



# Foreign vs domestic ownership on debt reduction: An investigation of acquisition targets in Italy and Spain<sup>☆</sup>



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## ABSTRACT

This paper examines the role of foreign versus domestic ownership in reducing the debt levels of acquired firms in Italy and Spain over the period 2002–2010. Acknowledging that lower debt levels can mitigate the risk of failure and thus enhance the chances for a positive post-acquisition performance and survival, we particularly examine the causal effect of foreign and domestic acquisitions on two firm-level debt measures: gearing and short-term leverage. To estimate causal relationships, we control for selection bias by applying propensity score matching techniques. Our results indicate that foreign acquisition leads to a significant and steady reduction in the debt ratios of the target companies. In contrast, the relationship between domestic acquisition and debt reduction appears to be smaller and statistically less robust.

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## 1. Introduction

In the current paper, we examine the influence of foreign ownership on debt reduction of acquisition targets. While the extant literature is rather restricted to the implications of foreign ownership on profitability, we focus instead on the changes in debt ratios of a target company after a takeover deal. Since debt ratios have long been identified as predictors of failure (when increased) (Beaver, 1966; Graham & Rogers, 2002; Leland, 1998), identifying the role of foreign ownership in reducing these ratios, and hence increasing the chances of survival of the new entity after the deal, is adding one vital piece to the post-acquisition performance puzzle.

The impact of foreign ownership on performance has been in the forefront of the international business and finance literatures for several decades. Yet, findings remain inconclusive. There is an abundance of evidence supporting the superiority of foreign-owned firms over their domestic counterparts (Boardman, Shapiro,

& Vining, 1997; Douma, George, & Kabir, 2006; Gedajlovic, 1993). From a resource based view, firms owned by foreign firms, typically large ones, can benefit from firm-specific advantages of the parent company, – i.e. technological expertise, networking, access to capital etc. – which can positively influence firm performance (Aybar & Ficici, 2009; Douma et al., 2006; Dunning, 1998). From an agency point of view, foreign firms are assumed to be better monitored and controlled, presenting an overall more robust financial performance (Jensen & Meckling, 1976; Thomsen & Pedersen, 2000). Nevertheless, industry and country specific factors (Barbosa & Louri, 2005; Globerman, Ries, & Vertinsky, 1994), high agency costs (Demsetz & Villalonga, 2001) and institutional factors (Heugens, Van Essen, & Van Oosterhout, 2009) have been reported to offset the benefits of foreign ownership.

The rich extant literature on cross-border acquisitions is equally convoluted. On one hand, several studies on cross-border takeover deals have found a positive impact of foreign ownership on performance associated with firm-specific advantages of the foreign acquirer (Li, Li, & Wang, 2015; Markides & Ittner, 1994; Ning, Kuo, Strange, & Wang, 2014). On the other hand, there is overwhelming evidence suggesting that acquisition deals do not manage to create shareholder value, but rather destroy it (Agrawal,

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Jaffe, & Mandelker, 1992; Aw & Chatterjee, 2004; Craninckx & Huyghebaert, 2011; Martynova & Renneboog, 2008).<sup>1</sup>

From the above, it is easy to discern that, as long as the literature is restricted to the direct implications of foreign ownership on profitability, a consensus regarding the role of foreign ownership on post-takeover performance cannot be reached. Nevertheless, with the 7th global Merger Wave<sup>2</sup> well under way, it is imperative to better understand not only the direct but also the indirect implications of foreign acquisitions on performance. So far we know that a reduction in debt levels minimizes the risk of failure and thus enhances the chances for a positive post-acquisition performance and survival. Meanwhile, foreign ownership has been long associated with better performance (Boardman et al., 1997; Douma et al., 2006; Heugens et al., 2009; Douma et al., 2006; Heugens et al., 2009), and even lower financial risk (Fatemi, 1984; Michel & Shaked, 1986). Yet, we are still unclear on whether foreign ownership has in fact a direct impact on the debt levels of acquired companies. To our knowledge, none of the former studies have explicitly factored in the impact of foreign ownership on debt reduction.

Our study contributes to the international business literature in three distinct ways. First, we inform the international business audience of the changes associated with foreign ownership on debt levels of acquired firms after a takeover deal. We particularly examine the causal effect of acquisitions on two firm-level debt ratios: gearing (short and long term debt to shareholders funds ratio) and short-term leverage (short term debt to total assets ratio). Second, while most empirical studies have concentrated on the acquirer's performance (Haleblian, Devers, Mcnamara, Carpenter, & Davison, 2009), we offer specific insights on the impact for the target company after the deal. The few studies on target firms have clearly shown significant differences on performance that cannot be ignored (Shleifer & Vishny, 2003). At the same time, the survival of a target firm is paramount for both the acquirer (as a parent company) and the economy in which it operates (Haskel, Pereira, & Slaughter, 2007; O'Donnell & Blumentritt, 1999; Rugman, Verbeke, & Yuan, 2011). Third, we compare matching samples of both domestic and foreign acquired firms,<sup>3</sup> which allows us to isolate the effect of foreign ownership and measure it with a higher degree of confidence.

Finally, acknowledging the significance of the institutional context on the ownership-performance/debt relationship (Heugens et al., 2009), specifically in bank-based economies (Kroszner & Strahan, 2001), we focus on two of the largest bank-based economies, namely Italy and Spain. Domestic firms in the two countries, being characterized by an overreliance on bank credit and a restricted financing availability, offer an ideal setting for our study. By achieving a better appreciation of the factors leading to lower debt ratios for the Italian and Spanish firms, we open the ground for new context-specific theory development with significant managerial and policy implications.

The paper proceeds as follows. Section 2 discusses in more detail how our contribution is related to previous studies. Specifically, we bring together two strands of the literature to inform our discussion: the literature on foreign ownership and performance and the literature on debt, risk and performance. Section 3 outlines the empirical model specification and describes the data, whereas Section 4 reports the empirical results and investigates their robustness. Section 5 provides conclusions and

further implications, and, finally, Section 6 discusses limitations and suggests directions for future research.

## 2. Literature review and hypotheses development

### 2.1. Foreign versus domestic ownership and performance

An extensive number of scholars from different strands of the literature have been involved in deciphering the impact of foreign ownership on performance. Despite the voluminous studies, findings are still inconclusive, with empirical studies depicting both positive and negative relationships.

From a resource based view, foreign ownership has been early associated with positive performance, as a result of ownership-specific advantages bestowed to foreign owners. Technological expertise and specialized production processes, superior management and marketing capabilities, as well as access to financial and human capital are only some of these key advantages identified (Caves, 1996; Douma et al., 2006; Dunning, 1998). When effectively deployed in a foreign market, these advantages help their proprietors exploit host market imperfections, and overcome transaction costs, the liability of foreignness and other barriers of internationalization (Barbosa & Louri, 2005; Dunning, 1998; Harris & Robinson, 2003; Markides & Ittner, 1994). Indeed, several empirical studies have provided evidence for the superiority of foreign firms over their domestic counterparts<sup>4</sup> (Boardman et al., 1997; Caves, 1996; Douma et al., 2006; Gedajlovic, 1993; Heugens et al., 2009). Meanwhile, foreign ownership has been associated with higher overall productivity (Harris & Robinson, 2003), and greater firm resistance to domestic demand contractions (Varum, Rocha, & Valente DA Silva, 2014).

Nevertheless, from an agency point of view, foreign corporate ownership has been associated with both positive and negative effects: the benefits and costs associated with higher control. Foreign ownership is known to enhance managerial control and hence shareholder protection, especially in the presence of institutional voids (Heugens et al., 2009). By exhibiting higher concentration of share ownership, corporate foreign owners, such as large multinationals, can “set and effectively impose control mechanisms that maximize performance” (Jensen & Meckling, 1976, p. 17), leading to the dominance of foreign- over domestically-owned companies (Boardman & Vining, 1989; Thomsen & Pedersen, 2000). Yet, the imposition of high control mechanisms is also known to increase transaction costs, which, coupled with tunneling effects and minority shareholder expropriation, can impose serious negative performance effects (Demsetz & Villalonga, 2001; Heugens et al., 2009).

#### 2.1.1. Insights from the acquisition literature

Acknowledging international acquisitions as an important foreign entry strategy (Dunning, 1998; Li et al., 2015), the cross-border acquisition literature has contributed significantly to the foreign ownership – performance debate. On one hand, cross-border deals have long been accredited a higher impact on performance than domestic ones, mainly due to synergistic gains

<sup>1</sup> Business correspondents in the Financial Times (FT) and other business magazines are also expressing serious concerns for the increasing record failures of acquisition deals (i.e. Masoudi, 2014, FT).

<sup>2</sup> . . . starting in 2011, as a consequence of the rise of the big emerging countries (BRICs).

<sup>3</sup> Very few past studies have explicitly compared foreign and domestic acquisitions (see, for example, Arnold and Javorcik, 2009).

<sup>4</sup> A number of empirical studies have corroborated the dominance of foreign firms over the domestic ones. For example, Willmore (1986) analyzes a matched sample of foreign and domestic firms in Brazil and finds foreign firms to have higher productivity and greater capital intensity. Similarly, Boardman et al. (1997), using data from the largest 500 non-financial Canadian businesses, reveal a clear performance dominance of multinational firms over the domestic ones. Even studies offering contrasting evidence, such as those by Globerman et al. (1994) and Barbosa and Louri (2005), have to control for size to allow for any variations in their findings, suggesting that foreign companies tend to be much larger than their domestic counterparts, skewing the results in their favor.

deriving from firm-specific advantages brought into the host-market by the foreign acquirers (Aybar & Ficici, 2009; Doukas & Travlos, 1988; Douma et al., 2006; Li et al., 2015, Markides & Ittner, 1994). To this end, a firm's foreign-acquisition announcement can be viewed by the market as a signal "to transfer or expand a firm's resources internationally that will enable the firm to exploit uniquely international distortions in capital markets" (Doukas & Travlos, 1988, p. 1162).

On the other hand, empirical evidence offers a diverse picture. It is actually a well-known fact that most acquisition deals destroy rather than create shareholder value (Agrawal et al., 1992; Aw & Chatterjee, 2004; Craninckx & Huyghebaert, 2011; Martynova & Renneboog, 2008). Similar evidence is also found among the cross-border acquisition deals (Aybar & Ficici, 2009). The negative-diversification discount hypothesis,<sup>5</sup> agency costs, liability of foreignness, lack of experience in acquisitions, and information asymmetries are some of the key explanations provided to justify the negative performance effects (Aybar & Ficici, 2009; Doukas & Travlos, 1988). Additionally, factors such as industry relevance and unique institutional factors have been found to play an important role, complicating even more the cross-border acquisition – performance relationship (Bertrand & Betschinger, 2012; Li et al., 2015).

It is important to note here that the majority of prior empirical studies has focused on the acquirer's performance rather than the performance of target firms (Haleblian et al., 2009). Yet, the few studies that concentrate on target firms, find their returns to be higher than those achieved by the bidders (acquirers), particularly in the short-term. While in the short-term acquirers tend to lose wealth from an acquisition deal, the target companies do better – although lose in the long-term (Shleifer & Vishny, 2003). Similarly, Hijzen, Martins, Schank, and Upward (2013), consider changes of ownership from foreign to domestic and from domestic to foreign in five countries; they show that only the latter are associated with a large positive wage premium, driven by the creation of high-skilled jobs.

Clearly, a consensus is yet to be reached regarding the overall cross-border acquisition – performance relationship (Martynova & Renneboog, 2008), particularly since performance has only been measured in terms of profitability, sales growth, or market power (Aybar & Ficici, 2009; Doukas & Travlos, 1988; Markides & Ittner, 1994; Von Eije & Wiegerinck, 2010). However, the few studies that have explored the impact of cross-border acquisitions on wider performance measures, such as productivity, operational profitability or market value (Boardman et al., 1997; Ning et al., 2014; Ning et al., 2014) have presented, in most cases, contrasting results. It is therefore imperative to look beyond profitability-related measures to fully appreciate the role of foreign ownership on performance. Early studies in finance have suggested that foreign ownership can lead to lower financial risk and as such higher performance (Fatemi, 1984; Michel & Shaked, 1986),<sup>6</sup> but offer little insights on the implications of foreign ownership on debt specifically. In fact, there is scarce discourse on the impact of foreign ownership on changes in debt levels despite the significance of this issue for firm growth and survival. To this end, we revert for inspiration to the substantial literature within international business and finance that has long explored the negative implications of high debt on the growth and survival of firms.

<sup>5</sup> In efficient market conditions, the announcement of a foreign acquisition should have a negative signal, denoting the inability of the firm to further utilize its resources internally. This, coupled with the high agency costs of monitoring cross border activities, should have an overall negative effect on performance.

<sup>6</sup> Michel and Shaked (1986) report that domestic corporations are significantly less capitalized and have higher systematic and total risks relative to multinationals. Fatemi (1984) claims that foreign owners provide shareholders with risk-return opportunities, superior to those provided by domestic firms.

## 2.2. The role of debt on performance and risk

It is well acknowledged that optimal capital structure is the result of a trade-off between benefits and costs associated with debt (Modigliani & Miller, 1958). According to the agency theory, higher levels of debt, compared to equity, are expected to reduce agency costs by aligning the interests of managers with those of shareholders (Harris & Raviv, 1991; Jensen & Meckling, 1976). Furthermore, debt financing can lead to significant tax savings, with positive effects on firm performance (Graham, 2000). Nevertheless, high debt also increases the risk of financial distress and raises the direct and indirect costs associated with bankruptcy. Greater leverage increases the threat of liquidation, causing personal losses to managers in terms of salaries and reputation (Grossman & Hart, 1982), whilst increases pressure on managers to generate the cash flow required to pay interest expenses (Jensen, 1986). At higher levels of leverage, additional debt can result into precarious increases in agency costs to compensate debt holders for facing higher financial risks (Berger & Di Patti, 2006).

High leverage may further limit the capacity of a firm to engage in valuable investment opportunities (Myers, 1977), or even force them towards riskier decisions. On one hand, stakeholder theory warns that more leveraged firms have a tendency to invest in sub-optimal projects, at least in the long-term, expropriating short-term wealth from the firm's stockholders (Galai & Masulis, 1976; Jensen & Meckling, 1976; Titman & Wessels, 1988). On the other hand, highly-leveraged firms are driven towards riskier projects with the expectation of higher potential profits, despite the costs to their overall credit and default risk (Wiseman & Catanach, 1997). It is hence not surprising that an increase in leverage has a direct effect on a firm's risk profile and consequently its market rating (Molina, 2005). A twofold increase in a firm's leverage ratio is construed as an increase in the firm's default probability, and its subsequent downgrade (Graham, 2000).

In conditions of heightened financial distress, the leverage – default relationship is further amplified. Highly leveraged firms tend to be less efficient, which under constraints, can have detrimental effects on performance. Indeed, Opler and Titman (1994) – among others – find that in conditions of industrial distress, highly leveraged firms experience higher losses in market share, lower levels of stock returns and higher sensitivity in stock price changes that can hamper their overall performance. As a result, the probability of bankruptcy among highly leveraged firms is doubled when compared to less leveraged firms (Opler & Titman, 1994). A firm's increasing bankruptcy risks impose further costs (e.g. switching costs) on its stakeholders, fearful of liquidation. Customers and suppliers are unwilling to invest with a firm facing significant bankruptcy risks, whereas any reduction in human capital investment (Jaggia & Thakor, 1994) can lead to negative impact on total firm value (Pfeffer, 1994).

## 2.3. The effect of the institutional environment

The importance of the institutional context on the ownership-performance relationship has early been established. Different measurements of leverage, different systems (i.e. bank-based versus market-based systems,<sup>7</sup> tax and bankruptcy laws, opportunities available to borrowers and investors etc.), as well as different levels of economic development among countries are known to condition the underlying relationships and the

<sup>7</sup> A standard indicator to classify economies into bank-based and market-based is the ratio of domestic bank credit to market capitalization (Levine, 2002); for example, a country with a high value of this indicator is considered to be bank-based.

performance effects (Heugens et al., 2009; Rajan & Zingales, 1995). For example, Heugens et al. (2009) report that over certain thresholds of institutional development, ownership concentration (typical among foreign-owned firms) is significantly more effective in these cases, foreign-owned firms tend to dominate their domestic counterparts.

Nevertheless, despite the importance of the context, extant research on the foreign ownership – performance relationship has been rather segmented to large market-based economies, such as the USA and the UK. However, bank-based economies present distinctive individualities compared to the market-based ones that cannot be simply ignored. Bank-based economies are typically heavily relying on concentrated bank ownership of the debt and equity capital, and a closely monitored management team. Consequently, in these economies, banks have a strong voice in corporate governance, and they are actively involved in any investment decisions within the country<sup>8</sup> (Kroszner & Strahan, 2001), even in the decision of a takeover. Compared to market-based economies, empirical evidence actually finds bank-based systems lacking in efficiency at allocating capital, managing risks and encouraging governance (see Levine, 2002; Holmström & Tirole, 1993; Hillier, Clacher, Ross, Westerfield, & Jordan, 2011). In such conditions, the presence of foreign investors – acting as a market substitute – may be central to the overall market growth. To this end, we take here a closer look at two of the largest bank-based economies in the world, Italy and Spain, to gain a better appreciation of the foreign ownership – debt relationship under this distinct context.

### 2.3.1. The individualities of the Italian and Spanish economies

Compared to other large bank-based economies, Italy and Spain have less developed stock and private equity markets,<sup>9</sup> which results in banks being particularly important for the financing of firms operating in the two countries. For instance, in 2010, bank lending to firms in Italy and Spain was equal to 57 and 86 percent of GDP, respectively, compared to 36 per cent in Germany (De Bonis, Pozzolo, & Stacchini, 2012). Italy and Spain also exhibit a poor performance in terms of productivity growth,<sup>10</sup> which can be explained by the relatively small firm size in the two countries. More precisely, Italy and Spain have a much larger share of small and medium-sized enterprises (SMEs) than the USA, the UK, Germany or France, which tend to be less productive than larger firms (Balconi, 2015). Furthermore, unlike large enterprises, which may turn to the capital markets, SMEs rely mostly on bank loans for funding, as a result of their organizational features and business strategies that are rarely publicly disclosed (Kaya, 2014). Hence, the central role of banks in firm financing and the overwhelming large share of SMEs in Italy and Spain make domestic firms in the two countries particularly vulnerable to macro-economic shocks and changes in bank credit.

<sup>8</sup> In Germany for example, CEOs are forbidden from serving on their supervisory boards; hence communication with shareholders is achieved through a board controlled by bankers (Kroszner and Strahan, 2001).

<sup>9</sup> As stated by De Bonis et al. (2012), the underdevelopment of the financial markets in Italy can be attributed to the country's historical legacy and a number of other factors, such as the dominance of family controlling firms, which tend to keep outside shareholders away, the prevalence of the public pension scheme, which leaves little room for institutional investors and thus reduces the potential demand for shares, and the legal system, which has been blamed for failing to protect minority shareholders and small investors.

<sup>10</sup> According to Balconi (2015), total factor productivity has fallen in Italy over the past 20 years and increased only marginally in Spain, compared to the cumulative growth of about 10% in France and Germany, and 8%, on average, in the Eurozone.

The above observations are confirmed when looking at debt developments over the period 2000–2010. As shown in Fig. 1, of the five largest Eurozone countries, the debt to financial assets ratios of non-financial corporations increased mostly in Italy and Spain. In all countries, non-financial corporations' debt declined in 2009 – though to a lesser extent in Italy and Spain. As reported by European Central Bank (ECB) (2012), this can be explained by debt deleveraging: as a reaction to changing conditions in bank credit after the crisis, firms may have increased their efforts to deleverage in order to secure or improve their creditworthiness, and these efforts may have been stronger for large firms than for SMEs (which dominate the Italian and Spanish economies) due to wider financing options.

### 2.4. Hypotheses development

Prior literature has established the existence of a non-monotonic relationship between leverage and performance; higher levels of leverage may reduce the value of the firm and negatively impact its performance. However, the relationship between leverage and ownership, particularly foreign ownership, remains rather unclear.

In line with agency theory, foreign ownership – placing a particular emphasis on managerial control and shareholder protection (Heugens et al., 2009) – is expected to be associated with lower levels of debt. Foreign-owned firms, while enjoying greater availability and stability of internal funds, will be inclined to reduce their dependence on short-term borrowing and long-term debt, minimizing as such their bankruptcy risks (Graham & Rogers, 2002; Grossman & Hart, 1982). The high uncertainty and dangers bestowed to the target's survival by the increased levels of debts would outweigh any tax benefits from utilizing external funding to support their operations.

Meanwhile, in institutional settings where managerial freedom can be hampered, foreign owners will be further inclined to take over managerial control and minimize any external influences on their affiliates' capital structure; consequently, a reduction in their debt levels is to be expected. Prior literature exploring the behavior and capital structure of subsidiary companies indeed reveals that parent companies alter significantly the overall debt level and composition of their subsidiaries when faced with uncertain political environments and/or very diverse institutional settings. In fact, Desai, Foley and Hines (2004) reported that in countries with weaker creditor rights or shallow capital markets, parent companies tend to reduce the external debt levels of their subsidiaries even up to three quarters, replacing them with internal funds instead.

In sum, we expect that firms in bank-based economies acquired by foreign investors will present lower levels of gearing and short-term leverage compared to firms acquired by domestic investors. Considering the individualities of domestic firms in Italy and Spain, and specifically their overreliance on bank credit and restricted financing availability (resulting from underdeveloped private equity markets and their small size), we expect that the impact of foreign acquisitions on debt ratios will be highly pronounced in these settings, whereas the same motivation would not exist among the domestically-owned companies. In other words, we propose that:

**Hypothesis 1.** Italian and Spanish firms acquired by foreign investors will present a significant reduction in short-term leverage ratios after the acquisition deal compared to firms acquired by domestic investors.

**Hypothesis 2.** Italian and Spanish firms acquired by foreign investors will present a significant reduction in gearing ratios

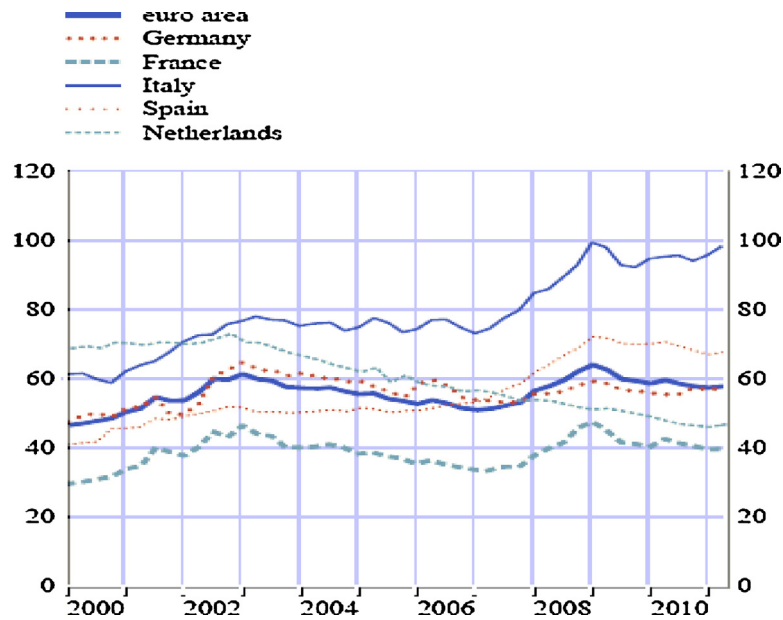


Fig. 1. Debt to financial assets ratio of non-financial corporations in euro countries. Sources: ECB and Eurostat

after the acquisition deal compared to firms acquired by domestic investors.

### 3. Research design

In this section we present the empirical methodology, data sources, and descriptive statistics relating to acquisitions in Italy and Spain and to the main variables that we use.

#### 3.1. Data sources

We base our analysis on financial account data (unconsolidated) extracted from the Amadeus data set for firms in Italy and Spain for the period between 2002 and 2010. We limit our sample to firms that are classified as private firms and that operate in manufacturing and services industries. We consider the following as private firms: joint stock companies, limited liability companies, limited liability consortium, one-person company with limited liability, and one person joint stock company. The vast majority of firms in the dataset fall within the definition of private firms.<sup>11</sup>

Since we employ lagged values in our empirical analysis, firms must have data on all the variables of interest for at least two years to be included in our sample.<sup>12</sup> Financial institutions and insurance companies are excluded from the analysis due to compatibility issues with the format of financial accounts. Information on acquisitions is retrieved from the Zephyr database and matched to Amadeus data using firm identifiers of acquired firms.<sup>13</sup> This

<sup>11</sup> In Italy 94.23% are considered private and in Spain 99.5%. Within the subsample of private firms, the vast majority consists of limited liability companies (72% in Italy and 76% in Spain).

<sup>12</sup> More precisely, we limit our data to firms that have at least two years of data for scale, age, productivity and capital to labor ratio (see Section 3.2 for variable definitions). Furthermore, propensity score estimations and matching results are based on samples with at least two years of data of either short-term leverage or gearing, depending on which one is used as the outcome variable. Note that we use linear interpolation to impute a small proportion of missing values in these variables.

<sup>13</sup> The availability of acquisition deals in Zephyr at the time of extraction was relatively lower in 2010 (see Table 1). However, excluding the year 2010 does not change our results.

matching process allows us to identify Italian and Spanish firms that were acquired during the period of study, as well as the nationality of the acquiring firm.

The extracted (monetary) variables for manufacturing firms are deflated using industry producer price indices at the 2-digit NACE code level, whereas those for services firms are deflated using the GDP deflator with base year 2005. Data on price indices and employment size classes at the country-industry level are collected from Eurostat. The final sample is an unbalanced panel with around 120000 firms per year for each country.

#### 3.2. Empirical methodology

The key objective of our empirical analysis is to evaluate the causal effect of both foreign and domestic acquisition on firms' debt ratios. To control for endogenous factors affecting the acquisition decision process,<sup>14</sup> we follow recent empirical work on international investment and foreign ownership (Alfaro & Chen, 2012; Arnold & Javorcik, 2009) and compute the acquisition effect using propensity score matching, as suggested by Heckman, Ichimura, & Todd (1997). Formally, the effect of acquisition in a given time period can be expressed as:

$$E((Y_1 - Y_0)|Acq = 1) = E(Y_1|Acq = 1) - E(Y_0|Acq = 1) \quad (1)$$

where  $Y$  denotes the outcome of interest and the subscript of  $Y$  represents the hypothetical circumstances under which the outcome is evaluated, taking the value one for foreign (domestic) acquisition and zero for non-acquisition. In particular, we focus on two outcome variables; namely short-term leverage (ratio of short term debt to total assets) and gearing (short and long term debt to shareholders funds ratio). In other words, Eq. (1) represents the difference between the outcome measure for an acquired firm and the analogous measure for the same firm had it not been acquired. The latter, however, is an unobserved counterfactual, and hence we need to construct it using the matching procedure; that is, by identifying a non-acquired match with similar observable

<sup>14</sup> Such as self-selection of large and more productive firms (Helpman et al., 2004) and/or "cherry-picking" of the best performing ones (Harris and Robinson, 2003).

characteristics for each acquired firm. The underlying assumption for the validity of this approach is that, conditional on observable characteristics, the treated (acquired firms) and the matched non-treated (non-acquired domestically-owned firms) would perform similarly under the same circumstances. To this end, we can rewrite Eq. (1) as:

$$[E(Y_1|Acq = 1, X) - E(Y_{10}|Acq = 0, X)] - [E(Y_{01}|Acq = 1, X) - E(Y_{10}|Acq = 0, X)] \quad (2)$$

where the first term captures the causal effect of acquisition (the difference between the outcome of acquired firms and a carefully selected group of non-acquired domestically-owned firms with similar observable characteristics) and the second term captures the selection bias (the difference between the outcome of acquired firms, under the hypothetical circumstances that they had not been acquired, and the outcome of non-acquired domestically-owned firms).  $X$  is a vector of observable characteristics. Our aim is to minimize the selection bias by applying propensity score matching techniques and thus estimate the causal effect of acquisition as the difference in the sample average of the outcome for treated and non-treated firms.

As shown by Rosenbaum and Rubin (1983), conditioning on all variables in the treatment model is equivalent to conditioning on the propensity score (the predicted probability of treatment), which in our case is the conditional probability of acquisition given firm characteristics and past firm performance. We thus proceed in two stages. In the first stage, we estimate the propensity score, separately for each country, using the following probit model:

$$'Acquisition'_{inry} = \Phi\{\beta Z_{inry-1} + \lambda_n + \eta_r + \psi_y + \varepsilon\} \quad (3)$$

where 'Acquisition' is a dummy variable that equals one in the year of a foreign (domestic) acquisition, and zero if the firm is not foreign-owned or a multinational and has not been acquired during the sampled period; Ownership is captured by any ownership stake over a threshold of 50% of total shareholding;  $\Phi$  denotes the cumulative distribution function of a standard normally distributed random variable;  $Z$  is a vector of control variables, expressed in natural logarithms and lagged by one year to account for pre-acquisition characteristics;  $i, n, r, y$  index firm, industry (at 2-digit NACE code level), region (at NUTS 2 code level), and time, respectively. We follow the existing literature on acquisitions and include the following control variables in vector  $Z$ :

**Productivity:** measured as turnover per employee. Turnover corresponds to total operating revenues measured as net sales plus stock variations and other operating revenues.

**Scale:** measured by the number of employees.

**Age:** measured by the number of years since establishment.

**Capital to labor ratio (K/L):** measured as tangible assets by employee.

We also include in vector  $Z$  the outcome variable (short-term leverage or gearing) and its squared term:<sup>15</sup>

**Short-term leverage (Leverage<sup>ST</sup>):** measured as the ratio of short term debt to total assets, where total assets is the sum of current assets and fixed assets and short term debt corresponds to the sum of short term financial debts to credit institutions (loans and credits) and part of long term financial debts payable within the year.

**Gearing:** measured as the ratio of short and long term debt to shareholders funds.

<sup>15</sup> We estimate two versions of Eq. (3), one where gearing and its squared term are included as controls and one where short term leverage and its squared term are included as controls. The first version is the basis for the matching procedure where gearing is the outcome under consideration, while the second version is the basis for the matching procedure where short-term leverage is the outcome variable.

The addition of the outcome variable and its square term among the control variables in Eq. (3) ensures that matches assigned on the propensity score will be homogeneous in terms of their previous debt levels. To capture unobserved heterogeneity, we also include industry ( $\lambda_n$ ), region ( $\eta_r$ ) and year ( $\psi_y$ ) fixed effects. Finally, to ensure that the sample is representative of the relevant population of firms in each industry, all regressions are weighted by size classes at the industry level. More specifically, firms are divided in five size classes based on the median number of employees; with categories being: less than 10, between 10 and 19, between 20 and 49, between 50 and 249 and 250 or more (Eurostat size-class breakdown).

In the second stage, we employ five-nearest neighbors matching<sup>16</sup> and compare the outcome variables within observations matched by the propensity score. More precisely, each treated firm  $t$  is matched with  $N_t^c = 5$  controls that are closest in terms of the propensity score. The outcome variable of each of the controls  $c$  matched to treated firm  $t$  is weighted by  $W_{tc} = 1/N_t^c$ . We also impose the restriction that the matched control observations must come from the same industry, size class, and productivity group<sup>17</sup> as the acquired firm. This eliminates the probability that different levels of capital structure across industry, size, and productivity combinations exert influence on our estimated results. To examine whether the model for the propensity score is misspecified, we perform tests of the balancing property; that is, we test the significance of differences between acquired and matched firms for each variable entering the propensity score estimation. Formally, the average treatment effect ('ATT') of acquisition in the year of acquisition (when  $j=0$ ) and the subsequent three years (when  $j=1-3$ ) is calculated as:

$$ATT_j = \frac{1}{N} \sum_1^N (\ln Y_{acquisitionyear+j}^t) - \frac{1}{N} \sum_1^N (W_c \ln Y_{acquisitionyear+j}^c) \quad j = 0, 1, 2, 3 \quad (4)$$

where  $W_c = \sum_t W_{tc}$ .

### 3.3. Descriptive statistics

Table 1 summarizes the number of foreign and domestic acquisitions and the number of pre-matched control observations by country and year. It shows a steady increase of domestic and foreign acquisitions in both countries up to 2008, followed by a drop of acquisitions in 2009. Table 1 also shows a larger number of domestic acquisitions compared to foreign acquisitions, in both countries and in all years.

Table 2 lists the top ten home countries of foreign acquirers, separately for Italy and Spain. These top 10 countries account for almost 80% of all acquisition deals. As we can see from this table, most acquirers originate from other European countries. More precisely, 70% of foreign acquisitions of Spanish firms and 60% of foreign acquisitions of Italian firms are made by acquirers originating from other European economies. Outside Europe, firms from the USA hold a significant share of the foreign acquisitions (18% in the case of Italy, and 13% in the case of

<sup>16</sup> In the five-nearest neighbors matching, the counterfactual outcome is made up of the average of the five control group observations closest in their propensity score to the treated observation. To reduce the likelihood of poor matches, the matching is carried out with replacement (each control can serve as the counterfactual for more than one treated observation) using a 0.005 caliper (the difference in the propensity score between treated and control observations). In addition, we exclude observations outside the common support, bound by the lowest propensity score of a treated observation and the highest propensity score of a matched control observation.

<sup>17</sup> We divide firms into five productivity groups based on the median value of the turnover per employee.

**Table 1**  
Counts of acquisitions and controls by year.

Year	Italy			Spain		
	Foreign Acquisitions	Domestic Acquisitions	Controls	Foreign Acquisitions	Domestic Acquisitions	Controls
2002	11	34	108601	13	33	108002
2003	11	26	112744	13	54	113003
2004	14	35	117137	22	34	117628
2005	30	36	121274	33	39	121687
2006	31	39	124893	26	71	124929
2007	35	51	127069	45	90	126908
2008	41	62	127489	62	133	127568
2009	19	37	127491	21	90	127568
2010	6	9	127491	6	20	127568
Total	198	329	1094189	241	564	1094861

**Table 2**  
Top 10 countries of foreign acquirers.

Country	Italy		Spain		
	Number of Acquisitions	% of Total	Country	Number of Acquisitions	% of Total
United States	36	18.18	France	38	15.83
Germany	25	12.63	United Kingdom	36	15.00
France	22	11.11	United States	31	12.92
United Kingdom	19	9.60	Germany	19	7.92
Spain	11	5.56	Italy	19	7.92
Switzerland	9	4.55	Portugal	15	6.25
Belgium	8	4.04	Belgium	11	4.58
Sweden	8	4.04	Sweden	10	4.17
India	6	3.03	Netherlands	7	2.92
Netherlands	6	3.03	Japan	5	2.08

Spain). Furthermore, most acquirers originate from developed economies, with India being the only developing country in the top 10 of home countries for acquisitions made in Italy.

Table 3 presents descriptive statistics of the main variables (i.e. the variables included in our propensity score regressions), while distinguishing between three categories of firms; firms acquired by foreign companies, firms acquired by domestic companies, and domestic non-acquired firms. We can discern here that, on average,<sup>18</sup> target firms are more productive, larger and older than non-acquired domestic firms; they are also less capital intensive and have a lower gearing ratio but a higher short-term leverage ratio in comparison to domestic non-acquired firms. When comparing between foreign and domestic acquisitions, we can see that firms acquired by foreign companies are larger, more productive, less capital intensive and have a lower gearing ratio than firms acquired by domestic investors.<sup>19</sup>

Additional bilateral comparative analysis of the same variables for target firms and their acquirers shows that the acquiring companies in our sample – particularly the foreign ones – are very robust and in a much better financial condition than the targets prior to the acquisition event. More precisely, we find that acquiring firms are more productive, larger, older and more capital intensive than the acquired (target) firms, and these differences are more pronounced when acquirers are foreign. We also find that acquirers in general and foreign acquirers in particular are in a better shape in terms of capital structure than the targets; that is, firms acquired by foreign investors exhibit

significantly higher (pre-acquisition) debt ratios compared to these investors.<sup>20</sup>

We now turn to discuss some statistical evidence of the relevance of debt for firms' chances of survival. We perform a simple empirical exercise where we estimate the probability of exit of firm  $i$  in year  $t$  and investigate the link between our two debt ratios ('Gearing' and 'Short-term Leverage') and the probability of exit.<sup>21</sup> We consider that a firm has exited the market if, for two consecutive years, it has not reported data for key variables, like employment, turnover or sales. The results, reported in Table 4, show a strong and positive relationship between the levels of debt and the probability of exit. More precisely, the coefficient on the debt ratio is positive and statistically significant for both Italy and Spain during the sampled period, and this effect persists regardless of the proxy used for debt. A more sophisticated empirical analysis is, of course, needed to draw robust econometric inferences about the impact of debt reduction on firms' survival chances. Nevertheless, we feel that this exercise is descriptively consistent with our theoretical framework where lower debt levels can mitigate the risk of failure, and outlines the importance of studying the factors that could potentially reduce a firm's debt ratios.

<sup>20</sup> Due to data limitations, this bilateral comparison is based on a sub-sample of the acquisition cases used in the paper. Therefore, the corresponding results are not reported in the paper but are available upon request.

<sup>21</sup> We estimate the probability of exit using a complementary log-log model (cloglog) which is a discrete-time version of the Cox proportional hazard model (Görg and Spaliara, 2014). As right-hand-side variables, we use a measure of firm-level debt ('Gearing' and 'Short-term Leverage'), scale and its squared term, age and its squared term, productivity, capital intensity and the ratio of intangible assets to total employment. All right-hand-side variables are expressed in natural logarithm and lagged by two years (due to the definition used for the exit variable). We also include a full set of fixed effects at the year, industry and regional levels. Full results are available upon request.

<sup>18</sup> . . . and without accounting for other firm-characteristics and industry/region heterogeneities.

<sup>19</sup> Tables A1 and A2 in the Appendix present the distribution of firms by industry and by size class.

**Table 3**  
Descriptive statistics of the main variables.

	Italy			Spain		
	Foreign Acquisitions	Domestic Acquisitions	Controls	Foreign Acquisitions	Domestic Acquisitions	Controls
Productivity	635.39 (1356.44)	455.22 (1245.99)	477.53 (1070.47)	380.32 (890.92)	313.67 (633.15)	285.22 (557.60)
Scale	175.46 (386.46)	147.11 (284.66)	26.65 (86.31)	141.10 (239.75)	100.26 (228.76)	26.04 (79.63)
Age	20.81 (15.84)	20.09 (14.34)	16.70 (12.96)	21.03 (15.22)	18.74 (14.68)	14.10 (10.47)
K/L	90.86 (451.08)	98.19 (448.59)	121.04 (677.36)	96.28 (488.58)	114.82 (609.45)	180.93 (707.70)
Gearing	150.92 (195.11)	169.44 (195.4)	198.29 (225.53)	95.37 (143.70)	125.91 (179.49)	103.43 (164.47)
Leverage <sup>ST</sup>	12.34 (17.28)	12.89 (17.84)	11.40 (16.09)	7.57 (11.39)	7.29 (12.36)	3.20 (9.08)

Note: Columns report mean values. Standard deviations in parenthesis.

**Table 4**  
Debt ratios and the probability of exit.

	Italy		Spain	
	Gearing	Leverage <sup>ST</sup>	Gearing	Leverage <sup>ST</sup>
ln(Debt ratio)	0.018** (0.008)	0.006* (0.003)	0.051*** (0.005)	0.013** (0.006)
Industry, time, region dummies	Yes	Yes	Yes	Yes
Number of observations	240412	260065	460080	511111
Log Pseudo-likelihood	−1056995.6	−1149835.7	−1156749.1	−1274303.3
Wald chi2	12295.77	14225.51	7272.70	9802.37
prob > chi2	0.000	0.000	0.000	0.000

Note: Exit is a dummy variable that equals one if the firm has two consecutive years of missing data for key variables. Explanatory variables lagged by two years. Columns report estimated coefficients. Robust *p*-values in parentheses. Regressions are weighted by country-industry sampling weights. \*\*\*, \*\*, \* Statistically significant at the 1%, 5% and 10% confidence level, respectively.

## 4. Findings

### 4.1. Determinants of foreign and domestic acquisition

Table 5 presents the results of the estimation of Eq. (3) for each country, exploring some of the most prevalent factors influencing the decision of a foreign or domestic investor to acquire a firm in Italy or Spain.

As a first point, we can notice that, as expected, productive firms are more attractive to foreign acquirers than to domestic acquirers: the estimated coefficient on 'Productivity' appears to be positive and statistically significant only in the equations estimating the probability of foreign acquisition. Past studies have already suggested that foreign investors tend to prefer well-performing firms to invest in (Harris & Robinson, 2003). On the contrary, domestic investors who have better knowledge of the local market, customers, and business networks, rely less heavily on observable information (i.e. productivity) to select their potential targets.<sup>22</sup>

Furthermore, we find a positive and statistically significant relationship between acquisition and size (measured in terms of the number of employees) for both countries, and a negative relationship between acquisition and age – although it is statistically significant only in the case of Italy. These findings denote that larger and younger firms are more likely to be acquired. On one hand, large, established firms, having considerable market experience and assets to offer, can be seen as more reliable

investment options, particularly in less efficient markets, like Italy and Spain (Healy, Palepu, & Ruback, 1992; Barbosa & Louri, 2005). On the other hand, younger firms can potentially offer higher growth opportunities for their acquirers, and are thus manage to offset the liabilities of experience and size.

Capital intensity is also found to significantly affect acquisitiveness, as also shown in the studies of Shapiro (1980) and Gedajlovic (1993). Yet, the impact of capital intensity is different across the two countries: foreign acquirers of Italian firms tend to favor higher capital to labor ratios, whereas those of Spanish firms tend to favor lower capital to labor ratios. Finally, acquisitiveness is significantly influenced by industry, year and region specific effects (coefficients not reported).

It is noteworthy that in the case of Italy prior debt levels do not seem to be a determinant factor of acquisitions, foreign or domestic. Nevertheless, Spain appears to be a different case altogether; we do find that in Spain higher levels of short-term leverage do increase the probability of foreign acquisitions, while reducing the probability of domestic acquisitions.

### 4.2. The impact of acquisitions on the debt ratios of acquired firms

The predicted probabilities (or propensity scores) of acquisition, calculated using the estimates presented in Table 5, form the basis of the matching procedure. We thus proceed by considering the results from the five-nearest neighbors matching.

Panel (a) of Table 6 shows the ATT of foreign acquisition on 'Gearing'. The evidence obtained suggests that foreign acquisition leads to a significant and steady reduction in the long term debt ratio: while the treated and control groups start with very similar levels of 'Gearing' in the pre-acquisition period, the former exhibit lower levels of debt in the subsequent years. Specifically, during

<sup>22</sup> Even though firms acquired by foreign investors are more productive than those acquired by domestic investors, there is still a large productivity gap between targets and their foreign acquirers. This observation, however, is based on a comparative analysis of targets and acquiring firms that only covers a sub-sample of acquisition cases (see also footnote 20).



**Table 5**  
Propensity score estimation.

	Italy		Spain	
	Foreign Acquisition	Domestic Acquisition	Foreign Acquisition	Domestic Acquisition
<b>Control for Gearing</b>				
ln(Productivity)	0.276*** (0.045)	-0.004 (0.111)	0.253** (0.103)	0.022 (0.052)
ln(Scale)	0.325*** (0.025)	0.221*** (0.063)	0.255*** (0.055)	0.274*** (0.030)
ln(Age)	-0.045*** (0.018)	-0.055*** (0.014)	0.074 (0.090)	-0.012 (0.015)
ln(K/L)	0.067** (0.027)	0.028 (0.032)	-0.114* (0.060)	0.071* (0.036)
ln(Gearing)	0.258 (0.241)	0.320* (0.183)	-0.010 (0.015)	-0.005 (0.010)
ln(Gearing) <sup>2</sup>	-0.032 (0.028)	-0.039* (0.023)	-0.012*** (0.003)	-0.003 (0.002)
Constant	-12.412*** (1.094)	-5.861*** (1.452)	-8.591*** (1.593)	-4.458*** (0.723)
Industry, time, region dummies	yes	yes	yes	yes
Number of observations	573171	636119	607160	694528
Pseudo-R <sup>2</sup>	0.231	0.182	0.306	0.164
<b>Control for Leverage<sup>ST</sup></b>				
ln(Productivity)	0.267*** (0.044)	-0.012 (0.096)	0.208** (0.101)	0.046 (0.046)
ln(Scale)	0.344*** (0.020)	0.222*** (0.061)	0.248*** (0.056)	0.237*** (0.039)
ln(Age)	-0.038** (0.016)	-0.046*** (0.013)	0.112 (0.080)	-0.030 (0.020)
ln(K/L)	0.064*** (0.024)	0.026 (0.03)	-0.089* (0.049)	0.044 (0.034)
ln(Leverage <sup>ST</sup> )	-0.019 (0.026)	0.018 (0.018)	0.042*** (0.016)	-0.064* (0.036)
ln(Leverage <sup>ST</sup> ) <sup>2</sup>	-0.003 (0.004)	-0.001 (0.003)	0.005** (0.002)	-0.014** (0.006)
Constant	-9.230*** (0.757)	-5.194*** (1.320)	-8.417*** (1.501)	-4.462*** (0.727)
Industry, time, region dummies	yes	yes	yes	yes
Number of observations	640313	697837	715897	791181
Pseudo-R <sup>2</sup>	0.227	0.179	0.271	0.185

Note: Foreign (domestic) acquisition is a dummy variable that equals one in the year of a foreign (domestic) acquisition. Explanatory variables lagged by one year. Columns report estimated coefficients. Robust *p*-values in parentheses. Regressions are weighted by country-industry sampling weights. \*\*\*, \*\*, \* Statistically significant at the 1%, 5% and 10% confidence level, respectively.

the year of acquisition, foreign-acquired Italian (Spanish) firms have 49% (40%) lower gearing ratio compared to their matched control observations. The reduction in the 'Gearing' ratio increases to 62% (54%) in the first year following the acquisition, reaches its peak at 67% (81%) in the second year, and declines moderately to 57% (78%) in the third year.<sup>23</sup> The relatively small impact of foreign acquisition in Year 0 suggests the presence of restructuring costs that increase the gearing ratio in the year of completion.

Panel (b) of Table 6 shows the ATT of domestic acquisition on 'Gearing'. The results indicate that, when firms are acquired by domestic investors, changes to the long-term debt ratio are smaller and statistically less robust. More precisely, for Italian firms, the ATT of domestic acquisition is negative and statistically significant in all four years, but appears to be substantially lower in absolute value compared to that of foreign acquisition. For instance, in the three post-acquisition years, reduction in the gearing ratio of acquired firms amounts to 24%-32% compared to the control group. However, for Spanish firms, the ATT of domestic acquisition is positive (acquired firms have higher gearing ratio than their non-acquired local matches) and marginally statistically significant in the year of completion, but fails to reach statistical significance in

the three years thereafter. Formal paired t-tests between acquired and matched control firms fail to reject the balancing hypothesis for all variables entering the propensity score estimation, confirming that our matching procedure has grouped together homogeneous firms (see Table A3 in the Appendix A).

The decrease in debt associated with foreign acquisition is verified when we use 'Leverage<sup>ST</sup>' as the outcome variable (see panel (c) of Table 6). The results indicate that foreign-acquired firms exhibit on average lower short-term debt ratios than their matched control observations: the reduction in 'Leverage<sup>ST</sup>' of treated firms is both statistically and economically significant, starting from 60% and 24% in the acquisition year (for Italy and Spain respectively) and reaching a peak at 89% and 84% in the second year after acquisition. In contrast, the effect of domestic acquisition on 'Leverage<sup>ST</sup>' is either small or statistically insignificant or of the opposite sign (see panel (d) of Table 6). For instance, in the case of Spain, we detect a positive and statistically significant rise in short term indebtedness during the completion year and the two post-acquisition years.

The stronger impact of foreign acquisition, compared to domestic acquisition, on the debt levels of the target firms is confirmed when we carry out a test of the hypothesis that the ATTs for the two groups are statistically the same (see Table 7). Specifically, the results of this test suggest that, during the completion year in Spain and the three post-acquisition years in both Italy and Spain, the reduction in

<sup>23</sup> Since the ATT is calculated for the log of the gearing ratio, the reported percentages are obtained by taking the exponential of the ATT and subtracting one.

**Table 6**  
The impact of acquisitions on acquired firms' debt ratios.

Panel (a): Foreign acquisition/Gearing					
Year	Italy		Spain		N
	ATT		ATT		
0	-0.683***	(0.170)	-0.516*	(0.270)	155
1	-0.980***	(0.226)	-0.767**	(0.308)	135
2	-1.121***	(0.246)	-1.644***	(0.341)	110
3	-0.855***	(0.240)	-1.525***	(0.425)	76
Panel (b): Domestic acquisition/Gearing					
Year	Italy		Spain		N
	ATT		ATT		
0	-0.552***	(0.120)	0.284*	(0.171)	323
1	-0.274**	(0.113)	0.224	(0.190)	281
2	-0.268**	(0.106)	-0.142	(0.247)	208
3	-0.393**	(0.198)	-0.348	(0.329)	136
Panel (c): Foreign acquisition/Leverage <sup>ST</sup>					
Year	Italy		Spain		N
	ATT		ATT		
0	-0.904**	(0.398)	-0.269	(0.309)	168
1	-1.743***	(0.485)	-0.940***	(0.303)	139
2	-2.199***	(0.546)	-1.857***	(0.430)	97
3	-1.814**	(0.747)	-1.720***	(0.574)	62
Panel (d): Domestic acquisition/Leverage <sup>ST</sup>					
Year	Italy		Spain		N
	ATT		ATT		
0	-0.467	(0.345)	0.939***	(0.199)	391
1	-0.423	(0.339)	1.192***	(0.269)	300
2	-0.418	(0.442)	0.676**	(0.335)	197
3	-0.266	(0.484)	-0.611	(0.406)	135

Note: five-nearest neighbor matching. ATT denotes average treatment effect on the treated. N denotes the number of matched targets. Bootstrap standard errors in parenthesis. \*\*\*, \*\*, \* Statistically significant at the 1%, 5% and 10% confidence level, respectively.

'Gearing' and 'Leverage<sup>ST</sup>' is larger when the firms are acquired by foreign investors than when they are acquired by domestic investors.

We take our analysis a step further and investigate whether the development level of the country of origin of acquiring firms has an impact on our findings. To do that, we focus on acquisitions from high-income OECD countries,<sup>24</sup> which, as shown in Table 2, constitute the majority of foreign acquisitions in our sample.<sup>25</sup> Specifically, we perform the same propensity score matching methodology as before, but we now assume that only firms acquired by investors originating from high-income OECD countries receive the treatment. The corresponding results, presented in Table 8, are very similar to those reported in Table 6 for the full sample of foreign acquirers, in terms of sign and statistical significance. Qualitatively though, the effects are now relatively stronger, suggesting that the impact of foreign acquisition on debt reduction of target firms in Italy and Spain is actually less pronounced when the acquiring firms originate from low-income, developing countries.

<sup>24</sup> Following the World Bank's definition of high income OECD countries, we include the following countries in this category: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy (only in the case of Spanish targets), Japan, South Korea, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain (only in the case of Italian targets), Sweden, Switzerland, the UK and the USA.

<sup>25</sup> Note that we are not able to perform a separate matching procedure for each individual foreign nationality, as we have very few acquisitions in each case.

**Table 7**  
Test the equality of the ATTs between foreign and domestic acquisitions.

Gearing					
Year	Italy		N	Spain	
	Diff in ATT			Diff in ATT	
0	-0.131	(0.208)	345	-0.800***	(0.320)
1	-0.706***	(0.253)	306	-0.991***	(0.362)
2	-0.853***	(0.268)	261	-1.502***	(0.421)
3	-0.462*	(0.311)	196	-1.177**	(0.537)
Leverage <sup>ST</sup>					
Year	Italy		N	Spain	
	Diff in ATT			Diff in ATT	
0	-0.437	(0.527)	366	-1.208***	(0.368)
1	-1.320**	(0.592)	300	-2.132***	(0.405)
2	-1.781***	(0.703)	233	-2.533***	(0.545)
3	-1.548**	(0.890)	169	-1.109*	(0.703)

Note: Reports the results of a one-sided test (standard errors in parenthesis), where H0: the difference in the ATT between foreign and domestic matched targets is equal to zero, and H1: the difference in the ATT between the two groups is negative. N denotes the combined number of matched targets. \*\*\*, \*\*, \* Indicates rejection of the null hypothesis at the 1%, 5% and 10% confidence level, respectively.

### 4.3. Robustness tests

We perform a number of tests to assess the robustness of the above findings (results available upon request).

First, we implement changes to the propensity score equation, such as adding profitability ratios, cash flow to turnover ratios, and square terms of scale and age among the regressors. Second, we consider alternative matching methodologies, including the one-to-one nearest neighbor matching and Epanechnikov kernel matching. The results obtained from these tests provide evidence that supports the findings of the previous section: foreign acquisition leads to a significant and steady reduction in 'Gearing' and 'Leverage<sup>ST</sup>', whereas domestic acquisition is associated with smaller and statistically less robust (or of the opposite direction) effects.

Third, we check whether the observed differences between foreign acquired, domestically acquired and non-acquired firms are uniquely associated with the crisis and post-crisis years. To investigate this issue, we restrict the sample to include the pre-2008 period and carry out the same analysis as before. Despite the obvious comparability problems with this approach (due to the smaller number of matched targets), the matching estimates for

**Table 8**  
The impact of acquisitions on acquired firms' debt ratios; high-income OECD countries.

Panel (a): Foreign acquisition from high-income OECD countries/Gearing					
Year	Italy		N	Spain	
	ATT			ATT	
0	-0.802***	(0.204)	118	-0.410	(0.288)
1	-1.028***	(0.200)	105	-0.714**	(0.351)
2	-1.196***	(0.236)	94	-1.740***	(0.451)
3	-0.854***	(0.262)	73	-1.718***	(0.557)
Panel (b): Foreign acquisition from high-income OECD countries/Leverage <sup>ST</sup>					
Year	Italy		N	Spain	
	ATT			ATT	
0	-1.266***	(0.450)	126	-0.483	(0.322)
1	-1.952***	(0.489)	105	-1.379***	(0.357)
2	-2.299***	(0.600)	85	-1.959***	(0.464)
3	-1.849***	(0.697)	67	-2.065***	(0.495)

Note: five-nearest neighbor matching. ATT denotes average treatment effect on the treated. N denotes the number of matched targets. Bootstrap standard errors in parenthesis. \*\*\*, \*\*, \* Statistically significant at the 1%, 5% and 10% confidence level, respectively.

the pre-crisis period are similar to those for the full sample period and lead to the same inferences. This suggests that the reported debt effects of foreign acquisitions in Italy and Spain are not driven by the fact that the acquiring firms are originating from countries that were less severely affected by the crisis.

## 5. Discussion and conclusions

In this paper, we investigate the role of foreign versus domestic ownership in reducing the debt levels of acquired (target) firms in Italy and Spain. The empirical literature has been predominately concentrated on the post-acquisition performance relationship of acquiring firms, while measuring performance mainly in productivity and profitability terms (Li et al., 2015; Markides & Ittner, 1994; Ning et al., 2014). In addition, the majority of past research has concentrated on the performance of the acquirer, despite significant differences being identified between the two groups (Shleifer & Vishny, 2003). Our study contributes to this body of literature in key distinct ways.

First, we provide clear evidence of the impact of foreign and domestic acquisitions on debt levels of the target firms and offer an appreciation of how the change in ownership affects the counterparty instead. In order to estimate the causal impact of ownership changes, we control for selection bias by applying propensity score matching techniques. The results confirm our expectations that a change from domestic to foreign ownership leads to a lower reliance on short and long term debt. In fact, our findings show a steady reduction in the gearing and short-term leverage ratios for both Italian and Spanish firms. The reduction in debt is not associated with a change of ownership per se, but only when the ownership is transferred to foreign investors. As such, an acquisition by domestic investors offers no significant reduction in debt. Interestingly, in the case of Spain, our findings suggest a contrary effect, with domestic acquisition actually resulting in an increase of the short-term leverage ratio of target firms and a potential deterioration of a firm's financial health and survival chances.

The above findings offer strong support to both our hypotheses (H1 and H2), denoting the distinct effect of foreign ownership on debt reduction. We can see that foreign ownership not only yields higher profitability and productivity for the target firms (i.e. Arnold & Javorcik, 2009; Hijzen, Martins, Schank, & Upward, 2013), but can further act as a deterrent against debt over-exposure, leading as such to more financially healthy target firms. The proponents of the 'agency' and 'stakeholder' theories have long supported that the presence of foreign investors has the power to enhance managerial control (Heugens et al., 2009), minimize managerial opportunism (Jensen & Meckling, 1976), and increase overall shareholder protection against the risk associated to high leverage (Grossman & Hart, 1982; Wiseman & Catanach, 1997). We offer strong support to the above.

Second, we examine measures of long- and short-term debt, which have never been explicitly examined in the past, to further augment our understanding regarding the overall impact of a change in ownership. We find that foreign ownership reduces significantly both gearing and short-term leverage ratios in both countries. Acknowledging the important role of banks in Italy and Spain, this finding comes to validate Desai et al. (2004), who argue that parent companies would be inclined to reduce external influences on their affiliates when faced with highly regulated and uncertain institutions. Nevertheless, we find that the reduction in the short-term leverage is much larger in total. This might be further explained by the predominance of smaller-sized companies within the two examined countries. Titman and Wessels (1988) have long suggested that smaller sized companies use significantly more short-term debt to finance their operations. Therefore, it could be expected foreign acquirers – out of prudence

– to reduce the target's short-term over-exposure, minimizing as such the associated default risks and their overall external control.

Third, and while the acquisition literature has mainly concentrated on post-acquisition performance from the acquirer's point of view, the evidence suggests that the performance effects for the acquirer and the target companies are not the same (Datta, Pinches, & Narayanan, 1992; Halebian et al., 2009; Shleifer & Vishny, 2003). In this study, we concentrate on the impact that foreign ownership has on target firms and offer new insights on the impact of a takeover deal for these companies. After all, the success of an acquisition deal is often accredited to the integration and strategic fit between the acquirer and the target company (Chatterjee, Lubatkin, Schweiger, & Weber, 1992; Child, Faulkner, & Pitkethly, 2000). Since a foreign acquisition is typically followed by significant operational and managerial changes to the target company (Child et al., 2000), it is imperative to gain a better understanding of the implications of these changes for the company. Our study clearly shows that foreign ownership is positively impacting on the capital structure of target companies, reducing as such their overall risk profile that can potentially strengthen their survival (Beaver, 1966).

Some further interesting findings obtained from our analysis relate to certain firm characteristics of the target companies. For instance, our analysis has showed – in line with past research – that larger and younger firms are more likely to be acquired, especially in less efficient markets and particularly from foreign investors. Apparently, these companies are seen as more reliable investments by foreign investors who tend to be rather 'prudent' in their choices (Abdioglu, Bamiatzi, Cavusgil, Khurshed, & Stathopoulos, 2015).

Finally, the above findings have important policy implications that may contradict the old conservative European agendas in encouraging the emergence of "national champions" (Monti, 2006; Soares, 2008). It is clearly showcased here that foreign acquisitions can benefit significantly acquired (domestic) firms, offering consequently important overall contributions to the domestic economy in which they operate. Taxation and financial benefits, but also spillover effects, sharing new competencies, resources and developing stronger networking alliances with the domestic market (Haskel et al., 2007; O'Donnell & Blumentritt, 1999) are only some of the associated benefits. Therefore, foreign investment opportunities should be welcomed and supported by national governments, especially in the less-efficient bank-based economies. Implementing policies aimed at attracting foreign investment can also be particularly beneficial for countries like Italy and Spain, which are characterized by underdeveloped private equity markets and an overwhelming large share of SMEs, and thus overreliance on bank credit and restricted financing availability for domestic firms.

## 6. Limitations and future research

As outlined in the previous section, our study offers important and novel contributions to the foreign ownership – debt relationship. However, it also has some limitations, which can be used as the starting point for future research work in this area. First, while we can identify the nationality of all acquiring firms, we are able to collect data on other characteristics (such as size, age and financial performance) only for a sub-sample of these firms. Our analysis thus cannot explain whether the observed acquisition effects vary systematically across targets acquired by different types of acquiring firms (e.g. large business groups versus small firms).

Second, due to data availability and the complexity of the research design, our study focuses only on two economies. Extending the sample to include more countries could enable

scholars to examine whether the positive relationship between foreign acquisitions and debt reduction is actually a universal phenomenon, and to explore the conditionality of effects upon host country characteristics, such as the level of financial development and the type of financial system. Likewise, by constructing a multi-national panel dataset and employing a large number of propensity score matched cases, one could investigate which industries can benefit the most from foreign acquisitions, in terms of changes in their capital structure.

Finally, and while we offer several compelling explanations for the motivations behind the reduction in debt levels of the foreign target companies, the scope and structure of the current study do not allow us to explore in more detail the motivations of such a behavior, prioritize among them and/or uncover missing links. A future research based on personal interviews with the decision-makers could offer invaluable insights to our understanding of their motivations, as well as the role that specific managerial characteristics play for their decisions after each acquisition deal.

## Appendix A.

See [Tables A1–A3](#) .

**Table A1**

Distribution of firms by industry.

	Italy		Spain	
	Number of Observations	% of total	Number of Observations	% of total
Manufacture of food products	34605	2.79	42246	3.39
Manufacture of beverages	5742	0.46	8964	0.72
Manufacture of tobacco products	144	0.01	108	0.01
Manufacture of textiles	22068	1.78	10125	0.81
Manufacture of wearing apparel	22545	1.82	8271	0.66
Manufacture of leather and related products	17568	1.42	7812	0.63
Manufacture of wood and of products of wood except furniture	13977	1.13	13590	1.09
Manufacture of paper and paper products	10818	0.87	6174	0.50
Printing and reproduction of recorded media	13554	1.09	14364	1.15
Manufacture of coke and refined petroleum products	1683	0.14	234	0.02
Manufacture of chemicals and chemical products	17532	1.41	13023	1.05
Manufacture of basic pharmaceutical products and pharmaceutical preparations	3411	0.27	2448	0.20
Manufacture of rubber and plastic products	25929	2.09	15246	1.22
Manufacture of other non-metallic mineral products	30726	2.48	24939	2.00
Manufacture of basic metals	12132	0.98	7254	0.58
Manufacture of fabricated metal products, except machinery and equipment	91026	7.34	50094	4.02
Manufacture of computer, electronic and optical products	17334	1.40	4797	0.38
Manufacture of electrical equipment	22023	1.77	7731	0.62
Manufacture of machinery and equipment n.e.c.	62505	5.04	20628	1.66
Manufacture of motor vehicles, trailers and semi-trailers	8208	0.66	6840	0.55
Manufacture of other transport equipment	6759	0.54	2484	0.20
Manufacture of furniture	22050	1.78	13896	1.12
Other manufacturing	13968	1.13	5679	0.46
Repair and installation of machinery and equipment	8613	0.69	7182	0.58
Wholesale and retail trade and repair of motor vehicles and motorcycles	58365	4.70	56358	4.52
Wholesale trade, except of motor vehicles and motorcycles	246204	19.84	282159	22.64
Retail trade, except of motor vehicles and motorcycles	111501	8.99	118206	9.49
Land transport and transport via pipelines	35532	2.86	50517	4.05
Water transport	1710	0.14	1755	0.14
Air transport	594	0.05	936	0.08
Warehousing and support activities for transportation	24444	1.97	26640	2.14
Postal and courier activities	540	0.04	1836	0.15
Accommodation	25173	2.03	33561	2.69
Food and beverage service activities	19710	1.59	37737	3.03
Publishing activities	7488	0.60	7065	0.57
Motion picture, video and television programme production, sound recording and music publishing activities	4410	0.36	5391	0.43
Programming and broadcasting activities	2763	0.22	2574	0.21
Telecommunications	2511	0.20	4977	0.40
Computer programming, consultancy and related activities	23481	1.89	16632	1.33
Information service activities	9243	0.74	2142	0.17
Financial service activities, except insurance and pension funding	5346	0.43	11421	0.92
Activities auxiliary to financial services and insurance activities	5535	0.45	6336	0.51
Real estate activities	54576	4.40	120087	9.64
Legal and accounting activities	5922	0.48	16830	1.35
Activities of head offices; management consultancy activities	20295	1.64	21735	1.74
Architectural and engineering activities; technical testing and analysis	15606	1.26	22617	1.81
Scientific research and development	3060	0.25	1845	0.15
Advertising and market research	12546	1.01	15462	1.24
Other professional, scientific and technical activities	7722	0.62	13518	1.08
Veterinary activities	81	0.01	495	0.04
Rental and leasing activities	6813	0.55	13284	1.07

**Table A1** (Continued)

	Italy		Spain	
	Number of Observations	% of total	Number of Observations	% of total
Employment activities	1044	0.08	3303	0.27
Travel agency, tour operator and other reservation service and related activities	10224	0.82	7929	0.64
Security and investigation activities	3222	0.26	4014	0.32
Services to buildings and landscape activities	7623	0.61	19116	1.53
Office administrative, office support and other business support activities	14832	1.20	12213	0.98
Repair of computers and personal and household goods	3150	0.25	2088	0.17
Other personal service activities	4779	0.39	11250	0.90

**Table A2**

Distribution of firms by size class.

	Italy		Spain	
	Number of Observations	% of total	Number of Observations	% of total
Less than 10	516618	42.80	485586	39.70
Between 10 and 19	315603	26.15	309168	25.28
Between 20 and 49	228447	18.93	292446	23.91
Between 50 and 249	125532	10.40	115155	9.42
250 and more	20790	1.72	20664	1.69

**Table A3**

Balancing tests for matched sample.

Sample		Italy				Spain					
		Mean		t-test		Mean		t-test			
		Treated	Control	t	p >  t	Treated	Control	t	p >  t		
Foreign acquisition/ Gearing	Year 0	ln(Productivity)	12.775	12.708	0.57	0.567	12.254	12.231	0.19	0.848	
		ln(Scale)	3.933	3.796	0.93	0.351	4.098	3.997	0.71	0.480	
		ln(Age)	2.710	2.713	0.03	0.980	2.832	2.759	0.73	0.467	
		ln(K/L)	3.050	3.231	0.92	0.360	2.754	2.648	0.51	0.610	
		ln(Gearing)	4.352	4.534	1.12	0.266	2.294	2.804	1.21	0.226	
		ln(Gearing) <sup>2</sup>	20.782	22.351	1.14	0.253	21.641	18.654	1.30	0.194	
	Year 1	ln(Productivity)	12.760	12.685	0.63	0.532	12.282	12.270	0.09	0.926	
		ln(Scale)	3.929	3.791	0.93	0.355	4.134	4.013	0.80	0.423	
		ln(Age)	2.686	2.725	0.29	0.771	2.864	2.749	0.99	0.322	
		ln(K/L)	2.994	3.195	0.96	0.339	2.798	2.760	0.17	0.866	
		ln(Gearing)	4.298	4.504	1.19	0.237	2.282	2.732	0.94	0.346	
		ln(Gearing) <sup>2</sup>	20.375	22.075	1.17	0.242	23.308	19.832	1.35	0.179	
	Domestic acquisition/ Gearing	Year 0	ln(Productivity)	12.466	12.390	0.81	0.416	11.984	11.998	0.14	0.888
			ln(Scale)	3.913	3.821	0.69	0.491	3.641	3.584	0.57	0.567
ln(Age)			2.663	2.695	0.33	0.745	2.603	2.585	0.18	0.854	
ln(K/L)			2.863	2.938	0.43	0.670	3.110	3.167	0.40	0.690	
ln(Gearing)			4.565	4.600	0.27	0.784	2.933	2.616	1.07	0.285	
ln(Gearing) <sup>2</sup>			22.548	22.815	0.25	0.805	22.055	21.739	0.19	0.846	
Year 1		ln(Productivity)	12.462	12.415	0.48	0.632	11.958	11.980	0.20	0.844	
		ln(Scale)	3.927	3.816	0.81	0.420	3.655	3.605	0.49	0.621	
		ln(Age)	2.702	2.754	0.53	0.595	2.599	2.574	0.23	0.815	
		ln(K/L)	2.881	2.981	0.54	0.591	3.165	3.165	0.00	0.999	
		ln(Gearing)	4.558	4.570	0.09	0.927	2.785	2.629	0.49	0.627	
		ln(Gearing) <sup>2</sup>	22.447	22.569	0.11	0.915	22.074	21.473	0.34	0.732	
Foreign acquisition/ Leverage <sup>ST</sup>		Year 0	ln(Productivity)	12.809	12.708	0.89	0.376	12.206	12.185	0.18	0.855
			ln(Scale)	3.907	3.771	0.95	0.341	4.138	4.012	0.94	0.346
	ln(Age)		2.653	2.640	0.10	0.924	2.792	2.715	0.81	0.418	
	ln(K/L)		3.070	3.265	1.00	0.316	2.721	2.633	0.41	0.683	
	ln(Leverage <sup>ST</sup> )		-0.488	-0.671	0.31	0.758	-2.368	-2.760	0.63	0.527	
	ln(Leverage <sup>ST</sup> ) <sup>2</sup>		24.787	27.779	0.79	0.431	37.409	39.933	0.60	0.547	
	Year 1	ln(Productivity)	12.789	12.665	0.99	0.322	12.245	12.233	0.10	0.918	
		ln(Scale)	3.987	3.852	0.90	0.371	4.123	4.018	0.74	0.463	
		ln(Age)	2.640	2.581	0.36	0.720	2.820	2.684	1.31	0.190	
		ln(K/L)	3.032	3.272	1.12	0.265	2.790	2.665	0.55	0.585	
		ln(Leverage <sup>ST</sup> )	-0.635	-0.773	0.21	0.836	-2.733	-3.133	0.59	0.559	
		ln(Leverage <sup>ST</sup> ) <sup>2</sup>	25.733	28.857	0.74	0.461	38.989	42.629	0.78	0.435	

Table A3 (Continued)

Sample			Italy				Spain			
			Mean		t-test		Mean		t-test	
			Treated	Control	t	p >  t	Treated	Control	t	p >  t
Domestic acquisition/ Leverage <sup>ST</sup>	Year 0	ln(Productivity)	12.453	12.363	0.98	0.327	11.964	11.959	0.05	0.958
		ln(Scale)	3.967	3.825	1.11	0.266	3.666	3.609	0.62	0.538
		ln(Age)	2.663	2.663	0.00	0.999	2.515	2.482	0.32	0.749
		ln(K/L)	2.804	2.961	-0.96	0.339	3.022	2.993	0.22	0.826
		ln(Leverage <sup>ST</sup> )	-0.123	-0.629	1.06	0.289	-3.230	-3.578	0.85	0.396
	Year 1	ln(Leverage <sup>ST</sup> ) <sup>2</sup>	22.885	27.128	-1.38	0.170	43.299	45.394	-0.75	0.456
		ln(Productivity)	12.445	12.387	0.58	0.564	11.956	11.982	-0.24	0.808
		ln(Scale)	3.981	3.855	0.91	0.361	3.692	3.604	0.84	0.400
		ln(Age)	2.670	2.680	-0.09	0.925	2.442	2.474	-0.27	0.790
		ln(K/L)	2.776	2.992	-1.23	0.219	3.053	3.007	0.31	0.754
		ln(Leverage <sup>ST</sup> )	-0.291	-0.557	0.50	0.619	-3.859	-4.092	0.50	0.618
		ln(Leverage <sup>ST</sup> ) <sup>2</sup>	24.067	26.666	-0.75	0.454	47.829	49.067	-0.39	0.699

Note: The test examines the balancing hypothesis for all variables included in the propensity score, based on their pre-acquisition values. Year 0 refers to the sample of matched targets included in the calculation of the ATT in the year of acquisition, whereas Year 1 refers to the sample of matched targets included in the calculations of the ATT in the first year following the acquisition.

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