same financial information of joint ventures (assets, liabilities, revenues, and expenses) that could be previously obtained in the financial statements prepared by proportionate consolidation.

This first hypothesis is important to allow us to identify whether firms are complying with the disclosure requirements of IFRS 12 and disclosing in the notes the financial information of their interests in joint ventures. Using only firms that are complying with the disclosure requirements, it is possible to evaluate how the disclosed information is being processed by the market (second objective of this research). Based on the Efficient Market Hypothesis (EMH), we expect that the joint ventures' financial information disclosed in the notes are absorbed by (and value relevant to) the market. Therefore, the second hypothesis of this research is that:

H₂: The joint ventures' financial information disclosed in the notes to the joint venturers' financial statements are value relevant for financial market players.

The importance of improving disclosure is unquestionable. However, it is important to note the paragraph 18 of the IAS 01, which clearly states that firms cannot rectify inappropriate accounting policies by increasing the disclosure requirements (IASB, 2007). And this might be the case of the accounting treatment and disclosure of interests in joint ventures. If the proportional consolidation method provided more relevant accounting information to users than the equity method (Bauman, 2003, 2007; Graham et al., 2003; Richardson et al., 2012; Soonawalla, 2006; Stoltzfus & Epps, 2005), compensating for its elimination with the increase in IFRS 12 disclosure requirements on interests in joint ventures does not align with paragraph 18 of the IAS 01.

Given that the financial information of interests in joint ventures was previously recognized in the financial statements and now, after the adoption of IFRS 11 and IFRS 12, is only disclosed in the notes to the financial statements, it is also important to explain that recognition and disclosure are not substitutes. In efficient markets, the information recognized in the financial statements should be priced in exactly the same way as the information disclosed in the notes to the financial statements. Given that the information is publicly available, it should be processed by investors in the same way, regardless of the presentation format (in the financial statements or in the notes to the financial statements) (Ahmed et al., 2006; Schipper, 2007; Yu, 2013).

However, the literature suggests that recognition is different from disclosure in terms of value relevance and that investors assign a discount to information that is disclosed in the notes compared to information that is recognized in the financial statements (Ahmed et al., 2006; Michels, 2017; Müller et al., 2015; Schipper, 2007; Yu, 2013). Ahmed et al. (2006), for example, provide evidence that information on fair values of derivatives is more value relevant to investors when it is recognized in the financial statements than when it is disclosed in the notes. Similarly, Müller et al. (2015) show that the association between equity prices and investment properties' fair values is higher when the fair value is recognized in the financial statements than when it is disclosed in the notes. Yu (2013) also provide evidence that disclosed pension liabilities (instead of recognized) are value relevant only for firms with a higher level of institutional ownership or analyst following.

There are at least two possible explanations for why investors and other users of accounting information process disclosed and recognized information differently. The first one is that the information recognized in the financial statements is seen as more reliable than the information disclosed in the notes (Ahmed et al., 2006; Müller et al., 2015; Schipper, 2007; Yu, 2013). Disclosed information is perceived by the market as less reliable than recognized information because managers can be less careful in preparing disclosed items (Schipper, 2007; Yu, 2013) and auditors are also more likely to allow for more misstatements in disclosed items (Libby, Nelson, & Hunton, 2006). In addition, recognized information tends to be more precise and accurate than disclosed information, given that the information needs to be reliably measured to be recognized in the financial statements (Michels, 2017).

The second explanation is related to information processing factors, since users face higher costs to process a disclosed information in comparison to a recognized information (Müller et al., 2015; Schipper, 2007; Yu, 2013). In addition, Müller et al. (2015) explain that this information processing cost depends on several factors, such as firms' institutional environment, disclosure quality, and investors' competence, cognition, and attention.

Based on this previous literature that suggests that information processing costs depend on the firm's information environment and on the market's ability to process the information disclosed, we expect that the joint ventures' financial information disclosed in the notes to the joint venturer's financial statements is better absorbed by sophisticated investors. Consequently, the third hypothesis aims to explore the mediating effect of the investor's level of sophistication on the value relevance of joint ventures' financial information disclosed in the notes:

H₃: More sophisticated investors perceive the financial information of joint ventures disclosed in the notes of the joint venturer's financial statements better than less sophisticated investors.

3. Data and methods

This section presents information on our data collection procedures and describes our sample (section 3.1), followed by the empirical methods we use (section 3.2).

3.1 Sample and data collection

Our sample is composed by firms with interests in joint ventures that used proportionate consolidation before the adoption of IFRS 11. After the adoption, these firms had to change to the equity method and the financial information of joint ventures that were previously recognized in their financial statements are now only disclosed in the notes. Of all countries available in the Worldscope that have adopted IFRS Standards prior to 2012 (one year before the adoption of IFRS 11 and IFRS 12), we maintained only those countries in which the financial statements are disclosed in a written language derived from the Latin Alphabet (26 countries).

Next, of all publicly listed firms in these 26 countries, we identified 5,618 firms that had an investment account in their 2016 consolidated financial statements, using the Worldscope database. In order to identify how many of these 5,618 firms had interests in joint ventures, we hand collected and analyzed the 2016 financial statements of each firm and found 2,059 (37%) with interests in joint ventures. Finally, we identified the year in which each of these 2,059 firms adopted IFRS 11 and IFRS 12, what accounting practice was used and how the transition was. Based on this analysis, we found 551 firms with interests in joint ventures that were affected by the adoption of IFRS 11, given that they had to change from proportionate consolidation to the equity method.

The period of analysis starts in the year each firm adopted IFRS 11 and IFRS 12 (2013 or 2014, depending on the country) and ends in 2016. Therefore, our sample is composed by 551 firms from 26 countries and 1,858 financial statements that were hand collected and analyzed, as shown in Table 1.

Table 1
Sample distribution

Countries	Firms	Financial Statements	Countries	Firms	Financial Statements
Australia	5	16	Mexico	16	63
Belgium	12	42	Netherlands	18	63
Brazil	70	272	New Zealand	3	9
Canada	41	154	Norway	19	63
Chile	11	41	Philippines	7	28
Denmark	11	34	Poland	13	38
Finland	11	37	South Africa	26	84
France	76	244	Spain	30	98
Germany	33	108	Sri Lanka	19	40
Hong Kong	24	84	Sweden	10	32
Ireland	3	7	Turkey	18	71
Italy	32	103	United Kingdom	33	92
Kuwait	1	4			
Malaysia	9	31	Total	551	1,858

To test our first hypotheses, we need to assess whether these 551 firms (1,858 financial statements) are disclosing in the notes, after the adoption of IFRS 11 and IFRS 12, the same financial information of joint ventures that were previously recognized in the financial statements under the proportionate consolidation. In other words, we evaluate whether the joint ventures' financial information being disclosed in the notes allows the investors to recompose the financial statements prepared by using the proportionate consolidation.

Therefore, to achieve the first objective of this research and to test the first hypothesis, we hand collected and analyzed each of these 1,858 financial statements (551 firms) in order to evaluate the financial information of the joint ventures that is being disclosed in the notes and, specifically, whether the assets, liabilities, revenues, and expenses of the joint ventures are being disclosed. Specifically, we seek to identify which firms disclosed all this financial information (assets, liabilities, revenues, and expenses) to at least one of their joint ventures.

3.2 Value Relevance analyses

With the issuance of IFRS 11 and IFRS 12, all firms had to move from the joint ventures' accounting proportional consolidation method to the equity method. Therefore, after IFRS 11 and IFRS 12, we have joint ventures' accounting values presented only in the joint venturers' notes to the financial statements.

To test our second hypothesis, we analyze whether joint ventures' information, which only appears in the notes to the financial statements, are incorporated into stock prices, that is, whether joint ventures' information is value relevant. To do so, we rely on the value relevance model from Feltham and Ohlson (1995) who derive a valuation model in which stock prices are determined by net income and book value per share. We follow the same approach, but with a few modifications. First, we disaggregate net income into revenues and expenses and book value into assets and liabilities, as in Sarquis et al (2020), given that the net income and the book value of the equity are generally the same in both the equity method and the proportionate consolidation, but the total assets, liabilities, revenues, and expenses are higher under proportionate consolidation than under the equity method. Second, as explained in section 2.1, under the equity model of joint venture accounting (our sample), joint venturers' assets, liabilities, revenues, and expenses do not include the joint ventures' values, they are only present in the Notes to the Financial Statements, not in the Balance Sheet and Income Statement. Therefore, we add in the model the joint venturer's own stock prices as the dependent variable and its assets, liabilities, revenues, and expenses as explanatory variables (collected from their Balance Sheet and Income Statement), in addition to the data on their joint ventures, collected from the joint venturers' Notes to the Financial Statements. Besides, to better comply with the error term normality assumption of regression analysis, we apply the natural logarithm to stock price values.

If the joint ventures' values are important to firms' valuation, then adding them to the value relevance model should mean adding valuable information, so they should be significant. Therefore, we test their significance along with the joint venturers' using Equation (1), where the dependent variable is log stock prices:

$$p_{it} = \beta_0 + \beta_1 Assets_{it} + \beta_2 Liabilities_{it} + \beta_3 Revenues_{it} + \beta_4 Expenses_{it} + \beta_5 JVAssets_{it} + \beta_6 JVLiabilities_{it} + \beta_7 JVRevenues_{it} + \beta_8 JVExpenses_{it} + \epsilon_{it}. \quad (1)$$

In Equation (1), the variables *Assets*, *Liabilities*, *Revenues* and *Expenses* are the values taken from the joint venturers' balance sheet and income statement, while the variables *JVAssets*, *JVLiabilities*, *JVRevenues* and *JVExpenses* are the values of their interests in joint ventures, collected from the joint venturers' Notes to the Financial Statements. All values are in the local currency and are scaled by the number of outstanding shares of the joint venturer' firms.

Further, we evaluate whether joint ventures' value relevance varies according to investors' levels of sophistication, measured by the percentage of institutional ownership for each firm at each year. We hypothesize that institutional ownership, which work as a proxy to the firms' information environment quality since it measures investors' sophistication, is related to the market's ability to process accounting information only available in the notes. We expect more sophisticated investors to be better able to process information from the notes to the financial statements.

To test this, we partition our sample between observations with higher levels of institutional ownership (above median values) and with lower levels of institutional ownership (below median values), and reestimate Equation (1) to analyze whether the two samples generate different results or not.

We account for firms' fixed effects in all estimations applying a first-difference transformation in the variables. Fixed effects can be controlled by either the first-difference or the within transformation, but taking first-differences works better when the original residuals are autocorrelated. We used Wooldridge (2010)' test for serial correlation in panel data and the test indicated taking first-differences works better in our model. This is expected, since our dependent variable is the logarithm of stock prices, which usually suffer from unit roots.

4. Results

This section presents and discuss the results. Section 4.1 presents the descriptive analyses to test Hypothesis 1, that is, that firms are not disclosing in the notes the same financial information of joint ventures that could be previously obtained in the financial statements prepared by proportionate consolidation. Section 4.2, on its turn, presents the value relevance analyses to test Hypotheses 2 and 3, which propose that the joint ventures' financial information disclosed in the notes to the joint venturer's financial statements are value relevant for financial market players (H2), but only for more sophisticated investors (H3).

4.1 Descriptive analyses

From the total of 551 firms (1,858 financial statements), we identified only 316 firms – 57% (959 financial statements – 52%) that disclosed in the notes the same financial information of joint ventures that were previously recognized in the financial statements (i.e., assets, liabilities, revenues, and expenses). Table 2 presents the number of financial statements in which the financial information of joint ventures was disclosed (“disclosing” column) in relation to the total sample (“sample” column), segregating by country and industry. In addition, Figure 1 also shows the distribution of the 316 firms (959 financial statements) by countries, industries and years (2013–2016).

Table 2

Number of financial statements disclosing the joint ventures' financial information in relation to the total sample

Countries	Mining and Construction		Manufacturing		Utilities		Wholesale and Retail Trade		Finance, Insurance		Services		Other		Total		
	Sample	Disclosing	Sample	Disclosing	Sample	Disclosing	Sample	Disclosing	Sample	Disclosing	Sample	Disclosing	Sample	Disclosing	Sample	Disclosing	
Australia	7	5	3	0	3	1	0	0	0	0	0	3	0	0	0	16	6
Belgium	4	0	15	11	13	9	0	0	7	3	0	0	0	3	3	42	26
Brazil	12	0	64	29	95	66	13	13	76	25	4	4	8	4	272	141	
Canada	48	20	44	24	26	12	6	0	24	22	4	1	2	0	154	79	
Chile	6	2	4	4	8	0	0	0	19	12	4	4	0	0	41	22	
Denmark	11	6	10	4	11	4	0	0	2	2	0	0	0	0	34	16	
Finland	8	5	23	11	0	0	3	0	0	0	3	3	0	0	37	19	
France	25	11	80	20	38	17	25	7	44	19	29	4	3	2	244	80	
Germany	4	4	41	20	30	6	7	7	8	8	16	16	2	2	108	63	
Hong Kong	4	4	18	16	14	2	16	13	14	8	14	14	4	0	84	57	
Ireland	0	0	5	0	0	0	0	0	0	0	0	0	2	0	7	0	
Italy	16	6	28	16	40	21	6	3	10	8	3	3	0	0	103	57	
Kuwait	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	
Malaysia	4	4	7	3	7	7	6	6	7	1	0	0	0	0	31	21	
Mexico	8	4	19	8	16	12	0	0	12	2	0	0	8	4	63	30	
Netherlands	13	7	21	3	3	0	0	0	8	7	15	3	3	0	63	20	
New Zealand	0	0	0	0	3	3	0	0	3	3	3	2	0	0	9	8	
Norway	18	17	22	14	13	6	0	0	6	3	0	0	4	4	63	44	
Philippines	0	0	4	4	12	9	0	0	4	0	0	0	8	8	28	21	
Poland	8	2	7	7	0	0	0	0	13	5	10	5	0	0	38	19	
South Africa	27	16	27	25	7	4	5	0	5	5	6	0	7	4	84	54	
Spain	23	14	17	5	26	18	3	3	19	9	10	7	0	0	98	56	
Sri Lanka	0	0	8	8	8	2	4	2	7	5	7	4	6	4	40	25	
Sweden	3	0	9	0	10	0	0	0	4	1	6	0	0	0	32	1	
Turkey	4	0	32	20	16	12	0	0	12	0	0	0	7	7	71	39	
United Kingdom	19	14	12	7	13	6	2	2	25	19	21	7	0	0	92	55	
Total	272	141	520	259	412	217	96	56	329	167	162	77	67	42	1,858	959	

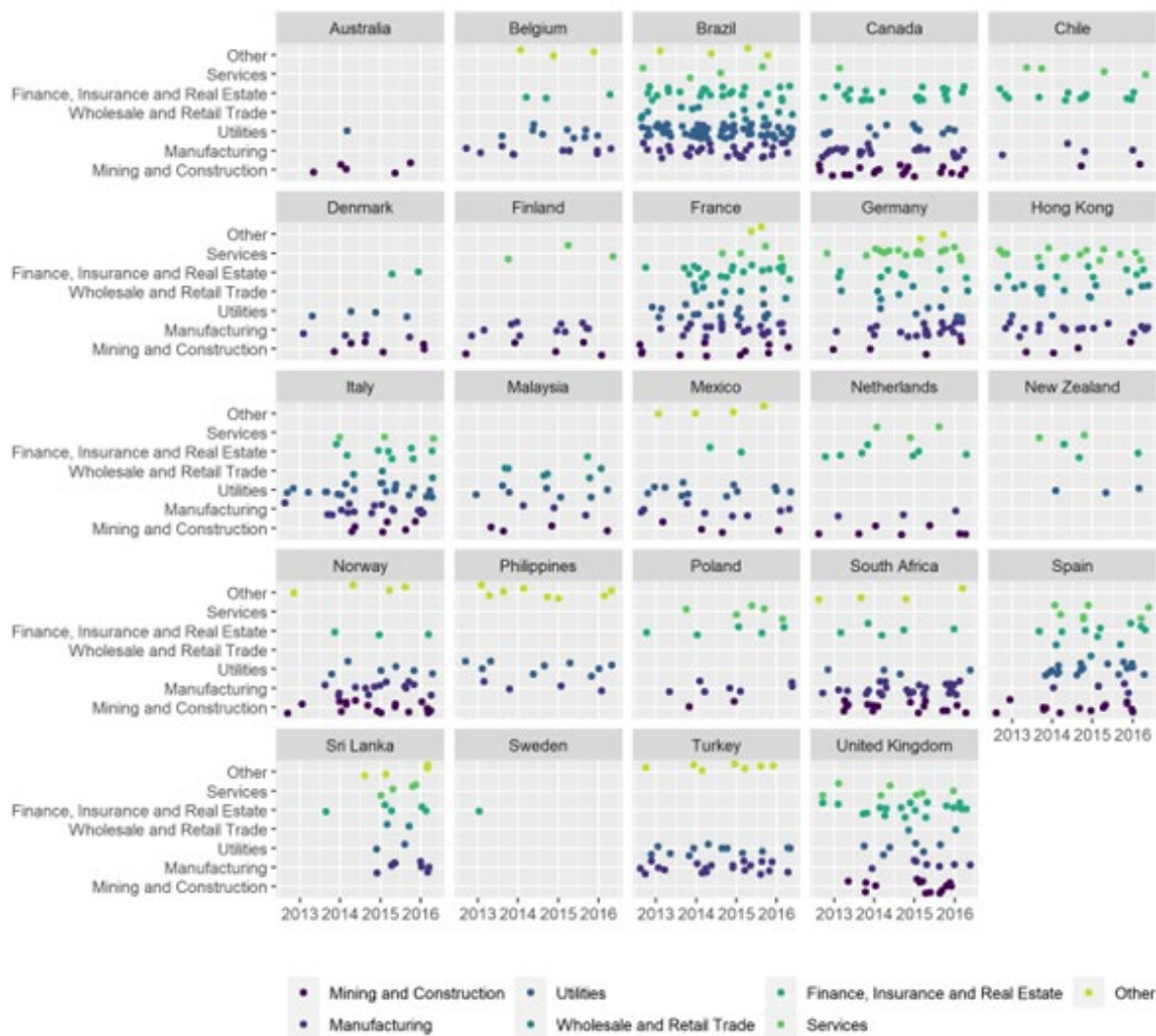


Figure 1. Distribution of firms that disclose the joint ventures' financial information in the notes – 316 firms and 959 financial statements

In general, we found that firms are not disclosing in the notes the same financial information of joint ventures that previously recognized in the financial statements, but that this varies widely among countries. Specifically, the countries with the highest percentages of disclosure are New Zealand (89%), the Philippines (75%), Hong Kong (68%), Malaysia (68%), and Norway (70%). On the other side, the countries with the lowest percentages are Ireland (0%), Kuwait (0%), Sweden (3%), Netherlands (32%), and France (33%).

Among industries, these differences are not that significant, given that the percentage of disclosure ranges from 48% (Services) to 58% (Wholesale and Retail Trade). Figure 1 also indicates that this percentage of disclosure has not improved over time (from 2013 to 2016), as the plots indicate a horizontal rather than increasing behavior¹.

¹ For a more detailed analysis of the level of compliance with the IFRS 12 disclosure requirements, see Sarquis et al. (2021).

In summary, these descriptive analyses allow us to confirm our first hypothesis, that is, firms are not disclosing in the notes the same financial information of joint ventures (assets, liabilities, revenues, and expenses) that could be previously obtained in the financial statements prepared by proportionate consolidation. This finding is aligned with the previous literature, which provides evidence that firms do not always comply with disclosure requirements (Che Azmi & English, 2016; Glaum et al., 2013; Izzo et al., 2013; Lucas & Lourenço, 2014; Mazzi et al., 2017; Sarquis et al., 2021; Tsalavoutas et al., 2020). In addition, this finding gives rise to the concern that information was lost when moving from the proportional consolidation method to the equity method for accounting for interests in joint ventures.

We compute accounting values (assets, liabilities, revenues, expenses) for joint venturers' and for all (disclosed) joint ventures investments. Considering median values, joint

ventures' assets amount to 4.9% of the joint venturers' assets, 4.6% of liabilities, 4.1% of revenues, and 3.5% of expenses. Therefore, in general, the joint ventures values are relatively low compared to the joint venturers' accounting values. However, there is considerable variation. For instance, 9.6% (9.9%) of the observations have joint ventures' liabilities (revenues) representing more than 50% of the investor firm's liabilities (revenues). Further, revenues is the figure with higher joint ventures values, 6.5% of the sample have joint ventures' revenues higher than the investor's. Figure 2 shows this distribution by country and by industry. Since the variation is very high, Figure 2 presents 5% winsorized data.

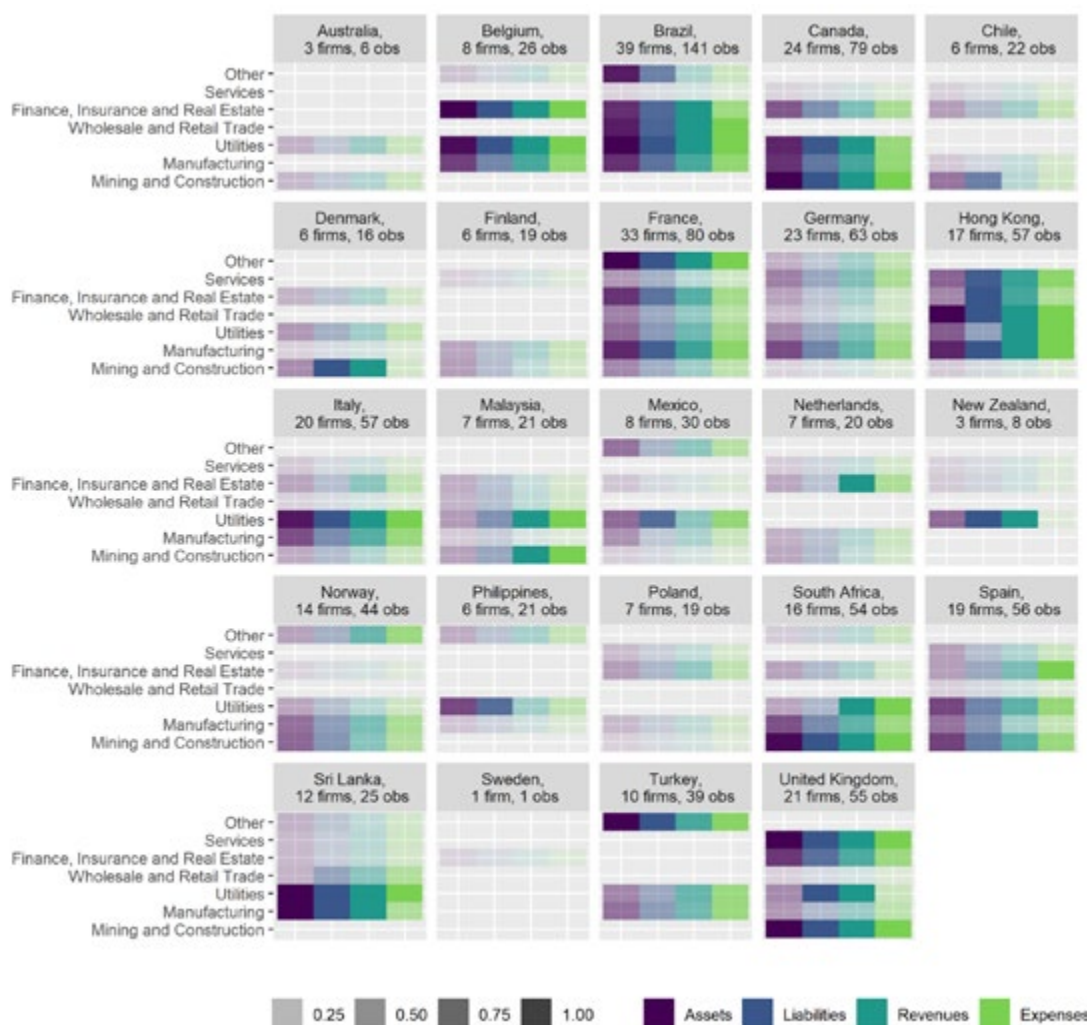


Figure 2. Joint ventures' value relative to joint venturers

From Figure 2 one can see that in Brazil, the country with the highest number of observations (131), Utilities firms have the higher joint ventures values relative to the joint venturers. In France, the second country in number of observations (77), joint ventures in the Finance, Insurance, and Real State and in the Mining and Construction industries are the largest ones. These are the two industries where joint ventures are the largest for most of the countries.

Therefore, firms that invest in joint ventures mainly use them to obtain revenues. TVI Pacific Inc., a mining and construction firm from Canada has no revenue from its own during the sample period, only from its joint ventures. The same happens to China Ever Grand Financial Leasing in 2015, from Hong Kong. Considering the difference between assets and liabilities, more than three thirds of the sample's joint ventures present negative equity and negative net income (considering the total sum of joint ventures for each investor firm). Therefore, in general, joint ventures present unhealthy accounting numbers.

We also simulate the joint venturers' proportional consolidated financial statements to evaluate the differences in firms' assets, liabilities, revenues, and expenses. Table 3 shows the original (equity method) and proportionally consolidated values for joint venturers' assets, liabilities, revenues, and expenses per share, alongside with a mean test between each accounting figure. Since the data varies a lot across firms, Table 3 shows 5% winsorized values, indicating statistically significant differences between proportionally consolidated and unconsolidated revenues and expenses. It is important to note, however, that the numbers presented in Table 3 are conservative, since the proportionally consolidated values considers only all disclosed joint ventures, that is, firms do not disclose accounting information for all their joint ventures. If they did so, the difference would be much larger.

Table 3

Actual versus proportionally consolidated accounting values

	Original values	Proportionally Consolidated values	t test	
Assets	100.032	104.094	-0.462	
Liabilities	67.493	73.453	-0.885	
Revenues	45.515	51.839	-1.721	*
Expenses	44.199	50.756	-1.802	*

4.2 Value Relevance analyses

Table 4 shows the descriptive statistics by industry of the variables used in Equation (1). Panel A of Table 4 shows log-prices and joint venturers' assets, liabilities, revenues and expenses per share, and Panel B shows their joint ventures' assets, liabilities, revenues, and expenses per share. Comparing Panel A to Panel B, one can also see how small are joint ventures relative to their joint venturers, as discussed in the previous section.

Table 4

Descriptive statistics by industry

Industry	Stat	log-Price	Assets	Liabilities	Revenues	Expenses
Panel B: Joint Ventures						
Mining and Construction	Mean	2.80	136.90	96.00	68.90	68.70
	Std. Dev.	2.20	227.00	171.10	91.80	91.00
	N	126	136	136	136	136
Manufacturing	Mean	3.00	82.30	45.70	61.40	59.60
	Std. Dev.	1.70	139.00	86.70	80.70	79.20
	N	229	250	250	250	250
Utilities	Mean	2.20	47.20	29.80	19.00	18.10
	Std. Dev.	1.40	97.60	65.30	33.30	32.20
	N	199	211	211	211	211
Wholesale and Retail Trade	Mean	2.00	64.80	42.80	53.50	51.80
	Std. Dev.	2.00	155.60	114.40	88.80	87.00
	N	56	56	56	56	56
Finance, Insurance and Real Estate	Mean	2.70	180.40	137.10	30.20	28.90
	Std. Dev.	2.10	277.80	217.30	66.20	65.20
	N	144	161	161	161	161
Services	Mean	2.10	44.30	33.40	28.40	28.10
	Std. Dev.	1.60	89.50	79.30	49.70	49.40
	N	71	76	76	76	76
Other	Mean	4.10	198.50	126.10	90.50	84.70
	Std. Dev.	1.30	245.80	185.40	105.50	102.30
	N	40	39	39	39	39
Panel B: Joint Ventures						
Mining and Construction	Mean	2.80	10.50	6.80	7.00	6.60
	Std. Dev.	2.20	17.40	11.20	13.30	12.30
	N	126	136	136	136	136
Manufacturing	Mean	3.00	5.60	2.70	4.50	4.20
	Std. Dev.	1.70	11.50	5.80	8.60	8.00
	N	229	250	250	250	250
Utilities	Mean	2.20	6.30	4.10	2.80	2.60
	Std. Dev.	1.40	11.90	7.90	7.10	6.70
	N	199	211	211	211	211
Wholesale and Retail Trade	Mean	2.00	5.60	3.30	5.70	5.20
	Std. Dev.	2.00	13.60	7.90	12.50	11.50
	N	56	56	56	56	56
Finance, Insurance and Real Estate	Mean	2.70	7.70	4.80	2.30	1.90
	Std. Dev.	2.10	15.10	9.60	7.00	6.30
	N	144	161	161	161	161
Services	Mean	2.10	1.70	1.30	0.80	0.70
	Std. Dev.	1.60	5.20	4.80	1.80	1.70
	N	71	76	76	76	76
Other	Mean	4.10	18.40	10.90	11.20	10.60
	Std. Dev.	1.30	18.00	12.30	11.80	11.10
	N	40	39	39	39	39

Table 5 shows the estimation results for three different models. Model (1) is the traditional basic value relevance model, which shows both equity and net income are positive and statistically significant, being, therefore, relevant to explain stock prices. This is in line with the previous value relevance literature (Collins, Maydew, & Weiss, 1997; Chen, Chen, & Su, 2001), which shows net income and equity are important to explain stock prices, that is, accounting values are value relevant to the stock market. Model (2) is the decomposed value relevance model, in which equity is decomposed into assets and liabilities and net income is decomposed into revenues and expenses. This decomposition is important given that moving from proportionate consolidation to the equity method in general results in the same net income and in the same equity, but smaller assets, liabilities, revenues and expenses, as discussed by Sarquis et al. (2020). Our results indicate that once equity and net income are decomposed, total assets and revenues appear highly statistically significant with the expected signals, while liabilities also have the expected signal but is significant only at the 10% level, and expenses are not significant.

Since the estimations are in first-differences, only 565 observations remain for the regressions. As explained in Section 3.2, we estimate the value relevance models including firms fixed effects, since their omission could lead to endogeneity and, therefore, biases in the estimated coefficients that could result in mistaken conclusions. For instance, joint ventures' accounting values may not appear significant because they are not important to some firms and only to others, and controlling for firm-fixed effects allows us to avoid this. Firm fixed effects can be included by either the within transformation (equivalent to adding firm dummies) or the first difference transformation. Wooldridge (2010) explains that both are equally valid to avoid biases due to omitted time-constant variables but taking first-differences is more efficient when the errors are autocorrelated and suggests a test to evaluate this. For all models, the test indicated first-differences to be more appropriated, which is expected when the dependent variable is log-prices (more prone to autocorrelation and unit roots than differences in log-prices). Therefore, the variables are all time-variations, which usually lead to lower R-squared values. While the traditional literature on value relevance models usually yields high R-squared values and rely on that to evaluate how important accounting values are to the market, this measure is not appropriate for first-difference models. Actually, some papers show the R-squared of value relevance models with variables in levels suffer from scale bias (Brown, Lo, & Lys, 1999; Bartov, Goldber, & Kim, 2005). Therefore, we rely on variables' individual statistical significance to evaluate whether they are important or not to explain stock prices.

Finally, when including the joint ventures values in the model (Model (3)), interesting results appear. First, neither joint ventures' assets or liabilities are value relevant, but only the joint venturers' assets and liabilities are relevant. While in Model (2) joint venturers' revenues were relevant, when adding joint ventures' revenues and expenses, only the latter appear significant. Therefore, the results suggest joint ventures' income information presented in the Notes to the Financial Statements of the joint venturers are absorbed by the market, being able to explain the investors' stocks prices. The R^2 is low for all three models, but this is expected since the variables are in first-differences, as previously explained.

This result is in line with the previous literature that analyzed the value relevance of information disclosed in the Notes to the Financial Statements, such as Al Jifri and Citron (2009), who found goodwill information in the Notes able to explain stock prices in the UK market. This is not always the case, however. The literature usually present mixed results about the value relevance of information presented in the Notes. For instance, Valfaei, Taylor, and Ahmed (2011), found intellectual capital disclosures in the Notes were value relevant in Britain and Australia but not so much in Hong Kong and Singapore, and Davis-Friday, Folami, Liu, and Mittelstaedt (1999) found that pension liability information is more value relevant when presented in the balance sheet rather than in the Notes.

Table 5

Value relevance models

	Dependent variable:		
	log Prices		
	(1)	(2)	(3)
Equity	0,004*** (0,001)		
Net Income	0,038*** (0,005)		
Assets		0,003*** (0,001)	0,003*** (0,001)
JV Assets			-0,008 (0,007)
Liabilities		-0,003* (0,002)	-0,003** (0,002)
JV Liabilities			0,010 (0,009)
Revenues		0,003** (0,001)	0,002 (0,002)
JV Revenues			0,060** (0,030)
Expenses		-0,002 (0,002)	-0,001 (0,002)
JV Expenses			-0,060** (0,029)
Constant	-0,030** (0,013)	-0,024* (0,013)	-0,023* (0,013)
First-differenced Variables	Sim	Sim	Sim
Clustered Std. Errors	Sim	Sim	Sim
Observations	565	565	565
R ²	0,087	0,035	0,041
Adjusted R ²	0,084	0,028	0,027
F Statistic	26,792***	5,046***	2,944***

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

Next, we evaluate whether and how the joint ventures' value relevance depends on the level of investor sophistication. We proxy investor sophistication by the percentage of institutional investors for each firm at each year. On average, firms have 28.8% of institutional ownership and for three fourths of the sample this percentage is smaller than 40%. Therefore, in general, institutional ownership is low. Figure 3 shows the average percentage of institutional ownership by industry and country, where it is possible to see that it is much higher for firms in the United Kingdom than in the other countries. In fact, the average percentage of institutional ownership in the United Kingdom is 73.9%, followed by South Africa with an average of 61.7%. The next country is Norway, with 41.6%. The countries with the lowest levels of institutional ownership are The Philippines (3.6%), Hong Kong (7%), and Sweden (11.8%).



Figure 3. Institutional ownership by industry and country

Table 6 shows the estimation results of Equation (1) for two splitted samples. The first one (Model (1)) shows the results for observations with high (above median) institutional ownership levels, while the second one (Model (2)) shows the results considering the observations with low levels of institutional environment. The results in Table 6 indicates that the value relevance of joint ventures' revenues and expenses are only valid for the high institutional ownership sample, that is, investors only incorporate information from the notes to the financial statements regarding joint ventures' interest when they are sophisticated. For less sophisticated investors, only the joint venturers' assets and liabilities are incorporated into stock prices. This is consistent with the literature that analyses differences in value relevance according to the level of institutional ownership. For instance, Song, Thomas, and Yi (2010) find evidence that the value relevance of fair values is greater for firms with strong corporate governance (including the percentage of shares held by institutional investors) in the US, Yu (2013) finds that institutional ownership (along with analyst following) can explain pension liabilities' value relevance also in the US, and Rehman, Riaz, Cullinan, Zhang, and Wang (2020) found institutional ownership moderates the value relevance of corporate social responsibility disclosure in China.

Table 6
Value relevance models: investor sophistication

	Variável dependente: log-Preços	
	Propriedade institucional alta	Propriedade institucional baixa
	(1)	(2)
Assets	0,002 (0,002)	0,008** (0,004)
JV Assets	-0,017 (0,012)	0,007 (0,020)
Liabilities	0,0004 (0,004)	-0,009** (0,004)
JV Liabilities	0,015 (0,012)	-0,012 (0,028)
Revenues	0,0005 (0,001)	0,009 (0,006)
JV Revenues	0,106*** (0,039)	0,001 (0,045)
Expenses	-0,001 (0,001)	-0,006 (0,007)
JV Expenses	-0,099** (0,043)	-0,0004 (0,049)
Constant	-0,045** (0,020)	-0,008 (0,023)
First-differenced Variables	Sim	Sim
Clustered Std. Errors	Sim	Sim
Observations	259	253
R ²	0,067	0,057
Adjusted R ²	0,037	0,026
F Statistic	2,256**	1,843*

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

Therefore, our results are consistent with the hypothesis that the change from the proportional consolidation method to the equity method in joint ventures' interests accounting represents an information loss for less sophisticated investors who are not fully able to incorporate information from the notes to the financial statements into their investment decisions. This finding is supported by the previous literature, which argues that recognition and disclosure are not substitutes and that users face higher costs to process a disclosed information in comparison to a recognized information (Müller et al., 2015; Schipper, 2007; Yu, 2013). Therefore, only sophisticated investors are able to absorb this information disclosed in the notes. This is an important result when considering accounting normalization that takes place in a wide range of countries with widely different levels of institutional environment quality, as is case for the IFRS issued by the IASB. As previous studies show, the ability of the market to incorporate information only disclosed in the Notes vary according to the institutional environment (see, e.g., Kang & Pang, 2005; Chebaane & Othman, 2014; Fiechter & Novotny-Farkas, 2017) and to the level of investor sophistication, as in Song et al (2010), Yu (2013), Rehman et al (2020) and in the present research.

5. Concluding remarks

In this research, we analyzed the information of joint ventures on the notes to the joint venturers' financial statements following the application of IFRS 11 and IFRS 12. We investigate how firms are disclosing such information and then, whether it is value relevant to the market. Before IFRS 11 and IFRS 12, joint ventures' information was part of the joint venturer's financial statements via the proportionate consolidation method (when this method was chosen), but after the issuance of those standards, joint venturers could only use the equity method to account for their interests in joint ventures and the financial information of joint ventures is only disclosed in the notes to the joint venturers' financial statements.

We hand-collect and analyze 1,858 financial statements from 551 firms from 26 countries for the period from 2013 or 2014 (depending on the year of adoption) to 2016. From the 551 firms, only 316 firms (totaling 959 financial statements) have joint ventures' assets, liabilities, revenues, and expenses disclosed in their notes to the financial statements. In general, these values are relatively low compared to the joint venturers' accounting values, but there is considerable variation. With the available information we simulate joint venturers' financial statements as if they used the proportional consolidation method and we found statistically significant differences between the actual disclosed revenues and expenses (equity method) and the simulated ones considering the proportional consolidated values, which includes firms' joint ventures information.

Next, we found that joint ventures' revenues and expenses are value relevant to explain the joint venturers' stock prices. This suggests joint venture' income information presented in the notes are absorbed by the market. However, this only holds for firms with higher levels of institutional investors. For firms with lower levels of institutional investors, none of the joint venture's information appears relevant in our estimations, which suggests they are absorbed only by more sophisticated investors.

In summary, we present evidence consistent with a loss of information with the adoption of IFRS 11. Firms are not disclosing in the notes the same financial information of joint ventures that could be previously obtained in the financial statements and that even for those firms that are disclosing, the disclosed information is absorbed only by sophisticated investors.

Our findings have important contributions not only to the previous academic literature, but also to investors in the capital market and to the accounting standard setter (IASB). Specifically, this research contribute to the literature on the accounting treatment of interests in joint ventures, on the firm's level of compliance with disclosure requirements, and on the discussion about the differences of recognizing an item in the financial statements or disclosing it in the notes to the financial statements. Regarding the practical contribution, our findings are important to investors in the capital market, especially less sophisticated investor, by providing evidence that they are not properly absorbing the financial information of interests in joint ventures. Finally, this research is also relevant to the IASB during the Post-Implementation Review (PIR) of IFRS 11 and IFRS 12 currently in progress and to the Disclosure Initiative project.

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