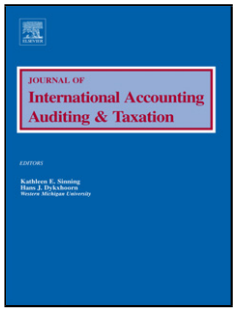

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Did the switch to IFRS 11 for joint ventures affect the value relevance of corporate consolidated financial statements? Evidence from France and Italy

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Abstract

We investigate the effects of the adoption of International Financial Reporting Standard (IFRS) 11, *Joint Arrangements.* In so doing, we analyze whether the removal of the proportionate consolidation option and the mandatory use of the equity method in reporting for joint ventures influences the value relevance of co-venturers' total assets and liabilities. In a reverse situation, i.e. the elimination of the equity method, Richardson, Roubi, and Soonawalla (2012) found a decline in the value relevance of the aforementioned amounts for firms forced to change reporting method, partially offset by the value relevance of joint venture data disclosure. We focus on a continental European setting and analyze a sample of 120 Italian and French non-financial listed firms over the period 2008-2015. We find a reduction in the value relevance of co-venturers' total assets and liabilities for companies obliged to move from proportionate consolidation to the equity method. Conversely, we do not find an increase in the value relevance of joint venture disaggregated data provided in the notes.

Keywords: joint ventures; proportionate consolidation; equity method; IFRS 11; value relevance

1. Introduction

The provisions of International Financial Reporting Standard (IFRS) 11, *Joint Arrangements*, revived the debate on reporting for investments in joint ventures. Issued by the International Accounting Standard Board (IASB) in 2011, this standard eliminated the free choice between using proportionate consolidation and the equity method to account for joint ventures by requiring use of the equity method. The IASB's decision is not supported by the extant accounting literature, which has not reached conclusive results on the conceptual supremacy of the equity method. Furthermore, most respondents to the Exposure Draft ED 9 (IASB, 2007) did not agree with the abandonment of proportionate consolidation (Alexander et al., 2012).

The two accounting methods ultimately lead to the same total shareholders' equity and net income, but result in a significantly different qualitative and quantitative representation of the group's results. Due to these differences, many studies have attempted to demonstrate the supremacy of one method over the other. However, the results are mixed.

Research has addressed this issue from a theoretical point of view, identifying the advantages and disadvantages of each method (Dieter & Watt, 1978; Bierman, 1992; Milburn, FASB (Financial Accounting Standards Board), & Chant, 1999). Empirical studies have examined the ability of proportionally-consolidated amounts, compared with those using the equity method, to predict the co-venturer's profitability (Graham, King, & Morrill, 2003a; Leitner-Hanetseder, 2010). Some research analyzed the association between several financial statement figures and ratios computed under the two concurrent methods with variables assumed as proxies for market risk, such as share-price volatility (Kothavala, 2003), bond ratings (Bauman, 2007), and bond risk premiums (Stoltzfus & Epps, 2005). Previous research provided evidence that the disclosure of disaggregated data of joint ventures is value relevant (Bauman, 2003; Soonawalla, 2006; O'Hanlon & Taylor, 2007) and can reduce information

asymmetry between market participants (Lim, Yeo, & Liu, 2003). Another stream of research deals with the drivers of the corporate choice between proportionate consolidation and the equity method (Lourenço & Curto, 2010; Catuogno, Allini, & D'Ambrosio, 2015).

Richardson, Roubi, and Soonawalla (2012) examine the effects on value relevance of the co-venturer's total assets and liabilities stemming from the decision of the Canadian standards setter to abandon the equity method in reporting for joint ventures. They detected a decrease of value relevance for companies that switched from the equity method to proportionate consolidation, as well as a significant value relevance of joint venture data provided by mandatory disclosure. These authors suggest that their results may be due to the elimination of accounting choice. However, because they could not analyze the reverse situation, they were unable to discern conclusively whether the decline in value relevance was due to the use of the proportionate consolidation method or in some way represented a cost of the reduced choice in reporting methods. Therefore, there is a need for research carried out in the situation of a mandatory change from the free choice of the equity method or proportionate consolidation to the required use of the equity method.

Finally, the effects of adopting IFRS 11 are rather unexplored, and the few studies addressing this issue focused on the impact of the new standard on financial statement amounts and ratios (Demerens et al., 2014; Leitner-Hanetseder & Stockinger, 2014; Lopes & Lopes, 2019). We explore this gap by verifying whether the mandatory use of the equity method, required by IFRS 11, affects the ability of the co-venturer's total assets and liabilities to explain the equity market value of the reporting firm. Moreover, since the equity method does not allow the co-venturer's share of joint venture assets and liabilities to be shown on the statement of financial position, we investigate whether the value relevance of the disclosure of such amounts in the notes increases for companies required to change to the equity method.

We view the value-relevance perspective as the ultimate goal of EU Regulation 1606/2002, which adopted IAS/IFRS, because it seeks "to improve the efficient and effective functioning of capital markets". This is consistent with the value-relevance perspective that focuses on the information needs of equity investors (Palea, 2013). Further, research providing evidence on the value-relevance implications of a change in accounting standards can be of interest to standard setters as it "can be informative to their deliberations on accounting standards" (Barth, Beaver, & Landsman, 2001, p. 89).

To the best of our knowledge, no study has yet analyzed the effects of the adoption of IFRS 11 on the value relevance of the co-venturer's consolidated financial statements and we contribute by analyzing a continental European setting. We focus on the French and Italian contexts, which are comparable for financial market characteristics, accounting culture, and corporate governance structures (Franks et al., 2011; Nobes, 2011; Rizzotti, Frisennsa, & Mazzone, 2017; Gandini, Astori, & Cassano, 2009), and use a sample of 120 non-financial listed firms over the period 2008-2015.

Our findings demonstrate that companies that preferred proportionate consolidation before adopting IFRS 11 and were then required to change to the equity method suffered a decrease in the value relevance of total liabilities and, with lower statistical significance, of total assets Conversely, companies that used the equity method before IFRS 11 came into force do not show any significant effect on the value relevance of their total assets and liabilities. Further, the switch to the equity method does not significantly affect the value relevance of the co-venturer's share of joint venture assets and liabilities disclosed in the notes.

Our study contributes to the literature on reporting for joint ventures and to the empirical research on the value relevance of accounting information provided under IFRS (Hung & Subramanyam, 2007; Barth, Landsman, & Lang, 2008; Morais & Curto, 2009; Clarkson et al., 2011; Fasan, Fiori, & Tiscini, 2014). We add to the scarce literature on the

effects of IFRS 11 adoption, presenting evidence on a continental European setting. In so doing, we provide some insights to the IASB in order to assess the effect of the implementation of IFRS 11.

The remainder of the paper is organized as follows: the next section presents prior studies on reporting for joint ventures; Section 3 illustrates the main motivations underlying the IASB's decision to eliminate proportionate consolidation as an option to account for joint ventures; Section 4 introduces the value-relevance perspective and hypotheses development; Section 5 describes the data and methods; Section 6 provides the results and discusses them; Section 7 presents sensitivity analysis; and Section 8 concludes by noting limitations and suggests avenues for further research.

2. Literature review

Extant literature on accounting for joint ventures comprises both theoretical and empirical contributions. There are studies that identified the advantages and disadvantages of using proportionate consolidation compared with the equity method, but their arguments do not allow a definitive conclusion on the most appropriate method of reporting for joint ventures.

Some believe proportionate consolidation is generally better than the equity method but view it as inadequate when the co-venturer carries on a business entirely different from that of the joint venture (Dieter & Watt, 1978). Bierman (1992) thinks proportionate consolidation would avoid the undervaluation of debt related to the investments in joint ventures, but that it is more complex to apply than the equity method. This means that co-venturers should assess whether the costs of providing proportionally-consolidated financial information outweigh the benefits of that information (Bierman, 1992). Theoretical research also claims that proportionate consolidation does not comply with the definition of assets and liabilities: the

former being resources over which the investor exerts unilateral control and the latter actual obligations for which the investor is liable. It is not the case of joint venture assets and liabilities, so that their presentation on the face of the co-venturer's balance sheet is conceptually incorrect (Milburn et al., 1999).

Empirical literature on accounting for joint ventures mainly focuses on the relevance and, hence, the usefulness of financial information when joint ventures are accounted for using proportionate consolidation rather than the equity method. Research provides evidence that the determinants of the return on equity ratio computed on prior-year proportionally-consolidated amounts better predict current return on equity than those based on prior-year equity method amounts (Graham et al., 2003a). Also, a negative effect on the forecasting and value relevance of financial information was found to be associated with accounting standards failing to require disaggregated data for joint ventures and associates (Soonawalla, 2006).

Studies have reached different results after analyzing the relationship between financial statement amounts and ratios, calculated either under the equity method or using proportionate consolidation, and various risk measures, such as share price volatility, bond ratings, and bond risk premiums. Kothavala (2003) find that proportionally-consolidated financial amounts are more risk-relevant for explaining share price volatility, whilst the opposite result emerges when examining the association between financial statement values and bond ratings. Literature has addressed whether co-venturers' creditors view joint venture debts as co-venturer obligations or assume that the co-venturer is not liable for joint venture debts and can limit the potential loss to the investment acquisition cost. Since proportionate consolidation is consistent with the former interpretation whilst the equity method reflects the latter, scholars investigated the association between bond risk premiums and certain financial statement amounts and ratios related to a firm's default risk under the two reporting methods. They demonstrated that proportionate consolidation has a stronger association with bond risk

premiums, but only when co-venturers guarantee for joint venture debts (Stoltzfus & Epps, 2005). Unlike Kothavala (2003) and Stoltzfus and Epps (2005), Bauman (2007) finds that proportionally-consolidated amounts and ratios have greater relevance for explaining bond ratings than those from the equity method, regardless of whether co-venturers guarantee joint venture debts.

Using a sample of French listed firms using proportionate consolidation in reporting for their Jointly-Controlled Entities (JCEs), Lourenço, Fernandes, and Curto (2012) show that the market perceives the co-venturer's share of joint venture assets and liabilities as if they were the co-venturer's assets and liabilities. This reveals the risk that a forced switch to the equity method leads to keeping value-relevant information off the balance sheet.

Finally, Richardson et al. (2012) investigate the impact of the removal of the choice between the equity method and proportionate consolidation on the value relevance of key financial statement figures, as experienced by Canadian firms since 1995. The results reveal that firms using the equity method until 1994 and then forced to move to proportionate consolidation show a decrease in value relevance of their total assets and liabilities. But, this effect does not occur for firms also using proportionate consolidation before 1995. However, the negative effect of imposing proportionate consolidation on the value relevance of financial information is mitigated by the disclosure of the co-venturer's share of joint venture assets and liabilities.

Empirical research has also tested the value relevance of disclosing the investor's share of joint venture liabilities that the equity method keeps off the balance sheet. Findings demonstrate that the disclosure of joint venture liabilities has a negative effect on the market value of the investor firm's equity (Bauman, 2003), and this impact is stronger when the co-venturer guarantees joint venture debts (O'Hanlon & Taylor, 2007). Further, Maines et al. (2000) detect that financial analysts who are not very familiar with the methods of reporting

for joint ventures tend to assign a higher value to firms that use the equity method rather than proportionate consolidation, but that the valuation gap lowers when financial analysts can rely on joint venture disaggregated data disclosures. Research has also pointed out that firms making such disclosures experience a significant decrease in the bid-ask spread, and this reduction in the information asymmetry among market participants occurs regardless of the method adopted in reporting for joint ventures (Lim et al., 2003).

3. The IASB's decision to abandon proportionate consolidation

When issuing the previous IAS (International Accounting Standard) 31, *Interests in Joint Ventures,* the International Accounting Standard Committee (IASC) mediated constituents' criticisms to the proposal of mandatory proportionate consolidation and allowed the use of two concurrent methods: proportionate consolidation as a benchmark treatment and the equity method as an acceptable alternative (Kenny & Larson, 1993).

In May 2011, the IASB issued IFRS 11, *Joint Arrangements,* and required the equity method to account for investments in joint ventures, despite the numerous dissenting opinions received in response to the publication of Exposure Draft 9 in 2007 (Alexander et al., 2012). Many of the respondents' criticisms regarding the abandonment of proportionate consolidation follow the observations already pointed out by the literature.

Respondents claimed that the analytical representation provided by proportionate consolidation allows financial statement users to better assess the composition and the quantitative dimension of the group's results when joint ventures represent an extension of the co-venturer's core business. The analytical representation of joint venture activity is more appropriate when co-venturers are closely involved in the management of the joint venture, also guaranteeing for its liquidity and solvency. In such a situation, the move to the equity method might cause a misalignment between the information used by co-venturers in their

decision-making process and risk management (internal reporting system), which would remain based on proportionate consolidation, and the information provided by consolidated financial statements (external reporting system). Further, the use of the equity method does not allow the joint control over joint ventures and the significant influence over the associates (investments) to be distinguished.

Despite the debate stimulated by the publication of ED 9, the IASB maintained its firm stance on eliminating proportionate consolidation and attempted to motivate it in principle, as well as from an operational point of view. The Board highlighted that the choice to refer exclusively to the equity method overlooks any judgment on the conceptual soundness of the two concurrent methods, but it is the natural result of the core principle of IFRS 11. The accounting method for the joint arrangement should reflect its economic substance as identified by the rights and obligations that the parties have on the assets and liabilities of the arrangement. If the parties have rights to the assets and obligations for the liabilities of the arrangement, then it shall be classified as a joint operation and consolidated on a line-by-line basis. Otherwise, if the parties have rights to the net assets of the arrangement, then it shall be classified as a joint venture and recognized as an investment under the equity method.

Operationally, the use of a unique method would increase the consistency and the comparability of financial information. The equity method would enhance the understandability of financial information because it avoids the aggregation of joint ventures amounts with subsidiaries amounts. On the other hand, the due distinction between joint ventures and associates would be achieved thanks to the disclosure requirements in IFRS 12, *Disclosure of Interests in Other Entities*, which would enable financial statement users to evaluate, for each material joint venture, the fundamentals of the underlying economics (IASB, 2011a).

In support of its decision, the IASB has also brought the results of the *ex-ante* effect analysis undertaken with the aim of assessing the impact of IFRS 11 on key financial statement figures and ratios (IASB, 2011b). With reference to a sample of nineteen companies in five industries that accounted for joint ventures using proportionate consolidation, the IASB concluded that the move to the equity method would have limited effects on co-venturers' financial statements.

Some studies, after the IASB's effect analysis, simulated the effect of the transition to the equity method by referring to larger samples and considering a larger set of financial statement figures and ratios (Demerens et al., 2014; Leitner-Hanetseder & Stockinger, 2014). Unlike the IASB, they demonstrated that the application of IFRS 11 would significantly affect co-venturers' financial statements.

4. The Value-relevance perspective and hypotheses development

The IASB's Conceptual Framework for Financial Reporting includes existing and potential equity investors among the primary users of general-purpose financial statements. Primary users of financial statements have the most critical and immediate need for information in financial reporting (IASB, 2018). For example, they need information about the resources of a company, the claims against it, and changes in those resources and claims, in order to predict the amount, timing, and risk of future net cash inflows that the company will be able to generate. Accounting numbers provide equity investors with information they use in assessing the inputs to equity valuation models. According to the Conceptual Framework, relevance and faithful representation are the fundamental qualitative characteristics of useful financial information, and relevant financial information is capable of affecting its users' decisions. In particular, from the investor's perspective, information is relevant if it affects their equity investment decisions.

The value-relevance perspective measures the ability of financial statement figures to convey information that affects share prices as it analyzes the statistical association between a firm's equity market value and accounting measures (Francis & Schipper, 1999). Share prices express investors' consensus beliefs but do not necessarily reflect a company's economic value. Value relevance analysis provide inferences on whether the measures implicitly assessed by investors are reflected by accounting numbers, and they may be applied in financial markets with different characteristics (Barth et al., 2001; Hellström, 2007).

This perspective is widely used in order to assess the effect of the adoption of IAS/IFRS (Hung & Subramanyam, 2007; Barth et al., 2008; Azzali, Fornaciari, & Pesci, 2011; Clarkson et al., 2011; Cormier & Magnan, 2016; Okafor, Anderson, & Warsame, 2016), and it is also a viable perspective in order to investigate the consequences of IFRS 11.

As illustrated in the literature review, neither theoretical nor empirical research provide substantial arguments to definitively affirm the supremacy of one accounting method over the other. As a matter of fact, empirical literature provides evidence that the use of the equity method or proportionate consolidation is consistent with the characteristics of a firm and its joint ventures.

A single-industry study reports an association between the stage of production in which the joint venture operates and the reporting method (Whittred & Zimmer, 1994). In a production stage where the main assets of the joint project are intangible assets and its borrowing capacity is limited, the demand for proportionally consolidated amounts is low. In a production stage where the joint ventures have significant tangible assets in place, how these assets are financed affects the choice of reporting method. They find a significant association between the use of proportionate consolidation and the presence of co-venturer guarantees for joint venture debts. Under proportionate consolidation the joint project's creditors can rely on a comprehensive representation of the assets that serve as collateral, and on the other hand, the

co-venturer's creditors can better assess the magnitude of the debt that the co-venturer's assets guarantee. Conversely, when the joint venture is financed on a non-recourse basis, the equity method is preferred, as the joint project's creditors have limited access to the co-venturer's assets and the co-venturer's creditors have access to the net investment in the joint venture.

More recently, research investigated the mandatory transition to IFRS by UK listed firms in 2005, which allowed them to choose between proportionate consolidation and the equity method in reporting for joint ventures (see IAS 31) (Lourenço & Curto, 2010). The analysis reveals that the choice of method reflected the economic substance of the relationship between the co-venturer and its JCEs. The equity method is preferred when the majority of the JCEs in which the co-venturer participates are Scale JCEs, established to enter together a contiguous phase of their production or distribution cycle[1]. On the other hand, proportionate consolidation is likely to be used when the majority of the JCEs to be reported are Link JCEs. In this case, participants contribute their own distinctive skills and resources with the aim of entering a new business together, and are actively engaged in managing the business of the JCE. Catuogno et al. (2015) use a sample of Italian listed firms and confirm the findings of Lourenço and Curto (2010) on the relationship between reporting method and the type of JCE.

The evidence provided by the aforementioned studies suggests that managers tend to apply to financial statements the same method used internally to measure and control performance and the risks of joint ventures. This is done in order to reflect their expectations about the firm's future cash flows and to increase the informativeness of consolidated financial statements.

[1] According to Hennart (1988: p. 362) "'Scale' JVs are created when two or more firms enter together a contiguous stage of production or distribution or a new market. The main characteristic of these ventures is that they result from similar moves by all the parents: forward or backward vertical integration, horizontal expansion, or diversification. In 'link' JVs, on the other hand, the position of the partners is not symmetrical. The JV may, for example, constitute a vertical investment for one of the parties, and a diversification for the other".

As observed by the respondents to the publication of ED 9, the mandatory adoption of the equity method might imply a misalignment between the internal reporting and the external reporting system for firms obliged to change joint venture reporting method (Alexander et al., 2012). Therefore, the mandatory change of reporting method might lower a company's ability to report accounting numbers that are more informative of its performance, level of risk, and future cash flows.

Based on the above discussion, we expect this restriction to influence the ability of accounting numbers to explain equity market value for firms obliged to change reporting method. Thus, we develop the following hypothesis:

H1. Co-venturers forced by IFRS 11 to move from proportionate consolidation to the equity method experience a decrease in the value relevance of their total assets and liabilities.

For firms reporting joint ventures under proportionate consolidation before the switch, the integration of the co-venturer's assets and liabilities with those of its joint ventures provided investors with a comprehensive representation of the group's resources and obligations, whereas the adoption of the equity method would hide this valuation relevant information. In this direction, Lourenço et al. (2012) focused on French listed firms that used proportionate consolidation under IAS 31 to demonstrate that investors perceived the co-venturer's share of joint venture assets and liabilities as assets and liabilities of the co-venturer. Therefore, adopting IFRS 11, the equity method would fail to recognize assets and liabilities that investors consider as belonging to the co-venturer. With the change to the equity method, disclosures become the main source of information on joint venture assets and liabilities.

The disclosure requirements introduced by the IASB relating to joint ventures are included in IFRS 12. According to this standard, co-venturers should provide disaggregated data on joint ventures useful to evaluate the nature, extent, and financial effects of their interests in joint ventures (IFRS 12: 20). For each material joint venture, such disclosures include the ownership stake held by the co-venturer and summarized financial information for the amount shown in the separate financial statements of the joint venture. This information makes it possible to calculate the co-venturer's share of joint venture assets and liabilities and also to compute *pro forma* proportionate consolidation amounts.

A previous study carried out in the UK documents the value relevance of disclosures of the co-venturer's share of joint venture liabilities when the equity method is applied (O'Hanlon & Taylor, 2007). In the observed period, UK GAAP (FRS 9, *Associates and Joint Ventures*) required the use of the gross equity method, according to which co-venturers had to show their share of joint venture gross assets and liabilities on the face of the consolidated balance sheet, rather than only in the notes as required by IFRS 11.

Therefore, we expect the switch to the equity method to increase the value relevance of the disclosure of co-venturers' share of joint venture assets and liabilities. This is because market participants will be able to obtain, from the notes, the information that the equity method keeps off the statement of financial position and use it to predict more accurately the co-venturer's future cash flows. Based on the above discussion, we develop the following hypothesis:

H2. Co-venturers forced by IFRS 11 to move from proportionate consolidation to the equity method experience an increase in the value relevance of the disclosure of their share of joint venture assets and liabilities.

5. Data and methodology

5.1. Data and sample

The study uses data from Italian and French non-financial listed firms for the years 2008-2015. Of all the European countries, Italy and France are the two largest economies with Latin roots and a similar political evolution (Rizzotti et al., 2017). They are two roman-law (code law) countries with similar institutional and legal settings (La Porta, Lopez-de-Silanes, & Shleifer, 1999). Relatedly, Italy and France also have comparable accounting cultures (Nobes, 2011). Their financial markets are similar regarding their level of development, prevalence of closely held companies, and relatively weak investor protection (Franks et al., 2011; La Porta et al., 1999). Moreover, France and Italy share the same corporate governance systems (Gandini et al., 2009).

We searched for listed companies with interests in material joint ventures for at least one year before and one year after the reporting mandatory switch date (1 January 2014). Our sample comprises every non-financial listed firm that reported joint ventures in the time period 2008-2015. We did not require each co-venturer to have disclosed joint venture disaggregated data for all years, as we only needed the presence of such disclosures for the 2013 and 2014 reporting periods. The final sample consists of 61 Italian firms and 59 French firms with investments in joint ventures, and we have 848 firm-year observations after ignoring firm-years with missing values. We hand-collected, from the notes to the co-venturers' consolidated financial statements, the data on joint venture assets and liabilities. All financial statement information and market data for the co-venturers was collected from Orbis, the global Bureau van Dijk Database.

5.2. Methods

The main objective of this study is to verify whether co-venturers that used proportionate consolidation before the adoption of IFRS 11 experience a decline in value relevance of their total assets and liabilities in 2014-2015, when the switch to the equity method became mandatory. In order to test our first hypothesis, we estimated a regression model derived from the original Ohlson model (1995), where the market value of a firm's equity is a function of its book value of equity and earnings. Consistent with the first hypothesis, we divided the book value of equity into total assets and total liabilities.

We ran model (1) for firms that used proportionate consolidation before IFRS 11 came into force and, separately, for firms that used the equity method even before IFRS 11.

$$\frac{MV_{it}}{BA_{i,t-1}} = \alpha_0 + \beta_1 \frac{NI_{it}}{BA_{i,t-1}} + \beta_2 \frac{BA_{it}}{BA_{i,t-1}} + \beta_3 \frac{BL_{it}}{BA_{i,t-1}} + \beta_4 EQ + \beta_5 EQ \times \frac{NI_{it}}{BA_{i,t-1}} + \beta_6 EQ \times \frac{BA_{it}}{BA_{i,t-1}} + \beta_7 EQ \times \frac{BL_{it}}{BA_{i,t-1}} + \beta_8 FR + \beta_9 FR \times EQ + \sum_{j=1}^{4} \gamma_j I_{j,it} + \sum_{t=1}^{T} D_t \quad (1)$$

where the dependent variable is the market value of equity of the co-venturer *i* three months after the end of the reporting period *t* (O'Hanlon & Taylor, 2007; Graham, Lefanowicz, & Petroni, 2003b). All the variables are explained in Table 1.

Insert Table 1 about here

Unlike Richardson et al. (2012), we do not use the number of outstanding shares as a deflator, but rather in our model all variables are scaled by the co-venturer's lagged total assets. The model used by the aforementioned scholars does not control for the effect of the ratio of shares in total assets (or liabilities) of joint ventures to total assets (or liabilities) of reporting firms. Conversely, scaling joint venture assets and liabilities by the co-venturer's total assets allow us to control for the aforementioned effect. Moreover, the number of

outstanding shares deflator is not a homogeneous variable because the book values of shares are different. The number of shares depends on firms' capital structure choices in terms of equity vs. leverage but also from subjective management choices about the book value of each share.

For our analysis, the relevant terms are the interaction terms EQ x $BA_{i,t}$ and EQ x $BL_{i,t}$. The interaction terms allow us to test whether there was a change in the value relevance of the co-venturer's total assets and liabilities due to the move to the equity method. In line with hypothesis 1, we predict a decrease in the value relevance of the co-venturer's total assets and liabilities. Coefficients β_6 and β_7 refer, respectively, to the incremental effect of total assets and liabilities related to the switch to the equity method. So, we expect the former will be negative and the latter will be positive.

In order to test our second hypothesis, we estimated two further regression models by expanding model (1) to account for changes in the value relevance of the disclosure of the co-venturer's share of joint venture assets and liabilities due to changing to the equity method. Therefore, we ran model (2) and model (3) only for firms that used proportionate consolidation before IFRS 11 came into force.

$$\frac{MV_{it}}{BA_{i,t-1}} = \alpha_0 + \beta_1 \frac{NI_{it}}{BA_{i,t-1}} + \beta_2 \frac{BA_{it}}{BA_{i,t-1}} + \beta_3 \frac{BL_{it}}{BA_{i,t-1}} + \beta_4 EQ + \beta_5 EQ \times \frac{NI_{it}}{BA_{i,t-1}} + \beta_6 EQ \times \frac{BA_{it}}{BA_{i,t-1}} + \beta_7 EQ \times \frac{BL_{it}}{BA_{i,t-1}} + \beta_8 FR + \beta_9 FR \times EQ + \beta_{10} EQ \times \frac{BA_{jv,it}}{BA_{i,t-1}} + \sum_{j=1}^{4} \gamma_j I_{j,it} + \sum_{t=1}^{T} D_t \quad (2)$$

$$\frac{MV_{it}}{BA_{i,t-1}} = \alpha_0 + \beta_1 \frac{NI_{it}}{BA_{i,t-1}} + \beta_2 \frac{BA_{it}}{BA_{i,t-1}} + \beta_3 \frac{BL_{it}}{BA_{i,t-1}} + \beta_4 EQ + \beta_5 EQ \times \frac{NI_{it}}{BA_{i,t-1}} + \beta_6 EQ \times \frac{BA_{it}}{BA_{i,t-1}} + \beta_7 EQ \times \frac{BL_{it}}{BA_{i,t-1}} + \beta_8 FR + \beta_9 FR \times EQ + \beta_{10} EQ \times \frac{BL_{jv,it}}{BA_{i,t-1}} + \sum_{j=1}^{4} \gamma_j I_{j,it} + \sum_{t=1}^{T} D_t \quad (3)$$

where $BA_{jv,i,t}$ and $BL_{jv,i,t}$ are respectively the co-venturer's share of joint venture assets and liabilities disclosed in the notes. As in our other models, these two variables are scaled by the co-venturer's assets. This also allows us to control for the effect due to the relative dimension of the interest in joint ventures with respect to the co-venturer.

We used models (2) and (3) to separately analyze the change in the value relevance of the disclosure of the co-venturer's share of joint venture assets and liabilities. This approach eliminates the impact on the results due to any collinearity problems by having both variables in the same model. The correlation between joint venture assets and liabilities is virtually one, and it would be unfeasible to estimate a regression with both variables: the model would be ill-conditioned and with unstable parameters estimates due to multicollinearity problems. The interaction terms EQ x $BA_{jv,i,t}$ and EQ x $BL_{jv,i,t}$ allow us to verify whether there was a change in the value relevance of the disclosure of the co-venturer's share of joint venture assets and liabilities. Since we predict an increase in the value relevance of such disclosures, we expect that the coefficient β_{10} relative to the incremental effect of the co-venturer's share of joint venture assets and liabilities related to the switch to the equity method will be positive in model (2) and negative in model (3).

5.3. Descriptive statistics

Table 2 reports descriptive statistics of our data for the reporting before the mandatory switch to the equity method, 2008-2013, and afterwards, 2014-2015. For the earlier period, we

also present the t-statistics and their p-values to test for differences between proportionate consolidation and equity reporting firms. There were 66 firms reporting under proportionate consolidation and 54 reporting under the equity method before 2014. The t-statistics indicate that the market value of equity is the only variable which is significantly different at the 1% level, while there is weaker evidence of differences at the 10% level for net income, co-venturer book liabilities, and co-venturer's share of joint venture liabilities. Panel C summarizes the sample profile by macroindustry classification, while Panel D reports descriptive statistics for each sample year.

Insert Table 2 about here

Table 3 gives the correlation coefficients for the variables used in the regression models. Panel A and B show the Pearson correlation coefficients for the proportionate and equity reporting firms in the 2008-2013 period, while Panel C presents the correlations when all firms report their joint ventures under the equity method after adopting IFRS 11.

Insert Table 3 about here

6. Regression results and discussion

To address the primary research question, we estimated model (1) using a GLS panel data approach to check that our results are not driven by intertemporal differences in the data or by the pooling nature of the dataset. In order to account for possible time-fixed effects and industry-fixed effects, we used year and industry dummies. To control for cross-correlations of the residuals and the related biases in the OLS standard errors, we performed a GLS estimation with standard errors adjusted for correlation within a cluster, assuming that standard errors are clustered by firm. The resulting estimates are reported in Table 4.

The first two columns in Table 4 report the estimated coefficients and the associated statistical significance. A panel data approach uses efficiently the cross-section and time-series

data, increasing the parameter's reliability and also reducing the likelihood of multicollinearity problems. The correlations between the independent variables and the variance inflation factors were relatively small, so the estimated coefficients and their significance should be reliable. We also analyzed the influence diagnostics to detect the presence of outliers.

Insert Table 4 about here

We tested the effect on value relevance of key financial statement figures due to the mandatory change to the equity method to report for joint ventures. In so doing, we analyzed the association of the co-venturer's total assets and liabilities to the firm's equity market value.

We find that firms that used proportionate consolidation prior to 2014 experience a decrease in the value relevance of their total liabilities after the move to the equity method. In particular, the reduction in the ability of total liabilities to explain the reporting firm's equity market value is highly significant. While as predicted total assets show a reduction in value relevance, this effect is not statistically significant. On the other hand, Table 4 shows that companies using the equity method even before IFRS 11 do not experience a decrease in value relevance of their total assets and liabilities. Our results suggest that the removal of the accounting choice between proportionate consolidation and the equity method negatively affects the value relevance of co-venturers' total liabilities, providing some support for H1.

We may infer that market participants do not consider one of the two methods as the absolute best, but rather they judge positively their coexistence. The possibility to refer to different accounting methods serves well the purpose of depicting different types of joint ventures, characterized by a different underlying economic substance. Focusing on the determinants of the choice between proportionate consolidation and the equity method, both Lourenço and Curto (2010) and Catuogno et al. (2015) demonstrated that the strategic role of the joint venture identifies its economic substance (Link JCEs *versus* Scale JCEs), and that managers were committed to reflecting this substance by adopting the same method for both

internal control purposes and in the co-venturer's consolidated financial statements. Therefore, a possible explanation for our findings is that when co-venturers were closely involved in managing their joint ventures, as in the case of Link JCEs, the forced switch to the equity method resulted in market participants having less informative financial statements[2].

Prior studies on consolidation decisions pointed out that firms were more prone to rely on line-by-line consolidation when they directly guaranteed either subsidiary or joint venture debts (Mian & Smith, 1990; Whittred & Zimmer, 1994) or in the presence of cross guarantees provided by companies in the group (Whittred, 1987). Therefore, another possible explanation for our findings may be that co-venturers liable for the debts of their joint ventures used proportionate consolidation to convey a comprehensive portrayal of the group's indebtedness. In this case, the switch to the equity method hides liabilities that market participants might perceive as co-venturer obligations (Stoltzfus & Epps, 2005; Lourenço et al., 2012) and reduces the value relevance of the co-venturer's total liabilities shown on the face of the consolidated statement of financial position.

When the Canadian standard-setter removed the choice between the two concurrent methods in 1995 and imposed proportionate consolidation to report for joint ventures, Richardson et al. (2012) detected a decrease in the value relevance of co-venturers' total assets and liabilities in this reverse situation. Canada and the continental European setting we analyzed experienced an opposite mandatory switch. This resulted in a decrease of value relevance of co-venturers' accounting numbers in both cases. Taken together, these results suggest that the removal of accounting choices in reporting for joint ventures reduces the value relevance of co-venturers' financial information. Nevertheless, literature highlights the

[2] Our study aims to check the value relevance implications of the elimination of accounting choice and relies on secondary sources, i.e. the co-venturer's consolidated financial statements. We do not distinguish between link and scale joint ventures as secondary data cannot help with a definitive classification as this would require interviews with company executives in order to assess each co-venturer's contribution to the alliance (Dussauge, Garrette, & Mitchell, 2000).

importance of a country's institutional background for value relevance (Ali & Wang, 2000; Hung, 2001). Therefore, in making comparisons we must consider the very different institutional environments of Italy and France as compared to Canada. As continental European countries, Italy and France are bank-based economies with civil (code) law while Canada is characterized by a market-based system, is regulated by common law, and has a different accounting culture (Nobes, 2011).

Italian and French GAAP (Generally Accepted Accounting Principles) are based on proportionate consolidation, and under IAS 31 firms were allowed to choose between proportionate consolidation and the equity method. Therefore, the mandatory switch to the equity method took place in an accounting scenario oriented towards proportionate consolidation. Conversely, Canadian GAAP achieved a substantial alignment with US GAAP around the mid-1990s (Cormier & Magnan, 2016). US GAAP required the use of the equity method to account for joint ventures, so that the 1995 mandatory switch to proportionate consolidation represented a departure from the US-influenced accounting culture that characterized Canada since the 1980s. Both our research setting and Canada experienced the removal of accounting choices for joint ventures as well as a mandatory switch that was not in line with the prevalent accounting culture, so we should take into account that the decrease of value relevance may also be related to the latter phenomenon.

Our analysis also shows an increase in the value relevance of net income for firms that mandatorily changed to the equity method. It is likely that the reduction of value relevance of the other variables related to the firm's equity market value has the effect of reinforcing the association between the firm's equity market value and its profitability[3]. Similarly, Richardson et al. (2012) find that the forced switch to proportionate consolidation benefits the value relevance of the co-venturer's net income.

[3]At the same time, although not significant, the coefficient of the net income variable (NI) is negative. This effect that could be due to the sample size or to the strong positive interaction effect (EQxNI).

In order to provide a deeper understanding of IFRS 11's impact on value relevance, we conducted a further analysis. While the equity method fails to recognize the co-venturer's share of joint venture assets and liabilities, this information can be collected from the notes for each material joint venture. So, we considered whether the value relevance of such disclosures increases for companies forced to change reporting method. Running models (2) and (3), we do not find any significant increase of value relevance of the disclosure of the co-venturer's share of joint venture assets and liabilities[4], rejecting H2. The results are displayed in the last two columns of Table 4[5] .

With reference to a sample of French companies that used proportionate consolidation before IFRS 11, Lourenço et al. (2012) provide evidence that market participants regard the co-venturer's share of JCE assets and liabilities as assets and liabilities of the co-venturer. Given this evidence, after the change to the equity method, we would expect market participants to assign greater weight to disclosures because they need to combine the disclosed amounts with recognized assets and liabilities in order to evaluate the group's total risks and rewards. Conversely, our findings point out that disclosures do not compensate for the decrease in the value relevance of reported assets and liabilities.

Our results suggest that investors have a low propensity to consult the information provided in the notes and base their decisions mainly on the amounts reported on the face of the financial statements. On the one hand, this evidence may support the view that investors consider it too costly to process the information provided in the notes or do not consider this information as accurate or reliable as that recognized in the statement of financial position (Lourenço et al., 2012). On the other hand, our findings may also be explained as the inertia of the market for incorporating disclosures into the market values in order to compensate the

[4]As we said before, these variables have a high correlation and their simultaneous estimate is unfeasible for multicollinearity problems.

[5]We performed, for all models, a test to detect the presence of heteroscedasticity using a chi-square test, the p-values ranged from 0.23 to 0.34 and we can accept the null hypothesis of homoscedasticity.

information that the equity method keeps off the statement of financial position. As Italy and France are bank-based economies, with a civil law system and less efficient financial market compared to common law and market-based economies, share prices may not rapidly reflect all available information. Therefore, these results may be more relevant to the period close to the switch to the equity method, and we might expect disclosures to increase their value relevance in subsequent years.

7. Sensitivity analysis

We run several robustness checks as the previous analysis used all available data without winsorising given that the influence diagnostics did not reveal the presence of very influential observations. The analysis was carried out calculating several statistics that analyze the impact of each observation on the parameter estimates. Taken together, these statistics indicate that none of the observations has a large influence on the results. In any case, we rerun the analysis in Table 4 after winsorising the extreme 1% observations of each variable. The results are qualitatively the same as those shown in Table 4, with a clear decline in the value relevance of liabilities for the firms switching from proportionate consolidation to the equity method and with no effect for the other firms.

The next robustness check expanded the models to control for firm/years with negative net income by introducing a dummy variable taking the value of 1 in case of negative net income and zero otherwise. The inferences drawn from this augmented model are substantially unchanged for both samples.

There is also the possibility that the results are driven by other reasons unrelated to the research questions, such as the length of the sample period analyzed or any other factor influencing the value-relevance of balance-sheet variables other than IFRS11 adoption. To address these issues, we conducted two sensitivity checks.

In the first analysis, we estimated our three models for only those firms that have all the observations in the four years around the shift, 2012-2015. This truncated sample consists of 148 firm-year observations for the firms that switched from proportionate consolidation to the equity method. The inference we can draw from this subset analysis, shown in Table 5, is largely unaffected, and the decline in value relevance of the co-venturer's liabilities is strengthened.

The other robustness analysis was a difference-in-difference analysis (Lee, 2016), using the firms with joint ventures and adding a second group of control firms without joint ventures. The control group was made up of Italian and French listed non-financial firms with no interest in joint ventures and of comparable size to the co-venturers in our sample. This kind of analysis removes the biases that could affect the results, showing whether the value relevance effects are driven by the IFRS 11 adoption or from other unaccounted factors that impact firms with or without joint-venture interests. The last three columns in Table 5 present the results. As before, EQ is the dummy variable for the switch period and the dummy variable JV captures the possible differences between the firms with an interest in joint ventures that switched from proportionate to equity and the control group of firms without joint ventures. The coefficients of interest in these models are mainly those of the triple interaction terms EQxJVxBA and EQxJVxBL: the first is negative and significant at the 5 percent level, while the second is positive and significant at the 1% level.

These estimates suggest a significant decline in the value relevance of assets and liabilities of the co-venturer in the switch period that is not shared with the firms in the control group. Therefore, we can confidently infer that this decline is not driven by unaccounted factors influencing all the firms and unrelated to the IFRS11 adoption.

Insert Table 5 about here

We also re-ran our analysis using shares outstanding as the deflator to see if there is any difference from the results of Richardson et al. (2012)[6]. As a final specification check that avoids multicollinearity problems and increases the comparability with the results of Richardson et al. (2012) and Bauman (2003), we estimated a model using the joint venture assets net of liabilities (NETjv) for the entire 2008-2015 period, the 2012-2015 sub-period, and in the difference-in-difference analysis. The results are tabulated in Table 6 and show that the coefficient of the interaction variable EQxNETjv is never significant, consistent with Richardson et al (2012), while the inferences for the other variables are unchanged.

Insert Table 6 about here

Overall, the sensitivity analysis confirms a decrease in value relevance for firms forced, by the issuance of IFRS 11, to change to the equity method to account for their investments in joint ventures.

8. Conclusion

The move from IAS 31, *Interests in Joint Ventures*, to IFRS 11, *Joint Arrangements*, allows us to test the effect on value relevance of the elimination of proportionate consolidation as an option to account for joint ventures. We provide evidence that the mandatory change to the equity method may have forced companies to embrace a non-optimal method for conveying the substance of the operating and financial relationship established between the co-venturer and the majority of its joint ventures. In addition, market participants show some resistance to including in their valuation processes the disaggregated data of joint ventures provided in the notes.

[6] Consistently with Richardson et al. (2012), we find that the coefficients of the interaction variables EQxBA and EQxBL are, respectively, negative and positive, as well as significant at the 10 percent level. Conversely, EQxBAjv and EQxBLjv are, respectively, positive and negative just like in the aforementioned study, but they are not significant using this deflator.

Nevertheless, we should be cautious in drawing conclusions as these results do not automatically let us affirm that firms should have freedom in choosing the reporting method for joint ventures. Given the very different institutional environment of continental Europe and Canada, we cannot directly combine our results with those of Richardson et al. (2012) to draw generalizations. Further research is needed in order to reach a comprehensive view of the effect of the removal of accounting choices for joint ventures, *in primis* also studying the effect of IFRS 11 adoption in common-law, market-based economies, such as the UK.

Moreover, we focused on value relevance as an important aspect of accounting quality, but other dimensions should be taken into account in order to assess the global effect of IFRS 11 adoption. This is a step in the accounting harmonization process that enhances the international comparability of financial statements and, in turn, financial market efficiency. So, the decrease in value relevance of co-venturers' total assets and liabilities, without an increase in the value relevance of joint venture disaggregated data disclosure we found in Italy and France, might be interpreted as a necessary cost for improving financial market efficiency.

Our study adds to the academic research on value relevance of accounting information by referring to a continental European setting and gives the IASB some useful elements for the post-issuance review of IFRS 11. As argued by Barth et al. (2001), although financial statements are not prepared only to satisfy the information needs of equity suppliers, the value relevance of accounting numbers should be included in the set of information that standard-setters take into account in the process of issuing or re-examining accounting standards. Our results may be of interest for financial statement preparers and auditors because they highlight the importance of providing financial statement users with high-quality disclosures.

However, our study has some limitations as it focused on the French and Italian contexts and the first two years of IFRS 11 application. Future research might consider different institutional settings and extend the observed period in order to check to what extent

our results are generalizable. The analysis could be refined further by distinguishing between co-venturers that guarantee joint venture's debts and those which do not, to test whether the value-relevance implications of the change to the equity method significantly differ for the two subgroups. Finally, since financial information is used for different purposes by different groups of a firm's stakeholders (Saccon & Dima, 2015), it would be interesting to study how the forced switch to the equity method has affected the relevance of such information to financial statement users other than equity investors.

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Table 1. Description of variables.

Variable	Description	Measurement
MV	Market value	Co-venturer's market capitalisation three months after the end of the reporting period scaled by beginning of reporting period total assets
NI	Net income	Net income of the co-venturer for the reporting period scaled by beginning of reporting period total assets
Ln(Assets)	Assets	Natural logarithm of co-venturer's total assets
Ln(Liabilities)	Liabilities	Natural logarithm of co-venturer's total liabilities
BA	Total assets	Co-venturer's total assets scaled by beginning of reporting period total assets
BL	Total liabilities	Co-venturer's total liabilities scaled by beginning of reporting period total assets
BA_{jv}	Joint venture assets	Co-venturer's share of joint venture assets scaled by beginning of reporting period co-venturer's total assets
BL_{jv}	Joint venture liabilities	Co-venturer's share of joint venture liabilities scaled by beginning of reporting period co-venturer's total assets
EQ	Switch period dummy	Dummy variable equal to 1 for the period 2014-2015, when it became mandatory to report joint ventures under the equity method
FRENCH	French firms dummy	Dummy variable equal to 1 for the French firms and zero otherwise
JV	Joint Venture dummy	Dummy variable equal to 1 for co-venturer's that switched from proportionate to the equity method and 0 for firms in a control group that was made up of Italian and French non-financial listed firms with no interest in joint ventures
Industry dummies	Industry dummies	Set of dummy variables to control for differences across industries
Year dummies	Year dummies	Set of year dummy variables to control for differences across time
EQxFRENCH	Cross-product term	Switch period dummy x French firms dummy
EQxNI	Cross-product term	Switch period dummy x Net income
EQxBA	Cross-product term	Switch period dummy x Total assets
EQxBL	Cross-product term	Switch period dummy x Total liabilities
EQxBAjv	Cross-product term	Switch period dummy x Joint venture assets
EQxBLjv	Cross-product term	Switch period dummy x Joint venture liabilities
EQxNETjv	Cross-product term	Switch period dummy x (Joint venture assets-Joint venture liabilities)
EQxJVxNI	Cross-product term	Switch period dummy x JV dummy x Net income
EQxJVxBA	Cross-product term	Switch period dummy x JV dummy x Total assets
EQxJVxBL	Cross-product term	Switch period dummy x JV dummy x Total liabilities

Table 2. Descriptive statistics.

Panel A: 2008-2013	**PC 66 firms**	**EM 54 firms**	***t-statistics (p-value)***
	Mean (SD)	**Mean (SD)**	
MV (Market Value)	0.41 (0.33)	0.54 (0.54)	2.48 (0.013)
NI (Net Income)	0.48 (7.65)	1.76 (8.42)	1.82 (0.069)
Ln(Assets)	14.60 (1.97)	14.77 (1.87)	0.87 (0.383)
Ln(Liabilities)	14.22 (2.01)	14.30 (2.03)	0.33 (0.745)
BA (Total Assets)	1.06 (0.60)	1.04 (0.19)	-0.93 (0.353)
BL (Total Liabilities)	0.75 (0.58)	0.68 (0.21)	-1.91 (0.057)
BA_{jv}	0.14 (0.44)	0.11 (0.38)	-0.84 (0.403)
BL_{jv}	0.12 (0.40)	0.12 (0.55)	-0.16 (0.873)

Panel B: 2014-2015	**EM 120 firms**	**Panel C: 2008-2015 Industry distribution**				
	Mean (SD)	**Industry group**	**PC firms**		**EM firms**	
MV (Market Value)	0.61 (0.91)		Number	%	Number	%
NI (Net Income)	1.00 (7.05)	Utilities	10	15%	6	11%
Ln(Assets)	14.67 (1.99)	Industrial	13	20%	19	35%
Ln(Liabilities)	14.26 (2.07)	Mining-Chem	17	26%	8	15%
BA (Total Assets)	1.08 (0.66)	Services	26	39%	21	39%
BL (Total Liabilities)	0.69 (0.38)	Total	66	100%	54	100%
BA_{jv}	0.07 (0.10)					
BL_{jv}	0.05 (0.08)					

Panel D: 2008-2015 Mean (SD)	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
MV	0.42 (0.41)	0.49 (0.42)	0.54 (0.49)	0.39 (0.38)	0.42 (0.41)	0.53 (0.54)	0.62 (1.17)	0.60 (0.56)
NI	1.05 (10.32)	0.88 (6.12)	2.17 (7.37)	1.55 (7.48)	0.69 (7.20)	0.45 (9.05)	1.15 (7.10)	0.84 (7.02)
Ln(Assets)	14.63 (1.85)	14.64 (1.89)	14.68 (1.92)	14.72 (1.93)	14.72 (1.94)	14.65 (1.97)	14.61 (2.02)	14.74 (1.97)
Ln(Liabilities)	14.22 (1.96)	14.18 (2.01)	14.29 (2.02)	14.33 (2.02)	14.28 (2.07)	14.21 (2.05)	14.25 (2.06)	14.27 (2.10)
BA	1.00 (0.10)	1.02 (0.17)	1.17 (0.90)	1.04 (0.18)	1.01 (0.20)	1.00 (0.13)	1.14 (0.91)	1.01 (0.18)
BL	0.67 (0.18)	0.68 (0.19)	0.81 (0.86)	0.72 (0.21)	0.68 (0.19)	0.68 (0.22)	0.73 (0.49)	0.66 (0.21)
BA_{jv}	0.08 (0.09)	0.21 (0.62)	0.23 (0.89)	0.12 (0.37)	0.14 (0.43)	0.12 (0.39)	0.07 (0.10)	0.07 (0.10)
BL_{jv}	0.05 (0.05)	0.18 (0.59)	0.20 (0.87)	0.06 (0.09)	0.09 (0.29)	0.08 (0.23)	0.05 (0.08)	0.05 (0.07)

Notes: PC = proportionate consolidation; EM = equity method; the description of variables is in Table 1.

Table 3. Pearson Correlations.

	MV	NI	BA	BL	BA_{jv}
Panel A: 66 firms PC 2008-2013					
NI	0.355***				
BA	0.400***	0.195***			
BL	0.004	0.033	0.941***		
BA_{jv}	-0.155**	-0.256***	-0.130*	-0.047	
BL_{jv}	-0.150*	-0.263***	-0.132*	-0.043	0.997***
Panel B: 54 firms EM 2008-2013					
NI	-0.040				
BA	-0.015	0.175***			
BL	-0.446***	0.020	0.619***		
BA_{jv}	-0.202***	-0.239***	-0.107	-0.013	
BL_{jv}	-0.154**	-0.273***	-0.085	0.031	0.968***
Panel C: 120 firms EM 2014-2015					
NI	-0.191***				
BA	0.847***	-0.285***			
BL	0.218***	0.102	0.732***		
BA_{jv}	-0.002	-0.470***	-0.080	-0.116	
BL_{jv}	-0.020	-0.186**	-0.141*	-0.131*	0.886***

Notes: PC = proportionate consolidation; EM = equity method; the description of variables is in Table 1. ***, **, and * indicates statistically significant at the 1%, 5%, and 10% levels, respectively.

Table 4. GLS pooling regressions. Clustering by firms with time and industry fixed effects.

Period 2008-2015		**EM-JV firms**		**PC-JV firms**	**PC-JV firms**	**PC-JV firms**
	Pred	**Model (1)**	**Pred**	**Model (1)**	**Model (2)**	**Model (3)**
Intercept		0.405*** (7.23)		0.528*** (3.22)	0.525*** (3.20)	0.524*** (3.20)
NI	+	0.017 (0.76)	+	-0.108 (-0.97)	-0.108 (-0.97)	-0.108 (-0.97)
BA	+	0.599*** (6.66)	+	0.729*** (4.45)	0.730*** (4.43)	0.731*** (4.43)
BL	–	-0.327*** (-4.44)	–	-0.813*** (-5.05)	-0.814*** (-5.03)	-0.814*** (-5.03)
EQ	?	0.116** (2.17)	?	-0.055 (-0.51)	-0.066 (-0.62)	-0.072 (-0.68)
EQxNI	?	0.139 (1.29)	?	0.412*** (2.79)	0.413*** (2.78)	0.411*** (2.77)
EQxBA	No effect	0.355 (1.18)	–	-0.218 (-0.81)	-0.209 (-0.78)	-0.203 (-0.77)
EQxBL	No effect	0.019 (0.27)	+	0.558*** (3.61)	0.547*** (3.55)	0.545*** (3.55)
EQxBAjv			+		-0.056 (-0.00)	
EQxBLjv			–			-0.097 (-0.06)
FRENCH	?	0.167** (2.52)	?	0.175 (1.07)	0.175 (1.07)	0.176 (1.07)
EQxFRENCH	?	-0.060 (-0.92)	?	-0.095 (-0.65)	-0.085 (-0.59)	-0.080 (-0.63)
Industry dummies		Yes		Yes	Yes	Yes
Year dummies		Yes		Yes	Yes	Yes
R^2		0.472		0.504	0.505	0.506
OBS		345		265	265	265

Notes: PC-JV = proportionate consolidation; EM-JV = equity method; the description of variables is in Table 1; ***, **, and * indicates statistically significant at the 1%, 5%, and 10% levels, respectively.

Table 5. Difference in difference analysis, JV firms switching from PC to EM and no JV firms. GLS pooling, clustering by firms with time and industry fixed effects.

Period 2012-2015	**PC-JV firms**	**PC-JV firms**	**PC-JV firms**	**PC-JV & NO-JV firms**	**PC-JV & NO-JV firms**	**PC-JV & NO-JV firms**
	Model (1)	**Model (2)**	**Model (3)**	**Model (1)**	**Model (2)**	**Model (3)**
Intercept	0.360** (2.07)	0.360** (2.05)	0.360** (2.05)	0.391*** (4.64)	0.391*** (4.64)	0.391*** (4.64)
NI	-0.229** (-2.18)	-0.229** (-2.17)	-0.229** (-2.17)	0.125* (1.65)	0.125* (1.65)	0.125* (1.65)
BA	0.760 (1.99)	0.760* (1.98)	0.760* (1.98)	0.630*** (6.26)	0.630*** (6.26)	0.631*** (6.26)
BL	-0.901*** (-2.96)	-0.901*** (-2.94)	-0.901*** (-2.94)	-0.533*** (-6.44)	-0.533*** (-6.44)	-0.533*** (-6.44)
EQ	0.115 (0.96)	0.116 (0.94)	0.117 (0.95)	0.073 (0.68)	0.074 (0.64)	0.075 (0.65)
EQxNI	0.512*** (3.56)	0.510*** (3.43)	0.508*** (3.44)	-0.409** (-1.97)	-0.409** (-1.97)	-0.409** (-1.97)
EQxBA	-0.223 (-0.53)	-0.225 (-0.53)	-0.222 (-0.53)	1.112** (2.44)	1.112** (2.44)	1.112** (2.44)
EQxBL	0.635** (2.46)	0.637** (2.44)	0.635** (2.46)	-0.699** (-2.27)	-0.699** (-2.27)	-0.699** (-2.27)
EQxBAjv		0.008 (0.10)			-0.003 (-0.04)	
EQxBLjv			0.009 (0.14)			0.004 (0.07)
FRENCH	0.192 (1.05)	0.192 (1.04)	0.192 (1.04)	0.021 (0.22)	0.021 (0.22)	0.021 (0.22)
EQxFRENCH	-0.117 (-0.74)	-0.121 (-0.69)	-0.122 (-0.71)	0.102 (1.06)	0.103 (1.11)	0.104 (1.13)
JV				0.075 (0.61)	0.075 (0.61)	0.075 (0.61)
EQxJV				-0.129 (-1.01)	-0.131 (-0.93)	-0.132 (-0.96)
EQxJVxNI				0.588*** (2.59)	0.588** (2.57)	0.587** (2.56)
EQxJVxBA				-1.166** (-2.35)	-1.168** (-2.35)	-1.167** (-2.35)
EQxJVxBL				0.978*** (2.97)	0.978*** (3.01)	0.978*** (2.98)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.529	0.529	0.529	0.358	0.358	0.358
OBS	148	148	148	1624	1624	1624

Notes: PC-JV = proportionate consolidation; NO-JV = control sample of firms without joint ventures; the description of variables is in Table 1; ***, **, and * indicates statistically significant at the 1%, 5%, and 10% levels, respectively.

Table 6. GLS results. Value relevance of joint venture net assets.

	PC-JV firms 2008-2015	PC-JV firms 2012-2015	PC-JV firms & NO-JV firms 2012-2015
	Model (4)	**Model (4)**	**Model (4)**
Intercept	0.528*** (3.22)	0.361** (2.07)	0.391*** (4.63)
NI	-0.108 (-0.97)	-0.229** (-2.17)	0.125* (1.65)
BA	0.728*** (4.44)	0.759* (1.98)	0.630*** (6.26)
BL	-0.813*** (-5.04)	-0.901*** (-2.94)	-0.533*** (-6.44)
EQ	-0.054 (-0.50)	0.116 (0.96)	0.072 (0.67)
EQxNI	0.408*** (2.78)	0.509*** (3.57)	-0.409** (-1.97)
EQxBA	-0.204 (-0.75)	-0.211 (-0.49)	1.112** (2.44)
EQxBL	0.551*** (3.45)	0.629** (2.36)	-0.699** (-2.27)
EQxNETjv	-0.042 (-0.23)	-0.033 (-0.17)	-0.034 (-0.20)
FRENCH	0.175 (1.07)	0.192 (1.04)	0.021 (0.22)
EQxFRENCH	-0.094 (-0.65)	-0.117 (-0.73)	0.104 (1.09)
JV			0.075 (0.61)
EQxJV			-0.128 (-1.01)
EQxJVxNI			0.586** (2.56)
EQxJVxBA			-1.155** (-2.31)
EQxJVxBL			0.972*** (2.93)
Industry dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
R^2	0.500	0.529	0.358
OBS	265	148	1624

Notes: PC-JV = proportionate consolidation; NO-JV = control sample of firms without joint ventures; the description of variables is in Table 1; ***, **, and * indicates statistically significant at the 1%, 5%, and 10% levels, respectively.