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IS THE RELATION BETWEEN NON-CONTROLLING INTERESTS AND PARENT COMPANIES MISLEADING?

ABSTRACT

This paper investigates whether different levels of investor protection affect the equity market's valuation of non-controlling interests (NCIs) in a consolidated corporate entity. Using a set of publicly listed European firms, our findings suggest a positive (negative) association of NCIs with parent companies' share prices in countries with low (high) levels of investor protection. We interpret the findings as evidence that when non-controlling investors are not well-protected, parent companies have an opportunity to extract rents from non-controlling owners, leading to a positive valuation of NCIs' equity. However, in countries where non-controlling investors are well-protected, parent companies are not able to extract rents but still must monitor and govern the related subsidiary; thus, NCIs become a net cost, and the relation inverts.

JEL Classification: M41; M48

Keywords: non-controlling interests; value relevance; investor protection; legal origin; institutional characteristics; parent companies

1. INTRODUCTION

Prior literature on the value relevance of non-controlling interests (NCIs) has primarily focused on single-country settings and has yielded conflicting results. On the one hand, studies of single countries, such as the United States (Swanson, 2010), Taiwan (Hsu et al., 2012), and Germany (Lopes et al., 2013), have reported negative relations between NCIs and share prices. On the other hand, similar single country studies of Spain (Abad et al., 2000) and Hong Kong (So and Smith, 2009) have presented evidence of either a positive or no

relation (So and Smith, 2009). There is little existing theory to explain these conflicting

differences in the valuation of NCIs across countries. In this paper, we explore whether these

mixed results could be explained by the substantial differences in these countries'

institutional environments (Leuz, 2010); particularly different levels of investor protection

across individual countries.

NCI is the portion of consolidated shareholders' equity that is attributable to

shareholders other than those of the parent company. Although reported within the equity

section, NCIs are not actually owned by the parent company's shareholders because the NCIs

own shares of the parent company's subsidiaries. Because non-controlling minority

shareholders do not generally have the ability to monitor their investments directly, parent

companies can more easily extract rents from these shareholders if the law does not properly

protect them. Accordingly, the market value of NCIs could be affected, in part, by minority

shareholder protection in the country and whether the law affords these shareholders

protection from rent extraction. This country level of minority shareholder protection could

influence how investors value a less-than-wholly-owned subsidiary. Consistently, it is

reasonable that shareholder protection laws in an individual country could also influence the

valuation of the parent company. This protection determines the amount of rents that the

parent company can extract from the minority shareholders and pass on to the parent

company's shareholders. Hence, we suggest that the differences in NCI valuation

documented by the prior literature could be driven by differences in country-level investor

protection and law enforcement.

Our hypotheses are based on the "law and finance" literature (La Porta et al., 2002;

Lopez-de-Foronda et al., 2007; Schneyder et al., 2018)[1]. The fundamental assumption in this

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[1] In 2002, four authors from whose 1997 articles this literature departed (Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny) referred to the existence of a "law and finance literature" (La Porta et al., 2002). Five year later, Lopez-de-Foronda et al. (2007) mentioned a "law and finance approach". More recently, Schneyder et al. (2018) referred to it as the "law and finance school".

literature is that the 'law matters' for economic outcomes" (Schneyder et al., 2018, p. 4). This literature is based on the notion of legal origin, distinguishing between "two main secular legal traditions" (La Porta et al., 2008, p. 288): common law and civil law[2]. A further distinction is proposed among three different families of civil law: French, German, and Scandinavian civil law (La Porta et al., 1997, 1998, 2000, 2008; Lopez-de-Foronda et al., 2007). Legal origin is important to this study because it is strongly correlated with the different levels of legal protection enjoyed by investors (Lopez-de-Foronda et al., 2007, p. 1131). Countries with an English legal origin tradition exhibit the highest levels of protection of minority investors and creditors, as well as stricter law enforcement, followed by countries with German or Scandinavian legal origins and, finally, countries with a French legal origin tend to exhibit the lowest levels of shareholder and creditor protection and law enforcement (La Porta et al., 1997, 1998, 2000, 2008).

La Porta et al. (2002) provided evidence of a positive association between shareholder protection and valuation of assets. These researchers also provided evidence of a positive association of cash-flow ownership by the controlling shareholder with asset valuation, particularly in countries characterized by poor investor protection. We attempt to exploit variation in investor protection and law enforcement "through the legal system, meaning both laws and their enforcement" (La Porta et al., 2000, p. 4), across countries in our paper and how investors' value NCIs across countries.

We build on this literature and investigate whether the value equity investors in countries with higher levels of investor protection and stricter law enforcement value the NCI component differently than investors in countries with lower levels of investor protection and weaker law enforcement[3]. International Financial Reporting Standards (IFRS) require all

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[2] La Porta et al. (2008) also mentioned a "socialist" civil law subtradition.
[3] We acknowledge the possibility of having strong investor protection rules but deficient enforcement of such rules. Nevertheless, the prior literature has shown that countries in which there is relatively stronger investor

countries to report NCIs in the equity section of the consolidated balance sheet. However, the claims on and rights of shareholders to these net assets are likely to vary depending on countries' institutional environments. Accordingly, the valuation of the same line item in a financial statement can vary from country to country depending on the nature of the relationship between parent companies and subsidiaries. The controlling shareholder (the parent company) generally incurs the cost of monitoring and governing the subsidiary, imposing a cost on the parent company. If the level of non-controlling investor protection is strong, the parent company is legally bound to share the appropriate amount of equity with the non-controlling investors and might not be able to extract sufficient value to cover the costs that they incur. However, if the level of investor protection is weak, the parent company can appropriate more assets away from the non-controlling shareholders to cover the costs that they incur and even obtain positive net value from their portion of equity.

To test our hypotheses, we examine a group of five European countries that adopted IFRS at the same time (in 2005) but are characterized by three different institutional environments with distinct legal origins: 1) French civil law (France and Greece); 2) Scandinavian/German civil law (Sweden and Germany); and 3) common law (United Kingdom). We examine whether investors in countries with higher levels of investor protection differentially value NCIs compared to investors in countries with lower levels of investor protection for the period of 2008-2013 using a sample of companies reporting NCIs in six consecutive years. We exploit the cross-sectional variation across the countries in legal origin to test our hypotheses. As predicted, we find a negative association between NCIs and share prices in common law and Scandinavian/German civil law countries but a positive association in French-civil law countries. We interpret these findings as supporting our presuppositions that countries with strong (weak) levels of investor protection have a

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protection are also characterized by relatively stricter law enforcement. Hereinafter, we therefore use the term "investor protection" to refer to both "legal protection of investors and law enforceability".

negative (positive) association between NCIs and parent companies' share prices. Our findings are even more pronounced in countries with the strongest level of investor protection.

This study is the first to undertake this type of cross-country analysis. The setting in which the study was conducted enables us to specifically isolate the effect of investor protection laws, given that both the reporting and measurement of NCIs (Hsu et al., 2012; Lopes et al., 2013; Abad et al., 2000) and the accounting standards (So and Smith, 2009) are held constant. Our approach goes beyond Lopes et al. (2013), who only used a sample of German firms that voluntarily adopted IFRS early and examined how the market priced NCIs (when NCIs were reported either as equity or as non-equity).

Our study contributes to the literature in several ways. First, this study is the first to examine the valuation of NCIs conducted in a cross-country setting; to examine differences in valuation across countries; and to provide a possible explanation for the different previous results in prior research. It is the first to leverage the institutional environment to draw conclusions regarding the relationship between NCIs and the market value of parent companies, thereby adding to the literature on the value relevance of NCIs (e.g., So and Smith, 2009; Swanson, 2010; Lopes et al., 2013). Second, we add to the area of research about how a country's institutional environment affects firm value, returns, and the reported accounting information (e.g., Ali and Hwang, 2000; Leuz et al., 2003; Boonlert-U-Thai et al., 2006; Bae and Jeong, 2007; DeFond et al., 2007; Hughes, 2009; Chin et al., 2009; Rahman et al., 2010; Landsman et al., 2012). In addition, we believe that our study may also be valuable for companies and regulatory bodies in light of the awareness that it raises regarding the importance of the context in which accounting information is interpreted and the impacts that the context has on how investors value such information.

The remainder of the paper is structured as follows. Section 2 discusses the earlier literature and presents the hypothesis development. Section 3 describes the research design, data and sample selection procedures. Section 4 provides the results and discussion. Section 5 concludes.

2. RELEVANT LITERATURE AND HYPOTHESES DEVELOPMENT

Research on the value relevance of NCIs is relatively new and not well-developed in the literature. Table 1 provides a summary of the main empirical studies of the value relevance of NCIs. Abad et al. (2000) analysed Spain and found a small but positive association between NCIs and share prices. In Hong Kong, however, So and Smith (2009) revealed a negative association between NCIs and parent company share prices before the transition to IAS-equivalent standards and no association thereafter. In the United States, there is scattered evidence of positive, negative, and zero associations between NCIs and parent company share prices, where the cross-sectional variation is driven by firm size (Swanson, 2010). In both Taiwan and Germany, a negative relationship between NCIs and parent company share prices was found both before and after law changes related to accounting for NCIs (Hsu et al., 2012; Lopes et al., 2013). Schmidt (2013) also noted similar diversity in the results for the valuation of other hybrid instruments. Clearly, prior studies have offered a largely inconsistent results, large variation and several unanswered questions.

[Table 1]

Earlier studies have been quite diverse in their scope, conducted on both local (Abad et al., 2000; Swanson, 2010) and international (Lopes et al., 2013) accounting standards for NCIs. Others have explored the transition from local to international (or equivalent) standards

(So and Smith, 2009; Hsu et al., 2012). All these studies used a diverse range of data methods and datasets and were based on countries with different legal regimes, including French law (Abad et al., 2000), common law (So and Smith, 2009; Swanson, 2010) and German law (Hsu et al., 2012; Lopes et al., 2013).

Prior studies were almost exclusively conducted in a single-country setting resulting in a dearth of cross-country research on this topic. One exception is Lopes and Lourenço (2014), who found empirical evidence that firm-level and country-level variables affect firms' decisions to engage in partial acquisitions. However, they focused on a different empirical question, which was not related to the market value of parent companies. We propose that additional cross-country research is needed to help explain the seemingly inconsistent results reported in the earlier literature.

Over the past several decades, political economy studies have accumulated a wealth of evidence suggesting that countries have different levels of: outside investors' rights and risks of expropriation (La Porta et al., 1997, 1998); private benefits of control (Dyck and Zingales, 2004); rules of law (Kaufman et al., 2003); public enforcement (Djankov et al., 2008); and ownership concentrations (Barth et al., 2008). For instance, studies have found a correlation between the development of capital markets and companies' ownership structures (Pagano and Volpin, 2001) where more developed capital markets can sustain less concentrated ownership structures because the risks of expropriation by managers and controlling shareholders are substantially reduced due to higher-quality legal protection for investors and stricter enforcement of the law (Pagano and Volpin, 2001).

Developed countries continue to show similar patterns of behaviour that can be traced back to their legal origin (e.g., La Porta et al., 1997, 1998, 2006; Leuz et al., 2003; Djankov et al., 2008; Leuz, 2010; Dyck and Zingales, 2004; Boonlert-U-Thai et al., 2006; Hughes, 2009). A well-established literature has found that the common law legal system provides

more protection of shareholder rights than the civil law legal system. Countries in which the law is based on the English common-law tradition tend to exhibit higher levels of protection of minority investors and creditors, as well as stricter law enforcement, compared to countries in which the law is based on the French civil code. Countries in which the legal origins are German or Scandinavian present intermediate levels of shareholders and creditor protection and law enforcement (La Porta et al., 1997, 1998, 2000, 2008). In common law countries, the prevailing corporate conflict is between shareholders and managers, who are expected to run the company for shareholders' benefit. In civil law countries, the main conflict arises between majority dominant shareholders and their minority counterparts (López-de-Foronda et al., 2007).

Distinguishing only between the common law and civil law traditions, La Porta et al. (2002) provided evidence pertaining to the association of investor protection (measured alternatively by a common law dummy and an antidirector rights score) and cash-flow ownership with firm valuation. These authors suggested that outside investors are willing to pay higher prices for assets when the law affords greater protection of their rights. These researchers recognized that when investor rights are well-protected by law, "more of the firm's profits would come back to them as interest or dividends as opposed to being expropriated by the entrepreneur who controls the firm" (La Porta et al., 2002, p. 1147). Using a sample of 539 firms from 27 countries, they found that better shareholder protection is associated with higher valuations of assets; particularly in countries where investor protection is strong. The researchers also found that higher cash-flow ownership by the controlling shareholder is associated with higher valuation, particularly in countries in which investor protection is poor.

The finance literature has shown that large investors with private benefits of control can expropriate minority shareholders, usually when the different types of shareholders' interests

are not aligned (Shleifer and Vishny, 1997). Small, non-controlling, and non-strategic shareholders do not have the power to govern the financial and operating policies of the entity, since each one has a small amount of power and insufficient incentive to engage in monitoring (Kandel et al., 2011). In an environment with low levels of investor protection, the controlling parent might have enough leeway to extract rents from the subsidiary since the expected cost to the parent company of this behaviour is low. Thus, wealth might be redistributed from non-controlling shareholders to controlling shareholders (Ho and Wong, 2001; Villalonga and Amit, 2006, Bozec and Laurin, 2008). This redistribution can be achieved by diverting companies' resources for their own use, transferring assets out of subsidiaries, or committing funds to unprofitable projects that provide private benefits (Lin et al., 2011). Therefore, if the value gained (wealth creation and expropriation) exceeds the value actually allocated to NCI shareholders, one should anticipate a positive relationship between reported NCIs and the valuation of parent companies. NCIs can affect the market value of equity through investor perceptions of the appropriation of resources from such owners.

Based upon the above discussion, our first hypothesis is the following:

H1: NCIs reported in consolidated financial statements are positively associated with the market price of parent companies' shares in countries with low levels of investor protection.

The arguments made above also suggest two additional hypotheses. In environments with high levels of investor protection, parent companies bear the costs of control, but they face greater pressure to share wealth creation with minority shareholders since they cannot easily extract rents from them because of strong legal institutions. This expectation leads

many controlling shareholders to even deem their dealings with minority shareholders as hindrances to an agile response to competitive pressures (Croci and Petmezas, 2010). The potential shift of wealth from controlling shareholders to NCIs – as well as the ability of the latter to demand monitoring and accounting information that is both timely and of high quality, and to free ride at the expense of the former – can be so costly to parent companies that markets discount the parent company's firm value. If the potential benefits of synergies and the additional capital provided by other shareholders do not compensate for the potential costs of control, one should anticipate a negative relationship between NCIs and the market valuation of parent companies. Hence, NCIs can negatively affect the market value of equity through investors' perceptions of the parent company's monitoring. Additionally, the magnitude of agency costs and expected litigation costs (La Porta et al., 2006) from shareholders in a highly protected environment can also justify a negative relationship between NCIs and the market value of the parent company. This discussion leads to our second hypothesis:

H2: NCIs reported in consolidated financial statements are negatively associated with the market price of parent companies' shares in countries with high levels of investor protection.

Not only do we hypothesize a negative relationship between NCIs and the market valuation of parent companies in countries which achieve a certain threshold of high investor protection, but we also expect this relationship to be stronger in countries with higher levels of investor protection. When the protection of investors is greater, the parent company's ability and incentive to expropriate minority shareholders are substantially reduced and can

even be zero. Thus, the magnitude of the negative relationship should be related to the strength of investor protection. This discussion leads to the third hypothesis:

H3: The negative association of NCIs with the market price of parent companies' shares is more pronounced in countries with higher levels of investor protection.

3. RESEARCH DESIGN

3.1 Sample selection, data, and analysis of institutional characteristics

Our sample consists of firms from a set of European countries that adopted IFRS in 2005. We investigate whether investors in countries with higher levels of investor protection and law enforceability value NCIs differently than investors in countries with lower levels of investor protection and law enforceability for the period of 2008 to 2013 using a sample of companies reporting NCIs in six consecutive years. We remove the period of 2005 to 2007 from our sample to avoid any bias sue to the learning process in the adoption of IFRS, to which Kvaal and Nobes (2012) referred in their analysis of IFRS adoption in Australia, the UK, France, Spain, and Germany. These researchers' findings showed that French and Spanish firms made more changes after the transition than at the time of the transition to IFRS, perhaps because of a learning process.

We also note that IFRS 3 – Business Combinations changed in 2008, allowing companies to alter the way in which they measure the NCIs at the acquisition date. While the amount of NCIs was previously determined as the proportional interest in the identifiable assets acquired and liabilities assumed, the new version of IFRS 3 permits a free choice between measuring NCI at its' proportionate share of the acquiree's identifiable net assets excluding NCI's share of goodwill (partial goodwill approach) or at the fair value of net

assets including the NCI's share of goodwill (full goodwill approach). This free choice can be applied by the same entity on a transaction-by-transaction basis, and it can lead to differences in the outcome of NCIs. The amount of NCIs (and the related goodwill figure) are likely to be lower when NCIs are measured at proportionate share of the acquiree's identifiable net assets, rather than at fair value.

However, this option applies only to NCIs resulting from new business combinations and not to NCIs previously recognized. Additionally, there is empirical evidence that only a small number of companies use the option of measuring NCIs at fair value, which is considered an indication of some lack of popularity for this new alternative (Tsalavoutas et al., 2014). André et al. (2016) also documented that there is no significant increase in goodwill levels, at least until 2015, that could arise from the measurement of NCIs at fair value. Therefore, our results are likely not sensitive to this option of measuring NCIs by the partial or full goodwill approaches.

The accounting and market data used in our analysis were collected from the Thompson Worldscope© database. We excluded banks and other financial institutions. To be included in our main sample, we required that each country fulfil all the following requirements: i) have companies reporting positive NCIs every year for the period studied; ii) have non-negative equity attributable to the parent company's shareholders; and iii) have at least 50 firm observations with NCIs each year. Given the nature of this study (value relevance), we found it necessary to require a significant number of observations for each country and analyse a set of companies that usually have NCIs as a permanent source of finance (every year). At the same time, we collected information from companies without NCIs in any year in the sample period in these five countries applying all of the other selection procedures. Table 2 reports the sample selection with the total number of companies, split between those with NCIs (our main sample) in every year and those without NCIs in any year within our sample period.

[Table 2]

Table 3 presents the final sample distribution by country (Panel A) and by industry (Panel B). The first column shows the total number of firm-year observations included in the sample. The other columns reflect data for firm-year observations with and without NCIs reported in their consolidated financial statements. Panel A of Table 3 reveals that of 8,652 firm-year observations, there are 3,538 firm-year observations with NCIs across the five countries. The greatest number of firm-year observations with NCIs comes from France (1,187) followed in by Germany (930), the United Kingdom (720), Sweden (354), and Greece (347). Additionally, the set of companies without NCIs reported in consolidated financial statements during the period under analysis comprises 5,114 firm-year observations across the five countries. The greatest number of firm-year observations without NCIs comes from the United Kingdom (2,598), followed by Germany (869), Sweden (844), France (510), and Greece (293). Panel B of Table 3 shows that in each country, manufacturing is the dominant industry followed by the services industry, except for Greece, in which the second most dominant industry is wholesale and retail trade.

[Table 3]

In untabulated tests, there are statistically significant differences in the proportions of NCI firm-year observations for each country (Chi-square test).. The United Kingdom has the lowest proportion of firms reporting NCIs (22%) followed by Sweden (30%), Germany (52%), Greece (54%), and France (70%). These results are consistent with the findings of

Lopes and Lourenço (2014)[4]. Panel C of Table 3 presents the results of independent sample t-tests to describe differences between firms with and without NCIs. We compare firm size (measured using market capitalization), leverage (debt/equity), and return on equity. The United Kingdom, Germany, and Sweden show significant differences between firms with and without NCIs for all three variables. Similar results are found for France and Greece (except in the case of return on equity). These findings suggest that differences exist between firms with and without NCIs in our sample.

The five countries in our sample have very different institutional characteristics, which permit a robust cross-section analysis. Table 4, Panel A, offers details regarding these differences. The variables are based on Leuz's (2010) summary measures of within-country legal environments. Column 1 presents a classification of countries based on whether they adhere to civil law (Sweden, German, France, and Greece) or common law (United Kingdom). Column 2 indicates the cultural region: English speaking (ES, United Kingdom) or Western Europe (WE, all of the others). The other columns provide scores for each country that capture other institutional characteristics, such as anti-director rights, ex-ante and ex-post control, public enforcement, and the rule of law.

[Table 4]

Table 4, Panel B, presents the scores for the same institutional characteristics but for a greater number of countries (among which are our sampled countries) grouped by legal origins (Leuz, 2010; Djankov et al., 2008). Panel B agrees with Leuz (2010) and Djankov et al. (2008), who noted that when a set of different countries is considered, countries with an

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[4] Lopes and Lourenço (2014) examined firm-level and country-level conditions affecting a company's decision to engage in partial acquisitions through the existence or non-existence of NCIs in 14 European countries. They found that size, leverage, profitability, cross-listing, internationalization and institutional characteristics play important roles in explaining the likelihood of engaging in a partial acquisition. We use this paper to justify the determinants of the choice of reporting NCIs and to apply the Heckman procedure (bias selection).

English (common law) legal origin tend to have, on average, stronger shareholder and creditor rights (antidirectors' rights) and stronger private and public protection against self-dealing (ex-ante and ex-post control). In contrast, the averages of the rule of law index and of the public enforcement of self-dealing tend to be higher in countries belonging to German and Scandinavian legal origins. Panel B shows that notwithstanding the robustness of institutional clusters around the world, scores on individual institutional characteristics can be higher or lower for a specific country or for the cluster in which a specific country is included. Although recent studies have continued to use legal origin as a proxy for investor protection (e.g., Chin et al., 2009; Ferreira et al., 2012; Hail, 2013; Hong, 2013), other institutional characteristics linked to investor protection beyond legal origin are important as well, and they will be included in our analysis.

3.2 Research methodology

Following the prior literature on the value relevance of accounting numbers, we developed a regression model based on Ohlson's (1995) equity valuation model[5]. To test hypotheses 1 and 2, we add NCIs to the traditional model and measure book value of equity without NCIs. The first model is the following:

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 NI_{it} + \alpha_3 LOSS_{it} + \alpha_4 LOSS_{it} xNI_{it} + \alpha_5 NCI_{it} + \alpha_n FIRM\_CONTROLS_{it} + \varepsilon_{it} \quad (1)$$

MV is the market value of equity at fiscal year-end[6]; BV is the book value of equity attributable to the parent company shareholders; and *NI is* net income attributable to the

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[5] Although this valuation model does not accurately portray all aspects of real firms, it is the basis for empirical accounting capital markets research and is an established, parsimonious, and well-accepted valuation theory (Barth and Clinch, 2009).

[6] The price of parent company shares three months after fiscal year end was also used as a dependent variable. The results (not tabulated) and the main conclusions remain similar.

parent company shareholders. To mitigate scale effect problems, the variables are deflated by the number of shares outstanding, resulting in a per share basis analysis.

LOSS is an indicator variable that assumes the value of 1 for companies with negative *NI* and 0 otherwise. The coefficient of the interaction term *NI x LOSS* reflects how the market's valuation of losses differs from its valuation of profits. To the extent that losses are more weakly associated with a company's market value than profits, we expect that $\alpha_3 < 0$. Some studies (e.g. Rees and Thomas, 2010) have also included the interaction of earnings with a binary variable for cases in which earnings are negative, and so do we.

The main variable of interest in this study, *NCI*, is defined as the amount of subsidiary equity not attributable, either directly or indirectly, to the parent company, and it represents the amount displayed as equity in the consolidated financial statements at fiscal year-end. If the market values the NCIs, the coefficient on the variable NCI, α_5, will be statistically significant and different from zero. If NCIs have a positive impact on firm value, the coefficient on NCI, α_5, will be positive; if NCIs have a negative impact on firm value, the coefficient on NCI, α_5, will be negative.

We also include a set of firm-specific control variables (FIRM_CONTROLS). Auditing (*AUD*) and cross-listing (*XLIST*) have often been used in the previous literature to control for law enforcement and financing growth opportunities. Auditors can be used for better law enforcement, and they can reduce information asymmetry (e.g., Barth et al., 2008; Khalil et al., 2008). Cross-listing on other stock exchanges is often undertaken by companies domiciled in countries with poor investor protection as a sign of a better commitment to protect their investors and to mitigate the constraints that they face when attempting to finance growth opportunities externally (e.g., Reese and Weisbach, 2002; O'Connor, 2006; Bae and Jeong, 2007). Cross-listing is also a proxy for monitoring effects with a positive influence on value relevance (e.g., Bae and Jeong, 2007). We incorporate *AUD* and *XLIST* as

binary variables that assume the value of 1 for companies audited by a Big 4 audit firm and for companies listed on more than one stock exchange, respectively, and 0 otherwise. We also include industry (*IND*) and year (*YEAR*) fixed effects.

Our sample is comprised of listed firms that voluntarily engage in partial acquisitions (recognizing NCIs) and therefore do not represent a random selection of all listed firms in each country. Given that we examine the value relevance of NCIs for firms that voluntarily engage in partial acquisitions, it is possible that our results are affected by self-selection bias. To control for the effects of self-selection bias, we implement the two-stage switching regression procedure suggested by Heckman (1976, 1979) and Lee (1976, 1978).

This econometric procedure offers a means of correcting for non-randomly selected samples. The procedure has been applied in several studies of the value relevance of accounting information (e.g., Hung and Subramanyam, 2007; Lourenço et al., 2014) and of the decision to engage in partial acquisitions (e.g., Lopes et al., 2013; Lin et al., 2018) and in other accounting studies. These studies use a broad set of firm characteristics likely to influence the results of non-random sample selection (e.g., Drake et al. 2014; Beuselinck et al., 2017). In all of these studies, the inverse Mills ratio is used to alleviate the effects of any potential selection bias.

The inverse Mills ratio is a control variable that captures all unobserved differences between two groups of firms due to self-selection (in this case, firms with and without non-controlling interests). This variable is computed in the first stage of the Heckman procedure (in which we model the firms' decisions to engage in partial acquisitions and thus report non-controlling interests), and it is added in the second stage (equity valuation model). This variable, when included in the equity valuation Model 1, will remove the variance from the error term due to self-selection, so the coefficients on the other variables included in the model can be correctly estimated.

In the first stage of the two-stage switching regression procedure, we model our sample firms' decisions to engage in partial acquisitions (recognizing NCI). In the second stage, we correct for self-selection by incorporating the inverse Mills ratio computed in the first stage as an additional explanatory variable (FIRM_CONTROLS) in the price regressions in our value relevance analysis.

To analyse our sample firms' decisions to engage in partial acquisitions (first stage of the Heckman procedure), we use a binary logit model in which the dependent variable equals 1 for firms with NCIs and 0 for the firms that do not rely on NCIs as a source of finance for the group's activities. Following prior studies, such as Lopes and Lourenço (2014) and Lopes et al. (2013), we predict that the decision to engage in partial acquisitions (recognizing NCI) depends on firm characteristics (size, leverage, profitability, and industry). More formally, we begin by estimating the following logit model:

$$NCI\_FIN_{it} = \beta_0 + \beta_1 ROE_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it} \qquad (2)$$

where *NCI_FIN* is a binary variable that assumes the value of 1 for firms reporting NCIs every year during the entire sample period and 0 for firms that do not report NCIs; *ROE* is the company's return on equity; *LEV* is the company's leverage, measured as total liabilities divided by total assets; and *SIZE* is the natural logarithm of market capitalization. This model is estimated with industry and year fixed effects.

In this first stage of the Heckman procedure, we estimate the inverse Mills ratio by using a logit model. We are aware that some other studies use a probit model, instead of a logit model, but both models predict the probability of the dependent variable to be one. The difference between these two models relies on the statistical distribution that is used: standardized normal (probit) or logistic (logit). Having in mind the behaviour of the

distributions, the predicted values are very close in the central tendency of the distributions; only in the extremes the differences can appear but they are not much significant. Thus, the results would be not strongly different. However, in order to clarify this, we also estimated Equation (2) by using a probit model and the conclusions of this study remain the same.

After running Model 2, the inverse Mills ratio is computed and included as an additional explanatory variable in Model 1 (FIRM_CONTROLS). Hence, all of the analyses performed with Model 1, in the second stage of the Heckman procedure, control for the self-selection bias that can result from voluntarily engaging in partial acquisitions.

To test hypotheses 1 and 2, the Heckman procedure is applied separately for each of the five countries under analysis: France, Greece, Sweden, Germany, and the United Kingdom. The results of the OLS regression based on Model 1 allow us to identify the sign of the coefficient on the variable *NCI*, α_5, and compare it amongst the different countries.

We expect opposite signs for α_5 in the cases of France/Greece (French civil law) and the United Kingdom (common law). We also expect that Sweden and Germany (Scandinavian/German civil law) follow the behaviour of common law countries. Although they are usually positioned in an intermediate place in terms of investor protection (La Porta et al, 1998), they show the highest scores regarding public enforcement and high rule of law indices (Leuz, 2010) (see Panel A, Table 4). Therefore, we expect a negative sign for α_5 in the cases of Sweden, Germany, and the United Kingdom and a positive sign in the cases of France and Greece.

In addition to the analysis by country, we also perform an analysis with the pooled sample using the following models:

$$NCI\_FIN_{it} = \beta_0 + \beta_1 ROE_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_3 PROT_{it} + \beta_4 ENF_{it} + \varepsilon_{it} \quad (3)$$

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 NI_{it} + \alpha_3 LOSS_{it} + \alpha_4 LOSS_{it} xNI_{it} + \alpha_5 NCI_{it} + \alpha_6 HIGH_{it} + \alpha_7 HIGH_{it} xNCI_{it} +$$

$$\alpha_n FIRM\_CONTROLS + \varepsilon_{it} \qquad (4)$$

In Model 3, PROT and ENF are two country-specific variables[7]. PROT is an index of anti-director rights (an aggregate measure of minority shareholders' rights), and ENF pertains to public enforcement of anti-self-dealing provisions, and it measures available fines and sanctions from public enforcers, as defined by Leuz (2010) and Djankov et al. (2008). Although, as mentioned in the introduction, the prior literature has shown that countries in which there is relatively stronger investor protection are also characterized by a relatively higher level of law enforcement, we acknowledge the possibility of having relatively stronger investor protection rules but relatively weaker enforcement of such rules. Consequently, different valuations of NCIs might be due not only to the investor protection rules but also to differences in the degree of enforcement of such rules. We capture these possible effects using PROT and ENF in the sample with all of the countries. ROE, LEV, and SIZE are the same firm variables as used in Model 2.

In Model 4, the variable *HIGH* is a binary variable that assumes the value of 1 for firms from countries with a higher level of investor protection, namely, the Scandinavian/German civil-law countries (Sweden and German) and the common-law countries (the United Kingdom) and 0 otherwise. The French-civil law countries (with the lowest level investor protection) serve as the baseline category to which the other countries (higher investor protection) are compared, and French-civil law countries assume a *HIGH* value of 0. We estimate this model with industry and year fixed effects and the same firm control variables

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[7] An additional analysis was performed to include all of the other selected institutional characteristics by country (see Table 4). We run the same Heckman specification pooling all observations, using all of the indices presented in Table 4, panel A (anti-director rights, ex-ante control, ex-post control, public enforcement and rule of law), to capture omitted variables associated with other institutional factors when pooling firm-year observations from different countries. However, due to the high correlation between all of the scores, we add two at a time. The results (not tabulated) are similar regardless of the scores included.

used in Model 1. We also include in Model 4 the inverse Mills ratio computed based on

Model 3 as an additional firm control variable (Heckman procedure).

We expect α_5 to be positive and statistically significant and α_7 to be negative,

statistically significant, and higher than α_5 in absolute terms, which means that the association

between NCI and MV is positive in the sub-sample of firms from countries with low levels of

investor protection (hypothesis 1) and it is negative in the sub-sample of firms from countries

with high levels of investor protection (hypotheses 2), being the coefficient of the variable

NCI for this last group of firms given by the difference between α_7 and α_5.

To test hypothesis 3, assessing whether the negative association of NCIs with the

market price of parent companies' shares is more pronounced in countries with higher levels

of investor protection, we also apply the Heckman procedure to the entire sample. In the first

stage of this procedure, we use again Model 3. In the second stage, we extend Model 4 and

end up with the following Model 5:

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 NI_{it} + \alpha_3 LOSS_{it} + \alpha_4 LOSS_{it}xNI_{it} + \alpha_5 NCI_{it} + \alpha_6 HIGH_{it} + \alpha_7 HIGH_{it}xNCI_{it} +$$
$$\alpha_8 HIGHEST_{it} + \alpha_9 HIGHEST_{it}xNCI_{it} + \alpha_n FIRM\_CONTROLS + \varepsilon_{it} \qquad (5)$$

where the variable *HIGHEST* is a binary variable that assumes the value of 1 for firms

from countries with the highest level of investor protection, specifically the United Kingdom,

and 0 otherwise. The other variables remain as in Model 4. We estimate this model with

industry and year fixed effects, using the same firm control variables used in Models 1 and 4

and including the inverse Mills ratio computed based on Model 3.

We expect the coefficient on *HIGHESTxNCI*, α_9, to be negative, significantly different

from zero, and higher in absolute terms than α_5 and α_7 (consistent with H3). Such a

relationship would confirm that the negative association of NCIs with the prices of parent

companies' shares is more pronounced in countries with the highest level of investor protection.

4. FINDINGS AND DISCUSSION

4.1 Descriptive statistics and correlations

Table 5 presents descriptive statistics. Panels A, B, and C show data for French civil-law countries (France and Greece), Scandinavian/German law countries (Germany and Sweden), and the common law country (the United Kingdom), respectively. The mean and median of the market value per share (MV) are substantially higher than the book value (BV) in all of the countries (except for Greece). There are differences in the mean values of all of the variables between countries, and the median is lower than the mean for most of the continuous variables in each country, revealing distributions that are skewed to the left.

[Table 5]

Table 6 presents partial correlations to explore whether significant relations exist between NCI and MV in all countries. We present the partial correlation of these two variables after controlling for: i) book value of the equity (BV) and income (NI); and ii) all of the variables included in the OLS regressions (Models 1, 4, and 5). The coefficient for NCI is positive in the cases of France and Greece and negative in the United Kingdom, Sweden, and Germany. These findings are consistent with our hypotheses. We also calculate the variance inflation factors (VIFs) for all variables included in the OLS regressions. None of the maximum VIFs exceeds 6, suggesting that multicollinearity is not a serious problem[8].

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[8] As a rule of thumb, one can consider multicollinearity as harmful when the VIF exceeds 10 (Johnston, 1984).

[Table 6]

4.2 Regression results and discussion

Before running our OLS regressions using Model 1 (hypotheses 1 and 2) separately for each country and Models 4 and 5 for the pooled sample, we run the binary logistic regressions presented in Models 2 and 3. The results of this intermediate step are included in Table 7. Consistent with findings for a German sample (Lopes et al., 2013) and a European sample (Lopes and Lourenço, 2014), we find a positive association between the variables SIZE and LEV and the probability of reporting NCIs. The estimated value from the binary logistic regression is used to generate the inverse Mills ratio for each observation. This ratio is then added to Model 1 as a new control variable, as mentioned in the research methodology section.

[Table 7]

Table 8 then reports the results of tests of H1 and H2 (Models 1 and 4), with corrections for heteroscedasticity (White test) and after assuring that all of the coefficients are at conventional levels after estimating VIF and Durbin-Watson statistics.

[Table 8]

The empirical results highlight the value relevance of summary accounting measures. The coefficient estimates for the variables BV and NI and for the interaction variable LOSS with NI are consistent with those reported in earlier value relevance studies. It seems that the firms' BV and NI are statistically and positively related to the market value of the firm's

equity. However, similar to the findings of prior research (e.g. Hayn, 1995; Rees and Thomas, 2010), the market valuation of losses is significantly lower than the market valuation of profits.

The use of a model that distinguishes between profitable and nonprofitable firms does not influence our results. We performed sensitivity analyses excluding the variable LOSS and the interaction term of LOSS with Net Income, and the results remain unchanged.

The results of testing Model 1 by country show that the variable NCI has explanatory power for the prices of parent companies' shares for all countries (all the coefficients on NCIs, α_5, are significantly different from zero). More precisely, as predicted, NCIs are statistically significantly positive in France ($\alpha_4 = 0.640$; p-value < 0.01) and Greece ($\alpha_4 = 0.999$; p-value < 0.01). In contrast, NCIs are statistically significantly negative in Sweden ($\alpha_4 = -2.248$; p-value < 0.05), Germany ($\alpha_4 = -1.003$; p-value < 0.01), and the United Kingdom ($\alpha_4 = -2.254$; p-value < 0.01), in line with hypotheses 1 and 2.

We find a positive relationship between reported NCIs and the value of parent companies' shares in countries in which the institutional characteristics favour weaker investor protection. Our findings suggest that the amount of NCI is positively associated with share prices in France and Greece. Consequently, it seems that parent companies' ability to control NCIs has positive value. These findings justify why a greater number of companies in French-civil law countries use NCIs as alternative sources of equity financing and why most subsidiaries are partially owned by parent companies. H1 is supported.

In countries with higher investor protection, as argued above, we find the opposite result. Our findings for the United Kingdom are consistent with the idea that, in common-law countries – where institutional characteristics provide stronger investor protection – the cost of control rests solely with the parent company, and benefits of business combinations are

shared with NCIs. Our findings regarding the value relevance of NCIs in Germany[9] and

Sweden are similar to those of the United Kingdom. In both cases, there is a negative

association between NCIs and the prices of parent company shares. These results are in line

with Croci and Petmezas (2010), who stated that higher levels of investor protection favour

minority interests. Thus, it seems that investors expect the potential costs of control to exceed

any wealth appropriation, which explains why the market reacts negatively to reported NCIs

in common-law countries. Our results could explain why fewer companies in the United

Kingdom use NCIs as alternative sources to finance equity and why most subsidiaries are

wholly owned by parent companies. H2 is also supported.

Results from testing Model 4 confirm our expectations, and both H1 and H2 are

simultaneously supported. The coefficient on NCI (our benchmark for French civil law

countries, with low investor protection) is statistically positive, as predicted ($\alpha_5 = 0.522$; p-

value < 0.000). The coefficient on the interaction for countries with high investor protection

(HIGHxNCI) is negative and statistically significant ($\alpha_7 = -0.806$; p-value < 0.05), which

means that the variable NCI impacts differently on MV (dependent variable), depending on

whether the dummy HIGH equals 1 or 0. If HIGH is zero (France and Greece), the investor

protection is low and the positive slope of α_5 suggests that the relationship between NCI and

MV is positive ($\alpha_5 = 0.522$). When HIGH is 1, countries with high investor protection are

grouped, and the interaction HIGHxNCI ($\alpha_7 = -0.806$) is negative, inverting the relationship

of NCI and MV (the variation of 1 in NCI has an impact of -0.284 (=0.522-0.806) in the

dependent variable). Additional tests (not tabulated) dividing the sample into two

independent groups (France/Greece and United Kingdom/Germany/Sweden) and running the

same Model 1 in the separate groups produce similar results. The support of both H1 and H2

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[9] This finding for German firms corroborates prior findings reported by Lopes et al. (2013), who demonstrated that investors did not change their perceptions of NCIs when they were reported within equity, rather than outside of equity.

suggests the importance of investor protection when pricing the equity of subsidiaries attributable to shareholders other than those from parent companies.

Table 9 reports results for Model 5 (hypothesis 3). This table documents that the negative association of NCIs with the prices of parent companies' shares is more pronounced in countries with the highest level of investor protection, specifically, in our sample, only the United Kingdom.

[Table 9]

The estimate for the coefficient on NCIs, α_5, our initial benchmark, remains positive as before and statistically significant at the 1% level. Indeed, the estimate for the coefficient α_7, on the interaction of a high level of investor protection (HIGH) and NCIs, HIGHxNCI, allows us to differentiate the impact of NCIs on MV in two different sets of countries, as before. When HIGH (Sweden, German, UK) is 1, the estimate for the interaction term HIGHxNCI is statistically significant and negative ($\alpha_7 = -0.576$; p-value < 0.05), indicating that, in countries with a high level of investor protection, when NCIs increase by 1 the expected variation on MV is -0.031 (=0.545-0.576). The impact of NCI when countries with a low level of protection are considered (France, Greece) is positive, and the estimate for the coefficient is 0.545. These findings confirm our previous results about the inverse relationship of NCIs and MV in countries with high *versus* low level of investor protection (hypotheses 1 and 2).

However, we now (in Model 5) added the interaction of the highest level of investor protection (HIGHEST) and NCIs, HIGHESTxNCI, which allow us to differentiate the impact of NCIs on MV in the country with the highest level of protection (in our data, the UK), from the one in other countries with a high (but not the highest) level of investor protection

(Sweden and Germany). When HIGHEST (the UK) is 1, the estimate for the interaction term HIGHESTxNCI is statistically significant and negative ($\alpha_9 = -8.527$; p-value < 0.05), indicating that in the country with the highest level of investor protection (the UK), when NCI increases by 1 the expected variation on MV is -8.558 (=0.545-0.576-8.527). Thus, matched to the other countries, the impact of NCIs on MV is highest (in absolute terms) in the UK and remains negative, when compared to Sweden and German (hypothesis 3). Otherwise, compared to France and Greece, the impact is greater but with the opposite sign.

The overall results suggest that in the case of parent companies located in countries with higher investor protection, the relationship between NCIs and MV is negative, but this negative relationship is markedly higher in the UK, which has the highest level of protection. The magnitude of the coefficient does not mean that there is only one influence on the MV because the regression includes several other variables that also influence the dependent variable. The results suggest only that higher investor protection environments, especially the highest ones, can drive the negative relationship of NCIs with MV. Scores for other institutional characteristics beyond legal origin are included, as before. Specifically, the scores are included in the inverse Mills ratio computed with pooled observations.

The findings provide strong evidence supporting the idea that the negative association between NCIs and firm value is more pronounced in countries with the highest level of investor protection; in our case, the UK. H3 is supported.

Finally, we report the results of an additional examination regarding whether differences exist between Greece and France. These two countries are included together with many countries in the same legal tradition (see Panel B, Table 4), and both have the same score for Public Enforcement when individually considered (see Panel B, Table A). However, their single scores regarding anti-director rights and the rule of law are different (see Panel B, Table A) and suggest that France presents a higher level of outside investor protection, as

well as superior overall legal quality. To examine whether differences between these two countries exist, we only selected the observations from Greece and France and used the exact same methodology as in the previous analyses. We ran the same binary logit regression used in the first stage, calculated the new inverse Mills ratio, and performed the OLS regression including this variable, as well as a binary variable (assuming 1 for Greek observations) and its interaction with the variable NCI. The results (not tabulated) show that the main variable NCI continues to have a positive association with the market price of parent companies' shares and that this association is neither mitigated nor intensified in the case of Greece.

5. SUMMARY AND CONCLUSIONS

This paper investigates whether different levels of investor protection affect the association of NCIs with the prices of parent companies' shares. We use a set of European, publicly listed firms and find a positive association between NCIs and the prices of parent companies' shares in the cases of France and Greece and a negative association in the cases of United Kingdom, Germany, and Sweden. The findings suggest that there is a positive association of NCIs with parent companies' share prices in countries with the lowest level of investor protection and a negative association in countries with higher levels. Moreover, we show that the negative association between NCIs and the price of parent companies' shares is more pronounced in the country with the highest level of investor protection (United Kingdom).

Our study extends the emerging literature on NCIs by providing an explanation for earlier mixed findings on the valuation of NCIs, and it shows the need to control for the ability to expropriate NCIs. We extend the insights of La Porta et al. (2002) to the area of financial reporting. These authors concluded that, for companies with a controlling shareholder, Tobin's q rises significantly as one moves from civil law countries to common

law countries, *ceteris paribus*. We offer evidence for how these characteristics are related to the way in which accounting numbers are perceived by the share market.

Among the implications of our study, we would like to emphasize the awareness that it is likely to raise about the importance of the context in which accounting information is interpreted and the impacts that this context has on how investors value such information. There are also implications for research. In light of our results, the claims that single-country analyses are of limited importance seem to be mistaken. In contrast, we firmly believe that in-depth analyses of individual countries should be encouraged. This type of analysis should be part of a collective effort that, while consisting of a series of single-country studies, would provide a complete and unabridged understanding of the institutional realities.

Our study also presents practical implications for companies and for regulatory bodies. Companies would be well-advised to consider the national contexts in relation to the information that they disclose and the way it is interpreted and valued by investors. Regulatory bodies concerned with the harmonization of financial reporting should contemplate the influence of the institutional backgrounds of the countries that they are considering.

Our paper also has several limitations. One is that it analyses only five countries, all from the EU; allowing further research on a greater number of countries with different standards and from other geo-economic areas. Thus, our findings might not be generalizable to other countries applying different standards or having different experiences in the adoption of IFRS. Next, is the nature of the Heckman two-step procedure; which does not offer a perfect solution to self-selection bias. Thus, care is required when analysing the results. The Heckman procedure depends heavily on the quality and the appropriateness of the data available for the selection model (first stage). If the amount of variance explained is relatively

low, then there is a possibility that selection bias in the outcomes equation (second stage) might not be detected. The Heckman procedure is also very sensitive to whether the selection model is correctly specified. If there is an omitted variable in this model (first stage), the inverse Mills ratio coefficient used in the valuation model (second stage) is biased, which could lead to inaccurate findings and biased estimates of the parameters used in the valuation model. Therefore, other possible reasons for a firm to engage or not in partial acquisitions (and have or not have controlling interests) should be considered. For example, Albuquerque and Wang (2008, p. 17) acknowledged that parent companies can hold subsidiaries for "nonpecuniary private benefits in the form of empire building or name recognition from managing larger firms" or the desire of founding family members to bequeath an "empire" bearing their name to their progeny. Further research could seek to incorporate these aspects, although it might be difficult from an empirical point of view.

This study could also be criticized for disregarding the possibility of divergence between voting rights (control) and cash flow rights (ownership), which seems to be a relevant aspect since the level of resource appropriation by controlling shareholders is influenced by the magnitude of this divergence (Shleifer and Vishny, 1997; La Porta et al., 1999). Claessens et al. (1999, 2002) were able to estimate the difference between cash flow rights and voting rights of firms in several East Asian countries. Claessens et al. (1999) examined the relationship of cash flow rights and voting rights with the valuation of firms. The findings of this latter study suggested a negative effect of voting rights on valuation but a positive effect of cash-flow rights.

Our study focuses on the valuation of the controlling parent companies of the companies for which one would like to have information about the difference between cash flow rights and voting rights. The NCI ownership variable used in this study pertains to numerous subsidiaries, all included in the consolidated financial statements of the parent

company. Many of them can be unlisted companies, regarding which it would be very difficult for an investor in the parent company to collect information about the difference between cash flow and voting rights. In any case, it would be very difficult for a potential investor examining the consolidated statement of financial position to know exactly whether the amount of NCIs pertains to a large number of subsidiaries in each of which the cash flow rights are small or a small number of subsidiaries in each of which the cash flow rights are larger. In other words, it would be difficult for such an investor to collect the information required to incorporate into the valuation the possible effects of the wedge between voting and cash flow rights.

FUNDING SOURCES

REFERENCES

Abad C, Garcia-Bordolla A, Garrod N, Laffarga J, Larran M. and Pinero J (2000) An evaluation of the value relevance of consolidated versus unconsolidated accounting information: evidence from quoted Spanish firms. *Journal of International Financial Management and Accounting* 11: 156-177.

Albuquerque R and Wang N (2008) Agency conflicts, investment, and asset pricing. *Journal of Finance* 63:1-39.

Ali A and Hwang L (2000) Country-specific factors related to financial reporting and the value relevance of accounting data. *Journal of Accounting Research* 38: 1-21.

André P, Filip A and Paugam L (2016) Examining the Patterns of Goodwill Impairments in Europe and the US. *Accounting in Europe* 13(3): 329-352.

Bae K and Jeong SW (2007) The Value-relevance of earnings and book value, ownership structure, and business group affiliation: evidence from Korean business groups. *Journal of Business Finance and Accounting* 34: 740-766.

Barth M and Clinch G (2009) Scale effects in capital markets-based accounting research. *Journal of Business Finance and Accounting* 36 (3/4): 253-288.

Barth M, Landsman W and Lang M (2008) International accounting standards and accounting quality. *Journal of Accounting Research* 46: 467–498.

Beuselinck C, Blanco B and García Lara, JM (2017) The Role of Foreign Shareholders in Disciplining Financial Reporting. *Journal of Business Finance & Accounting* 44(5): 558-592.

Boonlert-U-Thai K, Meek G and Nabar S (2006) Earnings attributes and investor-protection: International evidence. *The International Journal of Accounting* 41:327-357.

Bozec Y and Laurin C (2008) Large shareholder entrenchment and performance: empirical evidence from Canada. *Journal of Business Finance and Accounting* 35 (1/2): 25-49.

Chin C-H, Chen Y-J and Hsieh T-S (2009) International Diversification, Ownership Structure, Legal origin, and Earnings Management: Evidence from Taiwan. *Journal of Accounting, Auditing and Finance* 24(2): 233-262.

Claessens S, Djankov S and Lang LHP (2000) The Separation of Ownership and Control in East Asian Corporations. *Journal of Financial Economics* 58(1/2): 81-112.

Claessens S, Djankov S, Fan J and Lang L, (1999) Expropriation of minority shareholders: evidence from East Asia. *Policy Research paper 2088*. World Bank, Washington DC.

Croci E and Petmezas D (2010) Minority shareholders' wealth effects and stock market development: Evidence from increase-in-ownership M&As. *Journal of Banking and Finance* 34: 681-694.

DeFond M, Hung M and Trezevan R (2007) Investor protection and the information content of annual earnings announcements: International evidence. *Journal of Accounting and Economics* 43: 37-67.

Djankov S, La Porta R, Lopez-de-Silanes F and Sheleifer A (2008) The law and economics of self-dealing. *Journal of Financial Economics* 88: 430-465.

Drake MS, Guest NM and Twedt BJ (2014) The Media and Mispricing: The role of the business press in the pricing of the accounting information. *The Accounting Review* 89(5): 1673-1701.

Dyck A and Zingales L (2004) Private benefits of control: an international comparison. *The Journal of Finance* 59(2): 537-600.

Ferreira M, Keswani A, Miguel A and Ramos S (2012) The Determinants of Mutual Fund Performance: A Cross-Country Study. *Review of Financial Studies* 17(2): 483-525.

Hail L (2013) Financial reporting: relevance Lost or Relevance regained? *Accounting and Business Research* 43(4): 329-358.

Hayn C (1995) The Information Content of Losses. *Journal of Accounting and Economics* 20: 25–153.

Heckman J (1976) The common structure of statistical models of truncation, sample selection, and limited dependent variables and a simple estimator for such models. *Annals of Economic and Social Measurement* 5: 475–492.

Heckman J (1979) The sample selection bias as a specification error. *Econometrica* 47: 153-162.

Ho S and Wong KS (2001) A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation* 10(2): 139-156.

Hong H (2013) Does Mandatory Adoption of International Financial Reporting Standards Decrease the Voting Premium for Dual-Class Shares? *The Accounting Review* 88(4): 1289-1325.

Hsu AW, Duh R and Cheng K (2012) Does the Control-based Approach to Consolidated Statements Better Reflect Market Value than the Ownership-based Approach? *The International Journal of Accounting* 47: 198-225.

Hughes J (2009) Corporate value, ultimate control and law protection for investors in Western Europe. *Management Accounting Research* 20: 41-52.

Hung M and Subramanyam K (2007) Financial statement effects of adopting international accounting standards: the case of Germany. *Review of Accounting Studies* 12: 623-657.

International Accounting Standards Board (2000) IAS 27 - Consolidated and Separate Financial Statements.

International Accounting Standards Board (2003) IAS 27 (revised) - Consolidated and Separate Financial Statements.

International Accounting Standards Board (2008) IAS 27 (revised) - Consolidated and Separate Financial Statements.

International Accounting Standards Board (2008) IAS 27 Separate Financial Statements.

International Accounting Standards Board (2011a) IAS 27 Separate Financial Statements.

International Accounting Standards Board (2011b) IFRS 10 Consolidated Financial Statements

International Accounting Standards Board (2013) Discussion Paper (DP) "A Review of the Conceptual Framework for Financial Reporting"

International Accounting Standards Committee (1989) IAS 27 – Consolidated Financial Statements and Accounting for Investments in Subsidiaries

Johnston J (1984) *Econometric Methods* 3rd ed. NY: McGraw-Hill higher education.

Kandel E, Massa M and Simonov A (2011) Do small shareholders count? *Journal of Financial Economics* 101(3): 641-665.

Kaufman D, Kraay A and Mastruzzi M (2003) Governance matters III: update governance indicators for 1996-02, Available at http://129.3.20.41/eps/dev/papers/0308/0308001.pdf (accessed April 30 2012).

Khalil S, Magnan M and Cohen, J (2008) Dual-class shares and audit pricing: Evidence from the Canadian markets. *Auditing* 27(2): 199-216.

Kvaal E and Nobes CW (2012) IFRS policy changes and the continuation of national patterns of IFRS practices. *European Accounting Review* 21(2), 343-371.

La Porta R, Lopez-de-Silanes F and Shleifer A (1999) Corporate Ownership around the World. *Journal of Finance* 54(2), 471-518.

La Porta R, Lopez-de-Silanes F and Shleifer A (2000) Investor protection and corporate governance. *Journal of Financial Economics* 59: 3-27.

La Porta R, Lopez-de-Silanes F and Shleifer A (2006) What works in securities laws? *Journal of Finance* 61: 1-32.

La Porta R, Lopez-de-Silanes F and Shleifer A (2008) The Economic Consequences of Legal Origins. *Journal of Economic Literature* 46(2): 285-33.

La Porta R, Lopez-de-Silanes F, Shleifer A and Vishny R (1997) Legal determinants of external finance. *Journal of Finance* 52: 1131-1150.

La Porta R, Lopez-de-Silanes F, Shleifer A and Vishny R (1998) Law and finance. *Journal of Political Economy* 106: 1113-1155.

La Porta R, Lopez-de-Silanes F, Shleifer A and Vishny R (2002). Investor protection and corporate valuation. *Journal of Finance* 57(3): 1147-1170.

Landsman W, Maydew E and Thornock J (2012) The information content of annual earnings announcements and mandatory adoption of IFRS. *Journal of Accounting and Economics* 53(1/2): 34-54.

Lee L (1976) Estimation of limited variable models by two-stage methods. Doctoral Dissertation, University of Rochester, New York.

Lee, L. (1978) Unionism and wage rates: A simultaneous equations model with qualitative and limited dependent variables. *International Economic Review*, 19, 415-433.

Leuz C (2010) Different approaches to corporate reporting regulation: how jurisdictions differ and why. *Accounting and Business Research* 40(3): 229-256.

Leuz C, Nanda D and Wysocki P (2003) Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69: 505-527.

Licht, A., Goldschmidt, C. and Schwartz, S. (2007) Culture rules: the foundations of the rule of law and other norms of governance. *Journal of Comparative Economics*, 37: 659-688.

Lin C, Ma Y, Malatesta P and Xuan Y (2011) Ownership structure and the cost of corporate borrowing. *Journal of Financial Economics* 100: 1-23.

Lin C., Micah SO and Beiber S (2018) Managerial Risk-Taking Incentives and Merger Decisions. *Journal of Financial and Quantitative Analysis* 53(2): 643-680.

Lopes AI and Lourenço IC (2014) Determinants of engaging in business combinations through partial acquisitions. *Spanish Journal of Finance and Accounting* 43(2): 3-28.

Lopes AI, Lourenço IC and Soliman MT (2013) Do alternative methods of reporting non-controlling interests really matter? *Australian Journal of Management* 38(1), 7-30.

López-de-Foronda Ó, López-Iturriaga FJ and Santamaría-Mariscal M (2007) Ownership Structure, Sharing of Control and Legal Framework: International Evidence. *Corporate Governance: An International Review* 15(6): 1130-1143.

Lourenço I, Jeffrey C, Branco M and Curto J (2014) The Value Relevance of Reputation for Sustainability Leadership. *Journal of Business Ethics* 119(1): 17-28.

Ohlson JA (1995) Earnings, Book Values, and Dividends in Equity Valuation. *Contemporary Accounting Research* 11: 661-687.

Pagano M and Volpin P (2001) The Political Economy of Finance. *Oxford Review of Economic Policy* 17: 502-519.

Pagano M and Volpin P (2005) The Political Economy of Corporate Governance. *American Economic Review* 95: 1005-1030.

Rahman A, Yammeesri J and Perera H (2010) Financial reporting quality in international settings: A comparative study of the USA, Japan, Thailand, France and Germany. *The International Journal of Accounting* 4: 1-34.

Rees L and Thomas W (2010) The stock price effects of changes in dispersion of investor beliefs during earnings announcements. *Review of Accounting Studies* 15(1): 1-31.

Reese WA and Weisbach Jr M (2002) Protection of minority shareholder interests, cross-listings in the United States and subsequent equity offerings. *Journal of Financial Economics* 66: 65-104.

Schmidt M (2013) Equity and Liabilities – A Discussion of IAS 32 and a critique of the classification. *Accounting in Europe* 10(2): 201-222.

Schnyder G, Siems M and Aguilera RV (2018). Twenty Years of 'Law and Finance': Time to Take Law Seriously. *Socio-Economic Review* forthcoming.

Shleifer A and Vishny R (1997) A survey of corporate governance. *Journal of Finance* 52(2): 737-783.

Shleifer A and Wolfenzon D (2002) Investor protection and equity markets. *Journal of Financial Economics* 66: 3-27.

So S and Smith M (2009) Value relevance of IAS 27 (2003) revision on presentation of non-controlling interest: evidence from Hong Kong. *Journal of International Financial Management and Accounting* 20(2), 166-198.

Swanson Z (2010) Minority stockholder information relevance: wealth effects and/or monitoring? *Academy of Accounting and Financial Studies Journal* 14(4): 87-101.

Tsalavoutas I, André P and Dionysiou D (2014) *Worldwide Application of IFRS 3, IAS 38 and IAS 36, Related Disclosures, and Determinants of Non-Compliance*. ACCA Research Report 134. Available at http://www.accaglobal.com/content/dam/acca/global/PDF-technical/financial-reporting/rr-134-001.pdf (accessed 20 May 2018)

Villalonga B and Amit R (2006) How do family ownership, control and management affect firm value? *Journal of Financial Economics* 80: 385-417.

TABLE 1

Prior literature on the association between NCI and share prices

Authors	Year of publication	Country Sample	Data period	Summary of the association between NCI and share prices	Conclusions
Abad et al.	2000	Spain	1991-1997	Slight but positive association	Slightly value relevant (**positive**)
So and Smith	2009	Hong Kong	2004-2006	Negatively associated before 2005, and no relationship thereafter	**Null** relevance after adoption equivalent-to IAS standards: investors changed perceptions
Swanson	2010	United States	1988-1994	Larger firms: negative relationship but no statistical significance; smaller firms: positively associated; in between: negatively associated.	Different value relevance (**positive**, **negative** and **null**) based on size characteristics
Hsu et al.	2012	Taiwan	2000-2008	Negatively associated before 2005 and thereafter	Value relevant (**negative**) before and after new IAS definition of control: investors do not change perceptions
Lopes et al.	2013	Germany	2002-2008	Negatively associated before 2005 and thereafter	Value relevant (**negative**) before and after new IAS presentation of NCI: investors do not change perceptions

TABLE 2

Sample selection

	France	Greece	Sweden	Germany	UK
Sample: Listed Companies using IFRS with market value available in the sample period	529	228	198	416	1061
(-) Listed Companies with negative NCI in at least one year in the sample period	(13)	(17)	(0)	(30)	(6)
(=) *Number of companies*	*516*	*211*	*198*	*386*	*1055*
Companies with NCI>0 every year	*400*	*117*	*77*	*207*	*185*
Companies without NCI in any year	*116*	*94*	*121*	*179*	*870*
Sample: Companies with NCI>0 every year:					
Companies using IFRS with market value available	*400*	*117*	*77*	*207*	*185*
(-) Banks and other financial institutions	(55)	(18)	(17)	(47)	(42)
(-) Companies with non-positive shareholders' equity	(8)	(21)	(0)	(1)	(13)
(-) Companies with data missing for the analysis	(55)	(20)	(1)	(4)	(10)
(=) *Number of companies*	282	58	59	155	120
Sample: companies without NCI in any year:					
Companies using IFRS, with market value available	*116*	*94*	*121*	*179*	*870*
(-) Banks and other financial institutions	(21)	(12)	(37)	(20)	(273)
(-) Companies with non-positive shareholders' equity	(6)	(18)	(0)	(5)	(111)
(-) Companies with data missing for the analysis	(4)	(15)	(3)	(10)	(53)
(=) *Number of companies*	85	49	81	144	433

This table shows the sample selection procedures by country. From top to bottom, the table shows the number of companies for which data were collected, dividing the sample into two partitions: with NCI every year and without NCI in any year. Banks and other financial institutions, companies with non-positive shareholder´s equity and with data missing were excluded in both partitions

TABLE 3

Sample Description across Countries and Industries

	firm-year observations	With NCI		Without NCI	
	N	N	%	N	%
Panel A: Country breakdown					
France	1,697	1,187	70%	510	30%
Greece	640	347	54%	293	46%
Sweden	1,198	354	30%	844	70%
Germany	1,799	930	52%	869	48%
United Kingdom	3,318	720	22%	2,598	78%
	8,652	3,538		5,114	
Panel B: Industry Breakdown					
France	102	90	8%	12	2%
Mining and Construction	800	551	46%	234	46%
Manufacturing/Industrials	150	114	10%	30	6%
Utilities	150	96	8%	54	11%
Wholesale/Retail trade	522	336	28%	180	35%
Services	1,697	1,187	100%	510	100%
Greece	61	36	10%	25	9%
Mining and Construction	272	165	48%	107	36%
Manufacturing/Industrials	85	49	14%	36	12%
Utilities	132	54	16%	78	27%
Wholesale/Retail trade	90	43	12%	47	16%
Services	640	347	100%	293	100%
Sweden					
Mining and Construction	108	30	9%	78	9%
Manufacturing/Industrials	576	163	46%	413	49%
Utilities	77	36	10%	41	5%
Wholesale/Retail trade	89	17	5%	72	9%
Services	348	108	30%	240	28%
	1,198	354	100%	844	100%
Germany					
Mining and Construction	96	66	7%	30	3%
Manufacturing/Industrials	929	498	54%	431	50%
Utilities	173	102	11%	71	8%
Wholesale/Retail trade	132	54	6%	78	9%
Services	469	210	22%	111	30%
	1,799	930	100%	869	100%
United Kingdom					
Mining and Construction	679	150	21%	529	20%
Manufacturing/Industrials	1140	264	36%	876	34%
Utilities	222	60	8%	162	6%
Wholesale/Retail trade	306	54	8%	252	10%
Services	971	192	27%	779	30%
	3,318	720	100%	2,598	100%

TABLE 3 (Continued)

Panel C: Return, size, and leverage between groups

	With NCI	Without NCI	Test for equality of means
	Mean	*Mean*	*T-test*
France			
ROE	0.024	-0.022	1.573
SIZE	12.778	10.239	21.341***
LEV	0.204	0.112	12.712***
Firm-year obs.	1,187	510	
Greece			
ROE	-0.075	-0.040	-1.139
SIZE	10.517	9.639	6.605***
LEV	0.344	0.257	6.585***
Firm-year obs.	347	293	
Sweden			
ROE	0.124	-0,283	3.767***
SIZE	12.797	10.059	22.774***
LEV	0.185	0.132	8.287***
Firm-year obs.	354	844	
Germany			
ROE	0.036	-0.121	3.067***
SIZE	12.721	10.530	22.774***
LEV	0.203	0.138	8.277***
Firm-year obs.	930	869	
United Kingdom			
ROE	0.099	-0.088	12.389***
SIZE	12.963	10.598	25.091***
LEV	0.182	0.120	9.704***
Firm-year obs.	720	2,598	

This table describes the sample by country and industry, and tests for differences in means between groups with and without NCI for selected variables.

The main sample covers fiscal years 2008 to 2013. To be included in our sample, firms in each country must have all accounting and market variables available, non-negative NCI, and non-negative equity. We require information for six consecutive years and financial firms were excluded.

The sample of firms without NCI are firms that do not report NCI in their consolidated financial statements for six consecutive years. The Industry breakdown is based on one-digit SIC Codes, namely Mining and Construction (SIC 1000-1999); Manufacturing/Industrials (SIC 2000-3999); Utilities (SIC 4000-4999); Wholesale/Retail trade (SIC 5000-5999); Services (SIC 7000-9999).

ROE is a firm's return on equity and is calculated as the net income attributable to common shareholders divided by the parent shareholders´ common equity, LEV is a firm's leverage and is measured by dividing total liabilities by total assets, and SIZE is a measure of firm size, the natural logarithm of market capitalization

***, **, and * indicate statistically significant at the 0.01, 0.05, and 0.10 levels, respectively

TABLE 4
Selected Institutional Characteristics

Panel A: Selected Institutional Characteristics by Country

	Legal Origin/code law	Cultural Region	Anti-director rights	Ex-ante control	Ex-post control	Public enforcement	Rule of law
France	French/civil	WE	4	0.08	0.68	0.5	1.49
Greece	French/civil	WE	2	0.08	0.35	0.5	0.75
Sweden	Scandinavian/civil	WE	4	0.17	0.5	1	1.98
Germany	German/civil	WE	4	0.14	0.43	1	1.91
United Kingdom	English/common	ES	5	1	0.9	0	1.93

Panel B: Selected Institutional Characteristics by Legal origin

	Anti-director Index	Ex-ante control	Ex-post control	Public enforcement	Rule of law
Average French/civil	2.86	0.28	0.38	0.35	0.37
Average Scandinavian/civil	3.63	0.22	0.54	0.69	2.02
Average German/civil	3.5	0.27	0.44	0.54	1.6
Average English/common	4.22	0.58	0.74	0.35	0.8

This table summarizes institutional characteristics. Panel A and Panel B are based on measures provided by Leuz (2010), based on Djankov et al. (2008) and other sources. Panel A denotes measures for each individual country, as reported in Leuz (2010): *Legal origin* denotes the origin of the country´s legal system and is taken from Djankov et al. (2008), and we include similar classification (code law origin) as in La Porta (1997); *Cultural Region* is a classification of countries into major cultural groups based on Licht et al. (2007), separated by ES (English speaking) and WE (Western Europe); *Anti-director rights* is an aggregate measure of minority shareholders rights (higher values indicate more outside investor protection); *Ex-ante control* of self-dealing is the average of the requirements for approval by disinterested shareholders and ex-ante disclosure; *Ex-post control* of self-dealing is the average of disclosures in periodic filings and ease of providing wrongdoing; *Public enforcement* of anti-self-dealing provisions measures available, fines, and sanctions to the public enforcer; *Rule of law* index is an assessment of the overall legal quality and of law order in the country. Panel B presents the average for a larger number of countries grouped by different legal origins in which the five countries of Panel A are also included, as reported in Leuz (2010).

TABLE 5
Descriptive Statistics for variables used in analyses

	Mean	Median	Stand. Deviation	Minimum	Maximum
Panel A: French civil-law countries					
France (N=1,187)					
MV	31.639	19.960	37.403	0.000	171.010
BV	26.069	16.040	47.918	0.000	184.260
NI	1.779	1.350	4.023	-42.360	26.870
NCI	1.155	0.200	3.428	0.000	41.470
LOSS	0.16				
AUD	0.64				
XLIST	0.14				
Greece (N=347)					
MV	2.043	1.020	2.654	0.100	23.400
BV	2.692	2.333	1.961	0.021	17.329
NI	0.026	0.013	0.531	-2.183	5.148
NCI	0.191	0.061	0.254	0.000	1.757
LOSS	0.47				
AUD	0.24				
XLIST	0.18				
Panel B: Scandinavian/German civil-law countries					
Sweden (N=354)					
MV	8.513	6.190	9.135	0.010	77.920
BV	3.713	2.780	4.767	0.010	69.310
NI	0.524	0.390	0.850	-2.890	8.500
NCI	0.077	0.020	0.456	0.000	8.460
LOSS	0.13				
AUD	0.96				
XLIST	0.12				
Germany (N=930)					
MV	23.440	15.435	23.665	0.280	159.400
BV	14.731	10.890	13.272	0.150	75.280
NI	1.320	0.850	2.471	-19.060	15.360
NCI	0.818	0.170	1.631	0.000	12,520
LOSS	0.18				
AUD	0.90				
XLIST	0.14				
Panel C: Common-Law Countries					
United Kingdom (N= 720)					
MV	3.608	2.194	4.106	0.034	22.990
BV	1.823	1.302	1.614	0.004	7.747
NI	0.222	0.158	0.332	-1.659	1.785
NCI	0.075	0.018	0.161	0.000	1.347
LOSS	0.18				
AUD	0.82				
XLIST	0.08				

All monetary values are in Euros.
Sample: 1,187 firm year observations for France, 347 for Greece, 354 for Sweden, 930 for Germany, and 720 for the United Kingdom for the fiscal years 2008 to 2013.

Variables definition: MV is market value of equity per share at fiscal year end. BV is book value of equity per share attributable to parent shareholders. NI is net income per share attributable to parent shareholders. LOSS is a dummy variable that takes the value of 1 for firms with negative NI and 0 otherwise. NCI is the portion of equity in subsidiaries per share not attributable to the parent. AUD is an indicator variable that takes the value of 1 if the parent company is audited by a Big 4 audit firm, and 0 otherwise. XLIST is an indicator variable that takes the value of 1 if the firm is quoted in more than one stock exchange and 0 otherwise.

The mean values for the variables LOSS, AUD, and XLIST represent the percentage of firms reporting losses, the percentage of firms audited by a BIG 4 audit firm, and the percentage of firms listed in more than one stock exchange, respectively.

TABLE 6

Partial correlation between NCI and MV (OLS Regressions)

	France		Greece		Sweden		Germany		United Kingdom
Controlling for BV and NI:									
	MV		MV		MV		MV		MV
NCI	0.111	NCI	0.256	NCI	-0.268	NCI	-0.117	NCI	-0.129
Sig.	0.000	Sig.	0.000	Sig.	0.000	Sig.	0.000	Sig.	0.000
Controlling for all variables:									
	MV		MV		MV		MV		MV
NCI	0.072	NCI	0.154	NCI	-0.124	NCI	-0.128	NCI	-0.159
Sig.	0.013	Sig.	0.005	Sig.	0.023	Sig.	0.000	Sig.	0.000

Sample: The main sample of firms with NCI in their consolidated statements of financial position. There are 1,187 firm year observations for France, 347 for Greece, 354 for Sweden, 930 for Germany, and 720 for the United Kingdom for the fiscal years 2008 to 2013.

Variables definition: MV is market value of equity per share at fiscal year end. BV is book value of equity per share attributable to parent shareholders. NI is net income per share attributable to parent shareholders. NCI is the portion of equity in subsidiaries per share not attributable to the parent.

TABLE 7
Determinants for the use of NCI - Binary Logistic regression results

	French civil-law countries				Scandinavian/German civil-law countries				Common law country		All countries (Pooled)	
	France		Greece		Sweden		Germany		United Kingdom			
	coef.		coef.		coef.		coef.		coef.		Coef.	
ROE	0.677		0.276		0.347		0.561		0.320		0.217	***
SIZE	0.540	***	0.354	***	0.598	***	0.455	***	0.480	***	0.532	***
LEV	3.624	***	4.323	***	2.000	***	1.943	***	3.203	***	2.125	***
PROT											-0.774	***
ENF											0.324	***
Nagelkerke R^2	0.334		0.242		0.453		0.276		0.370		0.393	
Max VIF	1.181		1.274		1.292		1.139		1.174		1.321	
N	1,697		640		1,198		1,799		3,318		8,652	

This table reports the results from Model (2) estimated using a binary logistic regression. Industry and year fixed effects are included.

Sample: This estimation was run for a sample of 1,697 firm year-observations for France (1,187 with NCI and 510 without NCI), 640 for Greece (347 with NCI and 293 without NCI), 1,198 for Sweden (354 with NCI and 844 without NCI), 1,799 for Germany (930 with NCI and 869 without NCI), and 3,318 for the United Kingdom (720 with NCI and 2,600 without NCI) for the fiscal years 2008 to 2013.

Variables definition: The dependent variable is NCI_FIN, a binary variable that assumes 1 for firms reporting NCI every year during the entire sample period and 0 for firms who never reported NCI during the entire sample period. The covariates are: ROE is Return on Equity, calculated as the net income attributable to common shareholders divided by the parent shareholders´ common equity, LEV is leverage measured by total liabilities divided by total assets and SIZE is a measure of firm size, the natural logarithm of market capitalization. PROT is the anti-directors rights score and ENF is the public enforcement score, as reported in Panel A, Table 4.

***, **, and * indicate statistically significant at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 8
OLS Regression Results – Hypotheses 1 and 2

	By country										All countries (Pooled)	
	France		**Greece**		**Sweden**		**Germany**		**United Kingdom**			
Intercept	-8.306	*	-0.616	*	-3.009	***	-14.604	***	-1.257	***	-11.405	***
BV	0.211	***	0.304	***	1.340	***	0.931	***	0.711	***	0.432	***
NI	6.752	***	3.722	***	1.708	***	3.375	***	6.992	***	7.508	***
LOSS	-0.729		-1.126		-0.312		0.807		0.732	***	1.776	***
LOSSxNI	-7.317	***	-3.135	***	-7.022	***	-4.140	***	-7.074	***	-8.153	***
NCI	0.640	***	0.999	***	-2.248	**	-1.003	***	-2.254	***	0.522	***
HIGH											0.500	
HIGHxNCI											-0.806	**
CONTROLS:												
AUD	Yes		Yes		Yes		Yes		Yes		Yes	
XLIST	Yes		Yes		Yes		Yes		Yes		Yes	
Inv_Mills	Yes		Yes		Yes		Yes		Yes		Yes	
IND	Yes		Yes		Yes		Yes		Yes		Yes	
YEAR	Yes		Yes		Yes		Yes		Yes		Yes	
Adjusted R^2	0.662		0.761		0.763		0.662		0.743		0.735	
Max VIF	2.735		3.665		5.613		3.627		2.704		4.177	
F-test	137.227***		66.757***		176.800***		137.227***		56.593***		510.934***	

Sample: Firms with NCI reported in their consolidated financial statements, namely, 1,187 firm year observations for France, 347 for Greece, 354 for Sweden, 930 for Germany, and 720 for the United Kingdom for the fiscal years 2008 to 2013. The pooled sample after exclusion of outliers (top and down 1% observations for each variable and absolute value of the studentized residuals of models (1), (4), and (5) higher than 3) is 3,500 firm year observations.

Variables definition: The dependent variable is MV, the market value of equity per share at fiscal year end. The independent variables are: BV is book value of equity per share attributable to parent shareholders. NI is net income per share attributable to parent shareholders. LOSS is a dummy variable that takes the value of 1 for firms with negative NI and 0 otherwise. NCI is the portion of equity in subsidiaries per share not attributable to the parent. HIGH is an indicator variable that takes the value of 1 for the United Kingdom, Germany, and Sweden, and 0 for France and Greece.
AUD is an indicator variable that takes the value of 1 if the parent company is audited by a Big 4 audit firm and 0 otherwise. XLIST is an indicator variable that takes the value of 1 if the firm is quoted in more than one stock exchange and 0 otherwise. Inv_Mills is the Inverse of Mill's ratio computed with the binary logistic model in the first stage, consistent with the Heckman (1979) procedure. IND and YEAR are industry and year variables.

***, **, and * indicate statistically significant at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 9
OLS Regression Results - Hypothesis 3

	All countries (Pooled)	
Intercept	-11.155	***
BV	.428	***
NI	7.482	***
LOSS	1.705	*
LOSSxNI	-8.114	***
NCI	0.545	***
HIGH	1.358	**
HIGHxNCI	-0.576	**
HIGHEST	-1.129	
HIGHESTxNCI	-8.527	**
CONTROLS:		
AUD	Yes	
XLIST	Yes	
Inv_Mills	Yes	
IND	Yes	
YEAR	Yes	
Adjusted R^2	0.735	
Max VIF	4.188	
F-test	463.579***	

Sample: Firms with NCI reported in consolidated financial statements in all countries, namely, 1,187 firm year observations for France, 347 for Greece, 354 for Sweden, 930 for Germany, and 720 for the United Kingdom for the fiscal years 2008 to 2013. The pooled sample after exclusion of outliers (top and down 1% observations for each variable and absolute value of the studentized residuals of models (1), (4) and (5) higher than 3) is 3,500 firm year observations.

Variables definition: The dependent variable is MV, the market value of equity per share at fiscal year-end. The independent variables are: BV is book value of equity per share attributable to parent shareholders. NI is net income per share attributable to parent shareholders. LOSS is a dummy variable that takes the value of 1 for firms with negative NI and 0 otherwise. NCI is the portion of equity in subsidiaries per share not attributable to the parent. HIGH is an indicator variables that takes the value of 1 for United Kingdom, Germany, and Sweden, and 0 for France and Greece. HIGHEST is an indicator variable that takes the value of 1 for United Kingdom and 0 otherwise,
AUD is an indicator variable that takes the value of 1 if the parent company is audited by a Big 4 audit firm and 0 otherwise. XLIST is an indicator variable that takes the value of 1 if the firm is quoted in more than one stock exchange and 0 otherwise. Inv_Mills is the Inverse of Mill's ratio computed with the binary logistic model in the first stage, consistent with the Heckman (1979) procedure. IND and YEAR are industry and year variables.

***, **, and * indicate statistically significant at the 0.01, 0.05, and 0.10 levels, respectively.