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# Research in International Business and Finance

journal homepage: [www.elsevier.com/locate/ribaf](http://www.elsevier.com/locate/ribaf)

Full length Article

## Institutional context as a moderator of the relationship between board structure and acquirer returns

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### ARTICLE INFO

#### Keywords:

Mergers and acquisitions  
Board of directors  
Institutional context  
Continental Europe

### ABSTRACT

The objective of this paper is to contribute to the understanding of the supervisory role of the board of directors in the context of mergers and acquisitions (M&As). We focus our study on the European case, for which there is no previous exhaustive evidence on this topic. Using information on 985 mergers and acquisitions carried out over the period 2003–2016 by companies in the major European countries, we analyze the influence of supervisory capacity of the board (small size, higher proportion of outsiders and separated Chairperson-CEO positions) on acquirer returns, differentiating between Anglo-Saxon and continental European contexts. Our results confirm that the effectiveness of corporate governance practices depends strongly on their fit with the broader institutional context. Specifically, we find that a smaller size of the board of directors and the separation of the positions of Chairperson and CEO lead to higher acquirer returns in European Anglo-Saxon countries. By contrast, we do not find evidence that any proxy of supervisory capacity of the board significantly improves acquirer returns in the rest of countries.

### 1. Introduction

Mergers and acquisitions are major corporate events in companies, as they involve long term investments, and affect firm value, organizational structure and overall industry dynamics.

The decision to undertake a merger or acquisition is often initiated by the Chief Executive Officer (CEO) of the company (Fracassi and Tate, 2012). As executives can pursue personal interests (more prestige and salaries) through mergers and acquisitions (Mueller, 1969), the board of directors should control these decisions, ensuring that only those growth strategies that are beneficial for the company would be implemented (Aktas et al., 2016).

Under the influence of Agency Theory, previous literature states that boards characterized by smaller size, higher proportion of outside directors and separation of CEO-Chairperson positions, are more efficient in fulfilling their supervisory role. Based on these considerations, some studies in the US have examined the effect of said characteristics of the board on the performance of acquiring firms (Byrd and Hickman, 1992; Hayward and Hambrick, 1997; Desai et al., 2005; Masulis et al., 2007; Walters et al., 2007; Goranova et al., 2017) and suggest that supervision by the board plays a crucial role in creating shareholder value through mergers and acquisitions.

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<https://doi.org/10.1016/j.ribaf.2021.101420>

Received 16 January 2020; Received in revised form 25 February 2021; Accepted 5 March 2021

Available online 12 April 2021

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Nevertheless, as far as we know, evidence on this issue for European mergers and acquisitions is very limited and fragmented. Only a few studies such as [Dahya et al. \(2019\)](#) for the UK, or more recently, [Defrancq et al. \(2021\)](#) for continental European countries, have analyzed the influence of certain characteristics of the board of directors on acquirer returns in mergers and acquisitions. This paper intends to contribute to this literature by analyzing whether the supervisory capacity of the board of directors, proxied by a small board size, a higher proportion of outsiders on the board and a separation of the CEO-Chairperson roles (as well as a compound index that considers the three variables simultaneously), significantly influences the results obtained by the shareholders of EU15 acquiring companies over the period 2003–2016.

A peculiarity that needs to be taken into consideration when analyzing the European case is that in Europe two different corporate governance models coexist. The economies of the UK and Ireland share similar characteristics with the US, falling under the "Anglo-Saxon" model of corporate governance: greater legal protection of minority shareholders, more developed capital markets, and dispersed ownership structures. On the contrary, continental European companies have a more concentrated ownership structure and operate in an environment with weaker investor protection and less developed capital markets ([La Porta et al., 1997](#)).

Some authors highlight the importance of institutional context when directors' behaviors and their effectiveness are analyzed ([Yoshikawa and Zhu, 2012](#)). The role of the board of directors may differ depending on the institutional context and its complementarity with other control mechanisms ([Lipton and Lorsch, 1992](#); [Aguilera and Jackson, 2003](#); [Aguilera et al., 2018](#)). In the Anglo-Saxon model, as a result of the separation of ownership and control, the board of directors must be configured primarily as a tool for supervision and control, aimed at aligning the interests of those who manage the company with the interests of shareholders ([Fama and Jensen, 1983a, 1983b](#)). By contrast, in the continental European model, a few shareholders typically hold large stakes in companies and they use these shareholdings in order to control management decisions ([Martynova and Renneboog, 2011b](#)). In this context, additional features of the board, like providing access to external resources or maintaining social and business connections ([Pfeffer and Salancik, 2003](#)), prevail over the supervisory role of the board. That is why, focusing specifically on merger and acquisition deals, we study whether recommendations that are intended to guarantee a greater supervisory capacity of the board over management decisions (smaller size, greater independence and separation of positions of Chairperson and CEO) are equally effective and necessary in both institutional settings.

The analyses performed in this study using information for mergers and acquisitions carried out over the period 2003–2016 by companies in the major European countries do not support the hypothesis that, greater supervisory capacity of the board will always lead to higher acquirer returns. On the one hand, we find that a higher proportion of outsiders in the board negatively influences acquirer returns. This result can be interpreted as supporting the crucial role that inside (or executive) directors play on making good decisions in the context of major events like mergers and acquisitions. On the other hand, and in relation to board size and CEO duality, our results confirm that the effectiveness of corporate governance practices depends strongly on their fit with the broader institutional context. Specifically, we find that a smaller size of the board of directors and the separation of the positions of Chairperson and CEO lead to higher acquirer returns, but only for Anglo-Saxon acquirer companies. By contrast, we do not find evidence that any proxy of supervisory capacity of the board significantly improves acquirer returns in the rest of countries. Therefore, corporate governance practices aimed at aligning the interests of shareholders and management are only effective in countries where separation of ownership and control is the main corporate governance problem (Anglo-Saxon countries).

Our study contributes to the M&A and corporate governance literature in the following ways. On one hand, it extends the limited literature on European M&As, since despite the growing importance of Europe in the worldwide M&A market ([Drobetz and Momtaz, 2019](#)), empirical research on the value effects of European acquisitions remains limited to date ([Mateev and Andonov, 2018](#)). On the other hand, by testing the effect that the configuration of the board of directors has on European acquirer returns and differentiating by institutional context, the study fills an important gap in the literature as there is no previous evidence on this issue. The results confirm the hypothesis "one size does not fit all". The recommendations included in the so-called Codes of Good Governance on the characteristics of the boards of directors that contribute to a better functioning of the board are based on notions of best practice that derive from the Anglo-Saxon context. However, our paper casts doubt on its effectiveness in other institutional contexts and reveal the need to go beyond the Agency Theory and employ other theoretical approaches to understand the truly role of board of directors.

## 2. M&As, board of directors and institutional context: research hypotheses

### 2.1. Mergers and acquisitions

A large part of the literature on mergers and acquisitions has focused on studying whether or not these transactions create value for the shareholders of the companies involved.

The majority of the evidence available refers to the USA and the UK ([Mateev and Andonov, 2018](#)), countries in which there are highly developed capital markets and where mergers and acquisitions have been common, especially in the USA, throughout the various waves<sup>1</sup>. However, evidence of the profits obtained by shareholders through mergers and acquisitions in continental Europe did not start to be developed until the 1990s and is much less extensive. There are studies focused on specific European countries (the Spanish case was analyzed by [Fernández and Gómez \(1997\)](#), the French case by [Hamza \(2011\)](#), the German case by [Buhner \(1991\)](#), the Finnish case by [Holmström \(2017\)](#), etc.) and some others that contribute evidence for the whole of European countries, including the

<sup>1</sup> The first four merger and acquisitions waves can be fairly be called US takeover waves ([Black, 1999](#)).

UK (Goergen and Renneboog, 2004; Campa and Hernando, 2004; Faccio et al., 2006; Martynova and Renneboog, 2011a; Mateev and Andonov, 2018).

It is well-established in the financial literature, both for USA and Europe, that the main beneficiaries of M&As are the shareholders of the acquired company (the “target”). However, there is no evidence of clear benefits for the acquiring company shareholders. Some studies show small losses for the shareholders of the acquiring companies, others show small gains, and many of them obtain non-significant results (see reviews by Jensen and Ruback, 1983; Jarrell et al., 1988; Halebian et al., 2009; Mulherin et al., 2017; King et al., 2019).

Given that the empirical evidence indicates that mergers and acquisitions do not generally profit the shareholders of the acquiring companies and that failure rates are also high (Giessner et al., 2016), several authors point to *managerial self-interest* and *managerial hubris* as the main drivers that justify many mergers and acquisitions. The hypothesis of *managerial self-interest* (also called the Empire Building Theory (Mueller, 1969)) suggests that mergers and acquisitions respond to the individual interests of the acquiring company executives who see their prestige and wealth increase as a result of managing larger companies (Mueller, 1969). This leads executives to undertake mergers or acquisitions that, although they personally benefit from them, show small, or no, profits for their shareholders (Morck et al., 1990; Slusky and Caves, 1991). The *hubris* hypothesis (Roll, 1986) suggests that excessive optimism and self-confidence of managers leads them to overestimate the synergies that can be achieved and to over-pay for acquisitions that do not benefit shareholders. Authors such as Hayward and Hambrick (1997); Mueller and Sirower (2003) or Malmendier and Tate (2008) obtained results that are congruent with this hypothesis.

## 2.2. Board of directors

The shareholders of large companies delegate the responsibility for monitoring, compensating and replacing managers, and the approval of the large strategic projects to the board of directors (Fama and Jensen, 1983b).

Several studies have analyzed the influence of the characteristics of the board on business performance (De Andrés et al., 2005; Guest, 2009; Baglioni and Colombo, 2013, among others), but the results have not been conclusive (Daily et al., 2003). However, in order to evaluate the role played by the board of directors, it may be more appropriate to focus on specific decisions rather than on the overall results achieved by the companies. Accordingly, the role of the board of directors is crucial in the context of large and infrequent operations such as mergers and acquisitions (Hermanlin and Weisbach, 2003; Redor, 2016).

The CEO typically plays a decisive role in formulating and implementing the acquisition strategy whilst the board must approve the acquisition and the financial terms surrounding it (Ben Amar et al., 2011). A well-functioning board of directors provides both valuable advice to management and a check on its policies, so in the context of mergers and acquisitions, the board of directors must ensure that the transaction is beneficial for the company. However, the ability to oppose a decision proposed or initiated by the CEO depends on the board's independence in relation to the CEO. Frequently, the CEO exercises very strong influence over the members of the board and therefore it is difficult for them to show opposition to his/her decisions.

Board attributes influence the quality of deliberation and decision-making as well as the ability of directors to exercise control over management (Pearce and Zahra, 1992). The total number of board members, the percentage of them that are outside members (with no ties to the management team) and the separation of the positions of Chairperson of the board and CEO influence the oversight capacity of the board, facilitating or hindering the possibility of it questioning the CEO's decisions.

Furthermore, as the size of the board increases, it is more likely that problems of *free-riding*, coordination, etc. will arise among the members that hinder the oversight activity of the board (Jensen, 1993). Moreover, smaller boards make decisions more efficiently (Yermack, 1996). The percentage of outside members on the board is also very relevant, since they contribute to minimizing agency problems between managers and shareholders (Fama and Jensen, 1983b). The more outside directors there are, the more likely it is that they can play an independent role in the decision-making process of the firm and vigilantly monitor the top management team (Hayward and Hambrick, 1997), and the less likely they are to succumb to pressures from the CEO (Deutsch et al., 2007). Regarding the duality of the CEO, that is the positions of Chairperson of the board and CEO being assumed by the same person, Fama and Jensen (1983a) argue that, for obvious reasons, it negatively influences the ability of the board to correctly carry out its control function. The concentration of power associated with CEO duality could encourage CEO entrenchment (Finkelstein and D'Aveni, 1994) and could thus be detrimental to shareholders' interests.

A variety of studies carried out in the USA highlight the importance of the supervisory role of the board in the results obtained from mergers and acquisitions by the acquiring company's shareholders. There is empirical evidence that shows the negative and significant influence of the size of the board (Carline et al., 2009; Ben Amar et al., 2011; Kolasinski and Li, 2013), as well as the positive and significant influence of the percentage of outside directors, (Hayward and Hambrick, 1997; Walters et al., 2007; Desai et al., 2005), the percentage of independent directors (Byrd and Hickman, 1992), the separation of the CEO and Chairperson roles (Hayward and Hambrick, 1997; Masulis et al., 2007), or aggregate measures of the board's supervisory capacity (Goranova et al., 2017).

There are few studies that analyze the influence that the characteristics of the board of directors have on acquirer returns for the European case. For UK acquirers, and considering only domestic M&A, Dahya et al. (2019) find a positive relationship between acquirer returns and the presence of outside directors on the corporate board (when targeting publicly traded firms), but they do not examine the influence of other characteristics of the board. Defrancq et al. (2021), on the other hand, investigates the influence of the size and the composition of acquirer boards on M&A value creation for acquirer shareholders in a continental European setting. In relation to the variables of the board considered in the present study, they find a positive effect for the percentage of independent directors, an insignificant effect for board size, and mixed results regarding CEO duality.

Therefore, although there are studies that have analyzed the influence of the characteristics of the board of directors on acquirer

returns for the European case, as can be verified by the review of the literature that was carried out, evidence is still very scarce and fragmented. Nonetheless, the Good Governance Codes published in European countries generally advocate a limited board size, a significant number of outsiders on the board and separated CEO-Chairperson positions (in order to avoid the excessive accumulation of power in the CEO). It seems, then, necessary to expand research in this area and to verify if said recommendations have achieved positive results in practice.

Taking into account these recommendations and previous evidence, Hypothesis 1 is formulated as follows:

**H1.** *A greater capacity of supervision of the board (smaller board size, greater proportion of outsiders, and separation of the positions of the CEO and Chairperson) will have a positive influence on acquirer returns.*

### 2.3. Legal environment as a moderator

A peculiarity that arises when analyzing the European case that is not, however, present in the USA is that in Europe there are two different corporate governance models: the Anglo-Saxon model (in the UK and Ireland) and the continental European model.

As [Jackson and Deeg \(2019\)](#) postulate, Institutional Theory is now perhaps the most common lens for understanding cross-national differences in business organization. Within Institutional Theory, various studies justify the differences between the two models based on the regulatory systems that underpin them. The work of [La Porta et al. \(2000\)](#) or [Filatotchev et al. \(2013\)](#), among others, show how different legal traditions (common vs. civil law) are related to different levels of investor protection, affecting the ownership structure of the companies. Common law is based on jurisprudence and is characteristic of Anglo-Saxon countries. Civil law is based on codes and is typical of continental European countries. These studies argue that common law guarantees greater protection for minority shareholders, favoring a dispersed ownership structure and developed capital markets. On the contrary, civil-law countries grant less protection to minority shareholders and lead to a greater concentration of property and less developed capital markets. For example, mean ownership concentration is around 20 % in the United Kingdom compared to 34 % in France or the highest level of 67 % in Greece ([Aguilera and Jackson, 2010](#)).

The different ownership structures define the agency conflicts prevalent in each economy. In countries with a dispersed ownership structure, the predominant agency problem is between shareholders and managers as formulated by [Jensen and Meckling \(1976\)](#). Ownership concentration mitigates this agency conflict between shareholders and managers given that large shareholders have greater incentives to monitor management behavior ([Shleifer and Vishny, 1986](#)). However, once the ownership concentration reaches a certain level, large shareholders can use their status to obtain private benefits at the expense of minority shareholders when their respective interests do not coincide ([Shleifer and Vishny, 1997](#); [La Porta et al., 2000](#); [Dyck and Zingales, 2004](#); [Villalonga and Amit, 2006](#)). This gives rise to the appearance of the so-called type II agency problem (between majority and minority shareholders), which is the prevalent agency problem in the continental European countries ([Lazarides et al., 2009](#)).

The effectiveness of corporate governance solutions to various conflicts of interest is far from being universal, as suggested by agency-inspired research in economics and finance. Effectiveness does not result from a universal “one best way”, but suggests that particular practices will be effective only in certain combinations and specific institutional environments ([Filatotchev et al., 2013](#); [Aguilera et al., 2018](#); [Uribe-Bohorquez et al., 2018](#); [Caiazza et al., 2019](#)).

Recommendations regarding the size, structure, functioning, etc. of the boards of directors in force in the different countries have a clear Anglo-Saxon influence, in spite of the fact that the agency problem between shareholders and managers is not as relevant in the continental European countries. The recommendations included in the codes of good governance are based on notions of best practice derived from the Anglo-Saxon context ([Aguilera and Cuervo-Cazurra, 2004](#); [Aguilera and Jackson, 2003](#); [Fiss and Zajac, 2004](#)). However, their effectiveness may be limited in other institutional contexts. For example, [Chen et al. \(2011\)](#) indicate that good governance practices in OECD countries (active board of directors, separation of Chairperson and the CEO, significant presence of outside directors, etc.) cannot mitigate corporate governance problems in emerging economies. Likewise, [Uribe-Bohorquez et al. \(2018\)](#) analyze how the institutional context represented by the legal system can moderate the relationship between board independence and efficiency.

When analyzing the case for Europe, it is necessary to take into consideration that in the continental European countries the predominant problem of corporate governance differs from that of the Anglo-Saxon countries. As ownership structure is more concentrated, significant shareholders directly control managers and agency conflicts between shareholders and managers are less prevalent. Therefore, we believe that corporate governance practices aimed at increasing the board’s supervisory capacity (smaller board size, greater proportion of outsiders, and separation of the positions of CEO and Chairperson) should be more effective in the Anglo-Saxon countries (from whose context they originate) than in the countries of continental Europe. As other authors ([Drobtz and Montaz, 2019](#)) have shown, legal origin matters in European M&As, therefore it is necessary to distinguish between different models of corporate governance. We formulate the following hypothesis:

**H2.** *The influence of greater supervisory capacity by the board (smaller board size, greater proportion of outsiders, and the separation of the CEO and Chairperson positions) on acquirer returns will be greater in the Anglo-Saxon European countries than in the continental European countries.*

**Table 1**

Number of observations by country and year. The table shows the distribution of the sample (985 acquirer firms) by country and year.

	YEAR														TOTAL
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Austria	1	2	2	1	2	1	0	4	2	0	0	0	0	1	16
Belgium	0	3	2	2	9	4	1	1	3	2	0	0	1	0	28
Denmark	2	0	2	2	1	1	0	0	1	0	0	1	2	1	13
Finland	1	1	4	4	3	1	4	3	1	0	0	1	1	4	28
France	1	5	5	17	7	12	10	13	12	9	12	12	9	6	130
Germany	3	3	8	7	8	6	5	3	5	3	5	8	4	6	74
Greece	2	1	1	3	3	4	2	1	0	2	0	0	0	0	19
Ireland	1	2	0	1	1	2	1	0	4	1	3	1	3	0	20
Italy	4	3	8	4	7	4	4	3	5	4	4	5	2	7	64
Luxembourg	0	0	1	0	0	2	0	0	0	0	1	2	0	1	7
Netherlands	2	0	5	9	10	6	1	1	4	4	0	5	3	2	52
Portugal	0	0	0	1	0	0	0	1	1	2	0	1	0	0	6
Spain	3	3	5	15	7	7	4	9	6	5	2	6	0	5	77
Sweden	3	1	5	13	5	3	0	3	5	4	5	7	6	4	64
United Kingdom	15	18	33	33	43	37	25	37	32	23	24	32	21	14	387
TOTAL	38	42	81	112	106	90	57	79	81	59	56	81	52	51	985

### 3. Data and methods

#### 3.1. Sample

To construct our sample, we gathered information from the Thomson Financial SDC Mergers and Acquisitions Database on the mergers and major acquisitions announced by EU15 listed companies between January 1, 2003 and December 31, 2016. The transactions included in our sample were finally successful and are catalogued in the database as Merger (a combination of businesses takes place or 100 % of the stock of a public or private company is acquired) or Acquisition of Majority Interest (the acquirer must have held less than 50 % and be seeking to acquire 50 % or more, but less than 100 % of the target company's stock). We identified 9629 deals that met these criteria. We further required that deal value and method of payment are reported by SDC, which resulted in a sample of 4079 deals. Since we are interested in analyzing the effect of the characteristics of the board of directors in acquirer returns, we required information on board's size, non-executive board members and CEO-Chairman duality for the acquirer firm, to be available in Eikon database. This produces a sample of 1005 deals. Finally, we required the acquirer has annual financial statement information and stock return data (a minimum of 100 daily returns in the period ending 61 days before the announcement) on DataStream, which leaves a final sample of 985 deals to be analyzed.

Table 1 shows the number of mergers and acquisitions included in the sample for each of the countries and for each of the years of the study that constitute the analysis sample. As shown in the table, UK is the country of the sample that concentrates the largest volume of activity, as is also the case, for example, in the study by Martynova and Renneboog (2006).

#### 3.2. Dependent variable

As a measure of the impact of the decision to undertake a merger or acquisition on the wealth of the acquiring company's shareholders, we have calculated the abnormal returns of the bidding firm's stock, using event study methodology.

This has been the dominant methodology to measure the impact of mergers and acquisitions on firm performance (Datta et al., 1992; Martynova and Renneboog, 2011a). Event studies are based on the assumption of rational behavior by the capital markets or, in other terms, on their informational efficiency (Brown and Warner, 1980; MacKinlay, 1997). Under this assumption, the stock price of a company faithfully reflects investors' expectations of its long-term efficiency and profitability. Any public information that affects the value of the company will be immediately incorporated into the price of the shares by the market. Therefore, by analyzing the evolution of the stock prices of the affected companies for a short period of time around the announcement date of an event and, through the appropriate isolation of other factors, the influence of the event on the value of the companies can be measured (Campbell et al., 1997; Fama et al., 1969).

To estimate abnormal returns, that is, the part of the stock's return attributable to the announcement of the merger or acquisition, we use the market model, as shown in Eq. (1):

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (1)$$

where  $AR_{it}$  represents the abnormal return for the common stock of acquirer  $i$  on day  $t$ ;  $R_{it}$  is the observed return for the common stock of acquirer  $i$  on day  $t$ ; and  $R_{mt}$  is the market return (proxied by the return of the stock market index of acquirer( $i$ )'s home country) on day  $t$ . Daily returns for the period  $t-300$  through  $t-61$ , are used to estimate market model parameters for each acquirer firm ( $\alpha_i$  and  $\beta_i$ ); day  $t$  represents the announcement date. We require a minimum of 100 daily returns, or the case is deleted.

Abnormal returns are accumulated in intervals or event windows ( $t_1, t_2$ ):

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it} \quad (2)$$

$CAR_i(t_1, t_2)$ , represents the abnormal returns of acquirer  $i$  accrued between days  $t_1$  and  $t_2$ .

It is convenient to use short intervals since the larger the event window, the greater the probability that other events will occur that contaminate the results obtained. With a short event window, a researcher can be reasonably confident that an abnormal return is due to the event in question (McWilliams and Siegel, 1997). Consequently, the dependent variable included in the models is  $CAR_i(-1, +1)$ .

#### 3.3. Independent variables

As variables related to board supervision and in keeping with other authors (Carline et al., 2009; Ben Amar et al., 2011) the following variables have been included in the models:

BOARDSIZE: the natural logarithm of the total number of board members.

NONEXEC: percentage that represent outside board members (non-executive) over total members in the board.

CEODUALITY: dummy variable that captures the leadership structure of the company. The variable takes the value 1 when the CEO is also the board Chairperson and 0 otherwise.

These variables are measured at the end of the year prior to the announcement of the takeover.

### 3.4. Control variables

We control for a series of variables identified in the M&A literature as being likely to affect the level of acquirer announcement returns obtained by the shareholders of the acquirer (see, for example, [Byrd and Hickman, 1992](#); [Masulis et al., 2007](#); [Golubov et al., 2012](#); [Goranova et al., 2017](#); [Tunyi, 2020](#)). These variables represent characteristics of either the firms involved or of the transaction itself:

**FSIZE:** firm size of the acquiring firm is measured as the logarithm of the asset value of the acquiring company at the end of the year prior to the announcement of the takeover.

**LEVERAGE:** Leverage of the acquiring firm is: (total assets of the acquiring company minus equity)/ total assets of the acquiring company, calculated at the end of the year prior to the announcement of the takeover.

**MTB:** Market-to-book ratio of acquiring firm is calculated as the market value of equity 4 weeks prior to the acquisition divided by the book value of equity at the end of the year prior to the announcement.

**CFTOEQUITY:** Cash flow to equity ratio of acquiring firm is measured by earnings after interest, dividend and taxes but before depreciation divided by book value of equity at the end of the year prior to the announcement.

**SIGMA:** Standard deviation of the acquiring firm's abnormal returns over the period (-205, -61) prior to the deal announcement.

**RUNUP:** Stock price runup is calculated as the cumulative abnormal returns (CARs) of the acquiring firm over the window (-205, -61) prior to the deal announcement.

**FEMALEBOARD:** Percentage of board seats in the acquiring firm occupied by women at the end of the year prior to the announcement.

**CROSSBORDER:** Dummy variable that takes on the value 1 when acquirer nation and target nation are not the same and 0 otherwise.

**RELATED:** Dummy variable coded as 1 if mergers and acquisitions involving firms in the same industry and 0 otherwise.

**HOSTILE:** Dummy variable that takes on the value of 1 if the transaction is considered hostile and 0 otherwise.

**CASH:** Dummy variable coded as 1 when the merger was funded by cash and 0 when it was not.

**RELSIZE:** Value of the transaction divided by the bidder's market value of equity at the end of the year prior to the announcement.

**PDI:** To capture the cultural differences between the acquirer nation and target nation, we use the difference between the acquirer and target countries scores of the Power Distance Index<sup>2</sup>.

Dummy variables have also been included in the models to control for the effect of the industry and country (Industry Effects and Country Effects). Anglo-Saxon acquirers (from Ireland and UK) are grouped under the same category using a dummy variable (ANGLO).

### 3.5. Descriptive analysis

In this section a descriptive analysis of the sample is carried out. [Table 2](#) shows the main descriptive statistics of the dependent variable and the explanatory variables included in the models, both for the total sample and for each institutional context. The table also includes the results of the tests for differences in means and medians between the two subsamples. For the cumulative abnormal returns (CARs), asterisks are used to indicate whether their mean/median values are significantly different from zero.

With regards to the dependent variable (CAR), it shows a mean value of 0.66 % which is significantly different than zero. Therefore, we can affirm that, on average, the acquiring companies obtain positive results in the M&A transactions carried out. This data is in line with those reported in other studies. For example, [Martynova and Renneboog \(2011a\)](#) show average abnormal returns of 0.53 % for bidding firms in the European Market while [Tampakoudis et al. \(2018\)](#) report a value of 0.46 % for the (-1, +1) window in the European M&A market.

If the legal context is differentiated for, the existence of statistically significant differences between the average returns obtained by the acquirers in the Anglo-Saxon versus continental European context is verified, with average CARs obtained by companies in the Anglo-Saxon context being higher. These results are in line with those found in [Goergen and Renneboog \(2003\)](#) who confirm that bidding shareholders in the U.K. earn more than those in continental Europe. Similarly, [Humphery-Jenner \(2012\)](#) observes, for example, that English legal origin acquirers outperform French and German legal origin bidders. Furthermore, authors such as [Martynova and Renneboog \(2011a\)](#) or [Drobtz and Momtaz \(2019\)](#) also note differences on takeover returns depending on the legal context of the countries. Nevertheless, it is also important to note, that when median values are considered in our sample, differences are not statistically significant.

Regarding bidder characteristics (Panel A), the mean bidder size (total assets) in our sample is \$94,678 million, (65 %, on average, financed by debt). Mean bidder market to book ratio of equity is 2.66. The average value of the cash flows to equity ratio in our sample is 0.06. Bidders exhibit an average run-up of -0.5 % in pre-announcement period, and average sigma (volatility) is 0.014. Considering differences between the two subsamples, bidders from continental European countries appear to be bigger, more leveraged, with lower valuation and cash flow to equity ratios and lower volatility than European Anglo-Saxon bidders.

As for the characteristics of the board of directors, the average boards are made up of 12 members of which the majority are non-executive directors (78 %) and only 11.8 % are women. In 23 % of the cases the positions of Chairperson and CEO are assumed by the

<sup>2</sup> . The Hofstede cultural indicators have been used to obtain the information on the Power Distance Index (<http://geert-hofstede.com/>).

**Table 2**

Descriptive Statistics: Total Sample and Subsamples. This table presents summary statistics of the dependent variable and the explanatory variables, both for the total sample and for the Anglo-Saxon context (UK and Ireland) and the continental Europe context (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Luxembourg, Netherlands, Portugal, Spain, Sweden and Italy). For the variable CAR (cumulative abnormal returns), asterisks are used to indicate whether their mean/median values are significantly different from zero. The table also includes in the last column the results of the tests for differences in means and equality of medians for each variable for Anglo-Saxon bidders versus continental European bidders. The number of observations is 985 (Anglo-Saxon context = 407 observations; continental Europe Context = 578 observations).

	All sample (1)		Anglo-Saxon context (2)		continental Europe context (3)		Differences (2)-(3)	
	Mean	Median	Mean	Median	Mean	Median	p-value Mean	p-value Median
Panel A: Bidder Characteristics								
CAR (-1,+1) (%)	0.660***	0.287***	0.945***	0.381***	0.460***	0.228***	0.065	0.631
FSIZE <sup>(1)</sup>	94,678.86	7,772.66	35,534.01	3,345.25	136,325.850	15,017.56	0.000	0.000
LEVERAGE	0.656	0.645	0.623	0.624	0.679	0.661	0.000	0.035
MTB	2.656	2.030	2.909	2.03	2.478	2.030	0.074	0.000
CFTOEQUITY	0.058	0.051	0.071	0.064	0.048	0.041	0.000	0.000
SIGMA	0.014	0.013	0.016	0.014	0.013	0.012	0.000	0.000
RUNUP	-0.005	-0.004	-0.005	-0.004	-0.005	-0.004	0.961	0.970
FEMALEBOARD	11.804	10	10.819	10	12.497	8.515	0.024	0.233
BOARDSIZE <sup>(1)</sup>	11.710	11	9.912	9	12.976	12	0.000	0.000
NONEXEC (%)	78.116	78.570	64.260	64.295	87.873	91.670	0.000	0.000
CEODUALITY	0.228	-	0.106	-	0.315	-	0.000	-
Panel B: Transaction Characteristics								
CROSSBORDER	0.620	-	0.568	-	0.657	-	0.004	-
RELATED	0.458	-	0.479	-	0.443	-	0.262	-
HOSTILE	0.005	-	0.002	-	0.007	-	0.332	-
CASH	0.520	-	0.666	-	0.417	-	0.000	-
RELSIZE	0.138	0.020	0.185	0.028	0.105	0.016	0.047	0.001
PDI	-5.446	0	-8.179	-3	-3.521	0	0.000	0.000

Note: <sup>(1)</sup> In order to more easily interpret the results, in this table firm size is measured as total assets expressed in US\$ millions and board size is measured as the total number of directors.

\*\*\* Indicates  $p < 0.01$ .

same person. If attention is given to the analysis by sub-samples, it can be seen that in the Anglo-Saxon countries the boards are smaller (on average, three directors less than in the continental European countries), there is a smaller percentage of outside directors (64 % compared to 88 % for the continental European countries), the percentage of board seats occupied by women is a bit smaller (10.8 % compared to 12.5 % for the continental European countries) and the separation of positions of Chairperson and CEO is more frequent (there is a unified leadership structure in only 10 % of the Anglo-Saxon acquiring firms as compared to 31 % for continental acquirers). These data reveal information concerning the existence of differences in corporate governance structures depending on the institutional context, which will later translate to different results in acquirer returns as will be shown in the estimated models.

With regards to the type of transactions in the sample (Panel B of the table), results show that the percentage of hostile transactions is very low (0.5 %), approximately half of the transactions are related (46 %) and 62 % are cross-border. On the other hand, for 52 % of the transactions in the sample the payment method is cash only. Transaction value of the deal is, on average, 14 % of the market value of acquirer. If the institutional context is considered, it is observed that in the Anglo-Saxon context the percentage of cross-border transactions is slightly lower while the proportion of cash transactions and the relative size of the deals is higher than in continental Europe context.

The correlations matrix of the different variables is shown in Table 3. These correlations are below the 0.7 threshold that is commonly set as the limit for multicollinearity.

### 3.6. Model specification

Cross-sectional regression models were defined to analyze the effect that the variables related to the board's supervisory capacity exert on acquirer announcement returns, while controlling for firm and deal characteristics that might explain those returns. The models also incorporate industry effects and country effects. The dependent variable is the CAR (%) experienced by bidder firms around the deal announcement date over a 3-day event window (i.e., CAR(-1,+1)). The definitions of the explanatory variables are found in sections 3.3 and 3.4 of the paper.

To test Hypothesis 1, we ran the following pooled cross-sectional OLS regression (Model 1), where firm notation (i) was dropped for convenience:

$$CAR(-1,+1) = \beta_0 + \beta_1 BOARDSIZE + \beta_2 NONEXEC + \beta_3 CEODUALITY + \beta_4 FSIZE + \beta_5 LEVERAGE + \beta_6 MTB + \beta_7 CFTOEQUITY + \beta_8 SIGMA + \beta_9 RUNUP + \beta_{10} FEMALEBOARD + \beta_{11} CROSSBORDER + \beta_{12} RELATED + \beta_{13} HOSTILE + \beta_{14} CASH + \beta_{15} RELSIZE + \beta_{16} PDI + \beta_{17} ANGLO + \gamma + \varepsilon \quad (3)$$

Given that Hypothesis 1 postulates that a greater capacity of supervision by the board (smaller board size, greater proportion of



**Table 3**

Correlation Matrix. The table presents pairwise correlations of the variables.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
CAR (-1,+1) (1)																
FSIZE (2)	-0.156															
LEVERAGE (3)	-0.069	0.520														
MTB (4)	-0.019	-0.106	0.017													
CFTOEQUITY (5)	0.065	-0.326	-0.358	0.254												
SIGMA (6)	0.053	-0.362	-0.170	-0.083	0.011											
RUNUP (7)	-0.018	0.028	0.037	-0.042	-0.013	0.015										
FEMALEBOARD (8)	-0.039	0.120	-0.035	0.025	-0.049	-0.136	-0.018									
CROSSBORDER (9)	0.005	0.079	-0.100	0.013	0.086	-0.049	-0.022	0.067								
RELATED (10)	-0.020	-0.006	0.061	0.072	0.051	0.099	-0.053	-0.017	0.148							
HOSTILE (11)	-0.048	0.062	-0.024	-0.015	-0.001	-0.045	-0.024	-0.011	0.026	0.020						
CASH (12)	0.082	-0.197	-0.160	0.091	0.135	0.004	-0.016	0.069	0.131	-0.038	-0.017					
RELSIZE (13)	0.131	-0.224	-0.157	-0.052	0.132	0.132	0.001	-0.037	-0.020	0.080	-0.006	-0.048				
PDI (14)	0.031	0.025	-0.009	-0.073	-0.057	-0.021	0.010	0.051	-0.227	-0.093	0.029	0.001	0.048			
BOARDSIZE (15)	-0.112	0.623	0.367	-0.092	-0.221	-0.213	0.090	0.040	-0.009	0.056	0.067	-0.194	-0.131	0.089		
NONEXEC (16)	-0.112	0.379	0.083	-0.029	-0.085	-0.181	-0.055	0.127	0.198	0.018	0.064	-0.170	-0.055	0.000	0.200	
CEODUALITY (17)	-0.005	0.156	0.116	0.003	-0.032	-0.064	-0.007	0.096	0.002	0.039	0.063	-0.077	-0.028	0.181	0.193	0.044

outsiders, and the separation of the positions of the CEO and Chairperson) will have a positive influence on acquirer returns, negative signs for the coefficients of the variables *BOARDSIZE* and *CEODUALITY* ( $\beta_1$  and  $\beta_3$ , respectively) and a positive sign for the coefficient of the variable *NONEXEC* ( $\beta_2$ ) were expected.

To test Hypothesis 2 (the influence of the board's supervisory capacity on acquirer returns is greater in the Anglo-Saxon context), the interaction between the dummy variable *ANGLO*<sup>3</sup> (which differentiates the two institutional contexts) and the three variables related to the board's supervisory capacity (*BOARDSIZE*, *NONEXEC* and *CEODUALITY*) are introduced into the model. The model estimated (Model 2) is as follows:

$$\begin{aligned} \text{CAR}(-1,+1) = & \beta_0 + \beta_1 \text{BOARDSIZE} + \beta_2 \text{NONEXEC} + \beta_3 \text{CEODUALITY} + \beta_4 \text{BOARDSIZE} \times \text{ANGLO} + \beta_5 \text{NONEXEC} \times \text{ANGLO} \\ & + \beta_6 \text{CEODUALITY} \times \text{ANGLO} + \beta_7 \text{FSIZE} + \beta_8 \text{LEVERAGE} + \beta_9 \text{MTB} + \beta_{10} \text{CF} \text{TOE} \text{EQUITY} + \beta_{11} \text{SIGMA} + \beta_{12} \text{RUNUP} + \beta_{13} \text{FEMALEBOARD} \\ & + \beta_{14} \text{CROSSBORDER} + \beta_{15} \text{RELATED} + \beta_{16} \text{HOSTILE} + \beta_{17} \text{CASH} + \beta_{18} \text{RELSIZE} + \beta_{19} \text{PDI} + \beta_{20} \text{ANGLO} + \gamma + \varepsilon \end{aligned} \quad (4)$$

According to Hypothesis 2, it is expected that the negative influence of the size of the board, the negative effect of the unification of the two roles (CEO-Chairperson), and the positive influence of non-executives on acquirer's returns, would be reinforced in the Anglo-Saxon case. Therefore, a negative sign is expected for coefficients  $\beta_4$  and  $\beta_6$  and a positive sign for coefficient  $\beta_5$ .

The results of these estimations are presented in the following section.

#### 4. Results

**Table 4** presents the results obtained by estimating Models 1 and 2 specified in the previous section.

With regards to the variables of the board used as proxies of its supervisory capacity, it can be seen (Model 1) that there is no evidence that a greater control capacity by the board of directors leads to better acquirer returns for the acquiring companies if the whole of Europe is taken into account. Although the coefficients of the variables *BOARDSIZE* and *CEODUALITY* have the expected negative sign, their values are not statistically significant. The coefficient of the *NONEXEC* variable is, contrary to expectations, negative and significant, showing that as the presence of outside directors increases, acquirer returns decrease. This result is in line with Stewardship Theory supporting the idea that inside (or executive) directors understand the businesses better than outside directors and therefore can make better decisions (Donaldson and Davis, 1991; Davis et al., 1997). Therefore, taken as a whole, the results of the estimation of Model 1 reject Hypothesis 1 formulated in this study.

When the multiplicative variables are included (Model 2), results show that, although the negative effect of *NONEXEC* on acquirer returns persists, and there is no difference between the two contexts with respect to the influence of this variable (the coefficient of *NONEXEC* × *ANGLO* is not statistically significant), board size and CEO duality play different roles in Anglo-Saxon and continental European contexts.

With regards to the effect of the size of the board, the coefficient for *BOARDSIZE* (0.499) which is the slope of the regression line for the continental European acquirers (i.e., *ANGLO* = 0) is not statistically significant, indicating that board size does not affect acquirer returns in continental Europe. However, the value of the coefficient of the interaction term (*BOARDSIZE* × *ANGLO*) is negative and statistically significant (as expected in Hypothesis 2). More specifically, its value is -2.171 (significant at 10 % level), which represents the difference in slope between Anglo-Saxon firms and continental European firms. Therefore, this means that for European Anglo-Saxon acquirers, the estimated coefficient for board size is -1.672 (0.499–2.171), which is statistically significant (p-value = 0.087), suggesting that as the size of the board increases (an indication of reduced supervisory capacity of the board), Anglo-Saxon acquirer returns decrease. The negative relationship between board size and acquirer returns endorses results found in Kolasinski and Li (2013) for US acquirers and Ben-Amar et al. (2011) for Canadian acquirers.

In relation to CEO duality, similar results are obtained. The estimated coefficient of the variable *CEODUALITY* (0.420) is not statistically significant, so this characteristic of the board does not affect continental European acquirer returns. The coefficient of the interactive term (*CEODUALITY* × *ANGLO*) is negative (-1.488) and statistically significant (as expected according to Hypothesis 2). This means that for European Anglo-Saxon acquirers, the estimated coefficient for CEO duality is -1.068 (0.420–1.488) which is statistically significant (p-value = 0.084). Therefore, the coincidence of CEO and Chairperson positions (synonymous with lower board supervisory capacity) leads to lower acquirer returns in the European Anglo-Saxon context. These results are in line with Masulis et al. (2007) for US acquirers, who point out that separating the two positions leads to greater bidder shareholder wealth.

Consequently, although the results for the *NONEXEC* variable are contrary to what was expected, the results obtained for variables *BOARDSIZE* and *CEODUALITY* (and the interactive terms) in Model 2 allow us to confirm, at least in part, Hypothesis 2 of the research. The supervisory capacity of the board (proxied by small board size and separated CEO-Chairperson positions) is more important in Anglo-Saxon European countries than in continental European countries. More specifically, small board size and separated CEO-Chairperson positions significantly increase Anglo-Saxon acquirer returns, but do not affect continental European acquirer returns.

This evidence suggests that board size and CEO duality play different roles in Anglo-Saxon and continental European contexts, which results from the differences in corporate governance systems in the two regions. These results also confirm the slogan "one size does not fit all", showing that rules that may be necessary and efficient in the Anglo-Saxon context may not be appropriate in other institutional contexts.

Therefore, the legal origin matters in European M&As, as authors such as Martynova and Renneboog (2011a) or Drobetz and

<sup>3</sup> *ANGLO* is a dummy variable coded as 1 for Anglo-Saxon acquirers (from Ireland and UK) and 0 otherwise.

**Table 4**  
Cross-sectional Regression Analysis (OLS).

	Model 1	Model 2
BOARDSIZE	−0.020 (0.969)	0.499 (0.291)
NONEXEC	−0.028** (0.013)	−0.026** (0.037)
CEODUALITY	−0.011 (0.971)	0.420 (0.198)
BOARDSIZE X ANGLO		−2.171* (0.076)
NONEXEC X ANGLO		−0.005 (0.828)
CEODUALITY X ANGLO		−1.488* (0.066)
FSIZE	−0.322*** (0.008)	−0.292** (0.020)
LEVERAGE	1.213 (0.301)	1.279 (0.272)
MTB	−0.053 (0.129)	−0.042 (0.251)
CFTOEQUITY	1.747 (0.553)	1.926 (0.518)
SIGMA	−3.561 (0.902)	−3.501 (0.905)
RUNUP	−0.414 (0.718)	−0.358 (0.761)
FEMALEBOARD	−0.012 (0.296)	−0.012 (0.297)
CROSSBORDER	0.116 (0.687)	0.132 (0.650)
RELATED	−0.097 (0.728)	−0.117 (0.677)
HOSTILE	−2.263** (0.027)	−2.274** (0.025)
CASH	0.421 (0.129)	0.358 (0.199)
RELSIZE	0.257 (0.511)	0.220 (0.586)
PDI	0.003 (0.693)	0.002 (0.755)
ANGLO	−1.034 (0.151)	4.877 (0.174)
Constant	6.768*** (0.001)	4.547** (0.014)
Industry Effects	Yes	Yes
Country Effects	Yes	Yes
Observations	985	985
R-squared	0.065	0.074
F	1.82***	1.84***

Robust p-value in parentheses. Significance levels: \*\*\*Indicates  $p < 0.01$ , \*\*Indicates  $0.01 < p < 0.05$ , \*Indicates  $0.05 < p < 0.1$ .

Momtaz (2019), among others, have also stated.

In relation to the control variables, a negative and significant relationship is found between the size of the acquiring company and the acquirer returns in all of the models, as is also the case in other studies such as Masulis et al. (2007) or Martynova and Renneboog (2011a). As those authors point out, larger acquirers tend to overpay in takeovers and therefore, bidder's takeover returns are expected to decrease with the firm size. We also find that transactions classified as hostile generate lower acquirer returns. The reason is that the shareholders of the bidding firms fear that their firm will offer a too high premium if the target opposes the bid or if the offer is made directly to the target's shareholders (bypassing the board of directors) (Martynova and Renneboog, 2011a).

#### 4.1. Robustness analyses

In this section different sensitivity analyses are carried out in order to ensure the robustness of the previous results.

Firstly, a **composite index of board control** has been created in order to use this measure of board's supervisory capacity as a whole rather than using the three explanatory variables related to the board. In this sense, following Haynes and Hillman (2010) and Chen (2014) among others, the variables BOARDSIZE, NONEXEC and CEODUALITY have been standardized and aggregated (BOARDSIZE and CEODUALITY with negative sign and NONEXEC with positive sign) to create an index of board control (CONTROLBOARDINDEX).

A greater value of the index implies smaller board of directors, with a greater percentage of outsiders and where the positions of CEO and Chairperson are separated, which means a greater control by the board, and therefore, it would be expected in these cases greater acquirer returns in the Anglo-Saxon context.

Formally, the model takes the following form (firm notation (i) dropped for convenience):

$$\text{CAR} = \beta_0 + \beta_1 \text{CONTROLBOARDINDEX} + \beta_2 \text{CONTROLBOARDINDEX} \times \text{ANGLO} + \beta_3 \text{FSIZE} + \beta_4 \text{LEVERAGE} + \beta_5 \text{MTB} + \beta_6 \text{CFTOEQUITY} + \beta_7 \text{SIGMA} + \beta_8 \text{RUNUP} + \beta_9 \text{FEMALEBOARD} + \beta_{10} \text{CROSSBORDER} + \beta_{11} \text{RELATED} + \beta_{12} \text{HOSTILE} + \beta_{13} \text{CASH} + \beta_{14} \text{RELSIZE} + \beta_{15} \text{PDI} + \beta_{16} \text{ANGLO} + \gamma + \varepsilon \quad (5)$$

Model 3 in Table 5 summarizes these results. It can be observed for European continental context, that a greater supervisory capacity of the board does not improve acquirer returns and even reduces them. Although the board variables used as proxies of supervisory capacity of the board do not affect acquirer returns in the previous models, when they are considered as acting like a bundle, the coefficient of the index (-0.285) is negative and statistically significant. This result can indicate that in countries where other

**Table 5**

Cross-sectional Regression Analysis (OLS).

VARIABLES	CAR(-1,+1) Model 3	CAR(-3,+3) Model 4	CAR(-3,+3) Model 5
BOARDSIZE		0.395 (0.475)	
NONEXEC		-0.018** (0.040)	
CEODUALITY		0.225 (0.557)	
BOARDSIZE X ANGLO		-2.756** (0.032)	
NONEXEC X ANGLO		0.000 (0.993)	
CEODUALITY X ANGLO		-1.049** (0.033)	
CONTROLBOARDINDEX	-0.285*** (0.003)		-0.208* (0.066)
CONTROLBOARDINDEX X ANGLO	0.460** (0.028)		0.497** (0.038)
FSIZE	-0.411*** (0.000)	-0.256* (0.062)	-0.367*** (0.002)
LEVERAGE	1.262 (0.283)	1.906 (0.113)	1.879 (0.124)
MTB	-0.049 (0.181)	-0.016 (0.648)	-0.021 (0.534)
CFTOEQUITY	1.020 (0.735)	1.653 (0.615)	0.695 (0.832)
SIGMA	-1.808 (0.951)	3.372 (0.346)	3.420 (0.345)
RUNUP	-0.209 (0.859)	0.310 (0.823)	0.423 (0.760)
FEMALEBOARD	-0.015 (0.200)	-0.010 (0.435)	-0.013 (0.351)
CROSSBORDER	0.047 (0.870)	0.071 (0.835)	-0.000 (0.999)
RELATED	-0.136 (0.627)	0.061 (0.847)	0.045 (0.888)
HOSTILE	-2.500** (0.021)	-2.064* (0.098)	-2.160 (0.113)
CASH	0.412 (0.141)	0.592* (0.064)	0.646** (0.043)
RELSIZE	0.215 (0.583)	0.354 (0.450)	0.366 (0.423)
PDI	0.002 (0.763)	-0.001 (0.933)	-0.001 (0.929)
ANGLO	-0.215 (0.639)	0.320 (0.628)	0.159 (0.749)
Constant	4.891*** (0.001)	3.468** (0.046)	3.317** (0.032)
Industry Effects	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes
Observations	985	985	985
R-squared	0.065	0.068	0.063
F	1.89***	1.42**	1.81**

Robust p-value in parentheses. Significance levels: \*\*\*Indicates  $p < 0.01$ , \*\*Indicates  $0.01 < p < 0.05$ , \*Indicates  $0.05 < p < 0.1$ .

corporate control mechanisms (e.g. ownership concentration) operate, advisory function of the board prevails. In this sense, Pfeffer (1972) emphasizes the role of the board as an instrument for dealing with the organization's environment and Pfeffer and Salancik (2003), under Resource Dependence Theory, consider that board members provide the firm with critical resources and emphasise the need to consider boards other than in their supervisory functions. As the board characteristics that increase its supervisory capacity (specially, small size and separated CEO-Chairperson positions) reduce the ability of the board to correctly perform its advisory function<sup>4</sup>, the coefficient of the CONTROLBOARDINDEX variable is negative and significant for European continental acquirers. Therefore, in these countries a combination of large boards with CEO-Chairperson positions unified and a balance between inside and outside directors, seem to produce better decisions on mergers and acquisitions.

By contrast, for the Anglo-Saxon context, where other internal mechanisms of control are lesser and the monitoring function of the board is very important, it is observed that more control by the board (greater value of the control board index) has a positive and significant effect on acquirer returns (coef. =  $-0.285 + 0.460 = 0.175$ ). This supports the results of the previous section.

On the other hand, previous models have been re-estimated using an *alternative dependent variable* expanding the event window: CAR (-3, +3). Models 4 and 5 in Table 5 shows these results. In first place, Model 4 replicates the initial Model 2 but using the dependent variable CAR (-3, +3) instead of CAR (-1, +1). The results are maintained confirming that in the European Anglo-Saxon context, as the size of the board increases and the positions of Chairperson and CEO are unified, acquirer returns are lower. That is to say that a lower (greater) capacity of control of the board reduces (improves) the acquirer returns in the Anglo-Saxon context. Similarly, these results are maintained when the dependent variable is CAR (-3, +3) and the explanatory variable of interest is the board control index. In this case (Model 5), it is observed that, for the Anglo-Saxon context, a greater value of the board control index generates higher returns for the shareholders of the acquiring companies.

Finally, we deal with potential *endogeneity* in our models. As we acknowledge that this is a serious methodological problem in research on corporate governance and corporate performance (Hermanlin and Weisbach, 2003) we also run a two stage least square regression model (2SLS) in order to ensure the robustness of our results. Following authors like Pham et al. (2015) we use as instrumental variables (IV) in the two stage least square regressions, the mean value of the corporate governance variables (board size, percentage of outside board members and CEO duality) for all firms<sup>5</sup> in the same industry and country than the focal firm<sup>6</sup>. Table 6 reports IV coefficient estimates for the first and second stage regressions in previous models 1, 2 and 3<sup>7</sup>. The equations are exactly identified and the F statistics for the first stage analyses are in all regressions significant and greater than the customary 10 threshold, confirming the validity of our instruments. In models (1) and (2), tests of endogeneity (Durbin Chi2 and Wu-Hausman) don't reject the hypothesis of our variables to be exogenous, so OLS estimates reported for these models in previous Table 4 are reliable. Anyway, 2SLS regression models confirm our main previous results. Only, in the Anglo-Saxon context, some proxies of supervisory capacity of the board (small size of the board and separated CEO-Chairperson positions), significantly affect acquirer returns

In Model (3), tests of endogeneity indicate that there is a need for an IV estimation to fix the potential endogeneity bias of OLS. In the second stage regression, the coefficients of the CONTROLBOARDINDEX variable and the interactive term confirm our previous results.

## 5. Conclusions

M&A are major investments that may alter the strategic direction of the firm and significantly affect the welfare of the shareholders. At the same time, M&A tend to intensify the inherent conflicts of interest between managers and shareholders in large public corporations. Managers of the bidder firm can pursue private benefits such as increased discretion, visibility, prominence, power, and higher remuneration from acquiring other firms (Chen et al., 2008; Hambrick et al., 2005; Henderson and Fredrickson, 1996; Seo et al., 2015). For these reasons, M&A offer an ideal context for studying the effects of boards' features on shareholders' returns (Deutsch et al., 2007). Well-functioning boards of directors must ensure that only those growth strategies that are beneficial for the company would be implemented, so as the supervisory capacity of the board increases, we should expect higher returns for the shareholders of acquiring firms.

Using a sample of 985 mergers and acquisitions made by EU15 listed companies for the period 2003–2016, we don't find evidence that a greater supervisory capacity of the board (small size, high proportion of outsiders and separated CEO-Chairperson positions) will

<sup>4</sup> Literature shows that large boards more efficiently perform the advisory function, because the more members there are, the greater the variety of opinions and perspectives (Acero and Alcalde, 2012). Authors such as Adams and Mehran (2005); Beiner et al. (2006) or Choi et al. (2007), among others, find a positive relationship between board size and firm performance. In relation to CEO-Chairperson positions, Stewardship Theory posits that CEO duality facilitates effective action by the CEO, and consequently leads to better performance (Redor, 2016). In particular, it suggests that combining the roles of CEO and chairman leads to more focused objectives, a clear line of command, and a quicker response to external events (Boyd, 1995). Finally, a balance between inside directors and outside directors must be achieved for a board to be effective (Baysinger and Butler, 1985).

<sup>5</sup> In order to calculate these mean values, we used a large sample made up of 2,415, European firms, for which board variables were available in our database.

<sup>6</sup> Instrumental variables are required to be related to the endogenous predictor variables but not directly related to the dependent variable of the overall model. As indicated by Goranova et al. (2017) firms can mimic the attributes of other similar firms but the attributes of other local firms operating in the same industry do not influence the acquisition performance of the focal firm.

<sup>7</sup> Following Wooldridge (2010), when the interaction terms are included in the models, we also use as instrumental variables in the first stage the interaction between each instrument and the variable ANGLO. The results are not reported to save space but are available upon request.

**Table 6**  
IV 2SLS Regression Analysis.

	Models (1) and (2)					Model (3)	
	Stage 1			Stage 2		Stage 1	Stage 2
	BOARDSIZE	NONEXEC	CEODUALITY	CAR (-1,+1)	CAR(-1,+1)	CONTROLBOARDINDEX	CAR(-1,+1)
BOARDSIZE				1.122 (0.466)	1.504 (0.334)		
NONEXEC				-0.072** (0.012)	-0.063** (0.050)		
CEODUALITY				0.164 (0.861)	1.330 (0.196)		
BOARDSIZE X ANGLO					-3.310* (0.054)		
NONEXEC X ANGLO					0.055 (0.417)		
CEODUALITY X ANGLO					-7.249*** (0.003)		
CONTROLBOARDINDEX							-0.758*** (0.004)
CONTROLBOARDINDEX X ANGLO							2.009*** (0.001)
FSIZE	0.104*** (0.000)	1.325*** (0.000)	-0.010 (0.273)	-0.387* (0.060)	-0.364 (0.106)	-0.162*** (0.000)	-0.464*** (0.000)
LEVERAGE	-0.033 (0.538)	-2.983 (0.203)	0.132 (0.100)	1.100 (0.243)	1.710* (0.078)	-0.363 (0.208)	1.456 (0.129)
MTB	-0.004* (0.077)	0.072 (0.436)	-0.000 (0.993)	-0.043 (0.243)	-0.053 (0.163)	0.015 (0.197)	-0.030 (0.433)
CFSTOEQUITY	0.116 (0.372)	9.842* (0.083)	0.271 (0.164)	2.135 (0.353)	2.960 (0.210)	-0.324 (0.643)	-0.162 (0.945)
SIGMA	0.891 (0.493)	-57.453 (0.311)	0.877 (0.652)	-6.397 (0.776)	-8.360 (0.711)	-7.999 (0.252)	0.791 (0.972)
RUNUP	0.096* (0.092)	-6.175** (0.013)	-0.003 (0.969)	-0.858 (0.401)	-0.405 (0.699)	-0.605** (0.048)	0.164 (0.875)
FEMALEBOARD	0.000 (0.797)	0.023 (0.464)	0.001 (0.210)	-0.012 (0.351)	-0.008 (0.521)	-0.002 (0.633)	-0.020 (0.109)
CROSSBORDER	-0.007 (0.676)	2.012*** (0.008)	0.004 (0.864)	0.199 (0.509)	0.152 (0.622)	0.118 (0.203)	-0.081 (0.794)
RELATED	0.036** (0.024)	0.235 (0.732)	0.024 (0.311)	-0.093 (0.737)	-0.064 (0.820)	-0.126 (0.136)	-0.145 (0.600)
HOSTILE	0.070 (0.512)	7.399 (0.111)	0.076 (0.632)	-2.146 (0.252)	-2.450 (0.194)	0.130 (0.821)	-2.361 (0.207)
CASH	0.000 (0.996)	-1.299* (0.063)	-0.006 (0.804)	0.355 (0.207)	0.341 (0.230)	-0.071 (0.409)	0.242 (0.400)
RELSIZE	-0.006 (0.599)	0.678 (0.198)	-0.007 (0.698)	0.289 (0.167)	0.186 (0.389)	0.073 (0.263)	0.109 (0.617)
PDI	0.000 (0.597)	-0.013 (0.546)	0.000 (0.788)	0.002 (0.767)	0.003 (0.686)	-0.002 (0.503)	-0.000 (0.997)
ANGLO	-0.001 (0.991)	-4.726** (0.040)	-0.007 (0.931)	-0.354 (0.637)	4.057 (0.387)	-0.682*** (0.000)	1.102* (0.086)
INSTBOARDSIZE	0.711*** (0.000)	-6.455** (0.021)	0.038 (0.691)				
INSTNONEXEC	-0.002 (0.309)	0.899*** (0.000)	-0.000 (0.834)				
INSTCEODUALITY	-0.162*** (0.005)	-3.583 (0.154)	1.052*** (0.000)				
INSTCONTROLBOARDINDEX						0.613*** (0.000)	
Constant	-0.130 (0.503)	17.589** (0.038)	-0.136 (0.639)	7.178** (0.030)	5.057 (0.189)	2.470*** (0.000)	4.440*** (0.002)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	985	985	985	985	985	985	985
R-squared	0.613	0.683	0.356	0.045	0.080	0.458	0.016
F/Wald chi2	40.50***	55.19***	14.10***	67.62***	74.96***	22.28***	71.38***
Endogeneity tests:							
Durbin chi 2				4.032	10.117		9.574***
(p-value)				(0.258)	(0.120)		(0.008)
Wu-Hausman				1.293	1.622		4.642***
(p-value)				(0.275)	(0.138)		(0.010)

Significance levels: \*\*\*Indicates  $p < 0.01$ , \*\*Indicates  $0.01 < p < 0.05$ , \*Indicates  $0.05 < p < 0.1$ .

lead to higher acquirer returns.

As for the proportion of outsiders in the board, we find that the higher the proportion of outsiders, the lower the acquirer returns. This evidence is supportive of Stewardship Theory indicating, that, at least in the context of mergers and acquisitions, executives' expertise and knowledge of the business lead to superior decisions (Donaldson and Davis, 1991; Davis et al., 1997).

In relation to board size and CEO duality, the results corroborate the importance of considering the institutional context. In the Anglo-Saxon context, as the size of the board decreases and the positions of Chairperson and CEO are separated (greater control of the board over CEO decisions), the acquirer returns are higher. Nevertheless, this does not happen for continental European acquirers.

Differences in the institutional context can justify these results. In the Anglo-Saxon context, as shareholders cannot directly supervise managers' decisions, agency conflicts between shareholders and managers are the main corporate governance problem and the control and supervision tasks of the board are more relevant. By contrast, in continental European countries, ownership concentration is higher, and significant shareholders control managers. This institutional setting reduces the risks of CEO duality and bigger boards. As Redor (2016) pointed out in his literature review, innovative approaches using other frameworks such as the Resource Dependence Theory and Stewardship Theory have been significant in that they show that monitoring is not the only role through which directors might influence value creation in M&As. Our results reinforce the idea of the need to use other approaches beyond the Agency Theory, especially in continental Europe, and to adapt the recommendations of good governance to each country in accordance with their legal and institutional environment.

Moreover, the evidence found shows that the recommendations included in most codes of good governance (preference for smaller boards and separation of CEO- Chairperson positions), which originate in the Anglo-Saxon context, make sense in countries that share their same institutional characteristics, while, in other contexts, the effect may not be the one that is desired, as indicated by the present study. Consequently, these results would reinforce the saying that "one size does not fit all".

If we take into account that the structures of the boards of directors differ depending on the country of origin, it makes sense to think that there cannot be a common standard of recommendations for good governance for all countries. Therefore, it is necessary that legislators on corporate governance in each country consider the peculiarities of companies within their institutional context and issue recommendations adapted to the reality of these companies. Mimicking recommendations issued by other countries with different legal traditions can lead to opposite results of what was expected. As Redor (2016: 814) points out "board regulations that do not recognize each firm's specific needs may prevent some of them from designing a board capable of responding appropriately to the firm's unique needs".

### 5.1. Limitations and future research

A limitation of this study is the availability of information. In this sense, it would have been interesting to incorporate some additional variables more related to, for example, the ownership structure and even more corporate governance variables (for example, variables on the director remuneration, information on the profile of the directors (education, nationality, experience, tenure, etc.)), but this information is not included in the databases used.

Although our analysis window (the day before, the day of, and the day after the official M&A announcement; or CAR (-3, +3) in sensitivity test) has often been used in prior research (e.g., Bruner, 2002; McWilliams and Siegel, 1997), it would be interesting to study the effects of board attributes on long-run stock returns and long-run operating performance.

Likewise, most of the existing studies have focused on analyzing the impact of board attributes on bidder shareholder wealth. Future research might aim to further our understanding of how board attributes impact target shareholder wealth and the overall creation of value. Future research is needed to assess the impact of board attributes on the total gains (or losses) during M&As (Redor, 2016).

### Author statement

The authors contributed equally to this research and their names are listed in alphabetical order.

### Declaration of Competing Interest

None.

### Acknowledgements

We acknowledge financial support from the project ECO2016-77843-P (Ministerio de Economía y Competitividad, Spain) and the COMPETE (S52\_20R) research group (Government of Aragón, Spain).

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