



The Board Composition and M&A Activity in a Small Market

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Biographical Note

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Abstract

Analysing the company board of director's impact in the company Merger and Acquisition (M&A) activity is the main goal of this dissertation. A M&A can influence both the future of the acquiring and acquired company and therefore, it is very important to know how the board of director's composition impact the M&A decision process in order to improve it and increase the deal efficiency.

Understanding how the CEO and board characteristics can influence the number and total value spend in merger and acquisitions are important objectives of this study. This study intends to answer these questions based on a sample of 40 portuguese listed companies.

Our findings suggest that the presence of non-executive's directors in certain scenarios may reduce the probability of a firm to complete M&A transactions. Independent directors alone don't have any impact.

Key words: acquisition, corporate governance, board characteristics, CEO.

JEL-Codes: G32, G34.

Resumo

Analisar o impacto do Conselho de Administração de uma empresa na atividade de fusão e aquisição da mesma (M&A) é o objetivo principal desta dissertação. Um M&A pode influenciar o futuro da empresa adquirente e adquirida e é, portanto, muito importante saber como a composição do Conselho de Administração afeta o processo de decisão de M&A para melhorá-lo e aumentar a eficiência da transação.

Compreender como as características do CEO e do Conselho de Administração podem influenciar o número e valor dispendido em fusões e aquisições são objetivos importantes deste estudo. Pretende-se, desta forma, responder a essas questões com base numa amostra de 40 empresas portuguesas cotadas.

Os nossos resultados mostram que a presença de diretores não executivos afeta negativamente, em certos cenários, a probabilidade da empresa incorrer em operações de M&A. A presença de diretores independentes, por si só, não tem qualquer impacto.

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1. Introduction

Mergers and Acquisitions (M&A) on one hand can improve the company's profitability and increase shareholder value creation by reducing expenditures, generating synergies on resource utilization and decreasing competition. This is possible since enables the acquiring and acquired companies to leverage and complement their resources, to bring more confidence to customers and shareholders, to lower costs and to increase profits in the long run. On the other hand, it is a transaction that can lead to failure. There may be flaws in strategies, conflicts of interest, or even poor deal appraisal and mismanagement. To avoid these events, it is necessary to plan, to analyse and to evaluate correctly the transaction.

One of the best practice to improve company's performance is having an effective corporate governance strategy. According to Caton *et al.* (2016) *"This paper finds that strongly governed companies tend to perform better after making share repurchase program announcements relative to weakly governed companies"* and that applies also to M&A transactions, as Liu and Zhao (2012) concluded *"the board of directors, executive ownership and ownership concentration on post-merger three years of mergers and acquisitions have a significant impact on performance"*.

Some studies show that companies have different motivations and goals when using M&A strategies. For some firms, resorting to this strategy may be their salvation (Jia and Chen, 2016) and their opportunity to grow. For Nguyen *et al.* (2012) the motivations include the agency conflicts resolution.

The impact of the composition of the board of directors in the number and in the total value of acquisitions completed by a company is the focus of this analysis, using a sample of 40 Portuguese Companies, listed in 2016 on Euronext Lisbon.

This study will try to answer two main questions:

1. What is the impact of the presence of independent and non-executive directors on the board of directors in the probability of the company to engage in acquisitions?
2. What is the impact of the presence of independent and non-executive directors in the number and in total value of acquisition completed by the companies?

Previous literature analysed the impact that boards and director's characteristics have on M&A. Characteristics such as compensation, corporate governance strategies, independent director's quantity and board size. None previous study focused on the Portuguese reality and that is the goal of this study.

Our results suggest that the increase of non-executive directors impacts negatively the number and the total value of acquisitions completed by a company.

After this introduction, the literature review will be present in Chapter 2. In Chapter 3, the methodology used as well as the sample description will be presented. Then we will analyse the independent and non-executive director's impact in Chapter 4 and finally, in Chapter 5 we conclude.

2. Literature Review

2.1. M&A Objectives

Some authors argue that the M&A strategy is the best option to maintain the company on the market, to have a fast growth and to improve their situation (Jia and Chen, 2016).

According to Du and Sim (2016), the post-acquisition effects are different for acquirer firm and acquired and depending on company's situation. To improve the sector situation and providing the equilibrium is the main objective. The motivations are divide between the agency problem's resolution and market issues (Nguyen *et al.*, 2012).

2.2. Corporate Governance Importance

The way a company is organized and its corporate governance structure can influence the M&A performance of a company. However, the agency problems cannot be eliminated and the impact of certain corporate governance measures on M&A performance can be diverse. For instance, Liu and Zhao (2012) stated that *"executives' ownership of stocks does not alleviate the agency problem and has a negative impact on the long-term performance of mergers and acquisitions"*, while Caton *et al.* (2016), suggest that companies with effective corporate governance policies have more benefits from a M&A transaction as the *"governance strength is associated with larger post-announcement changes in CEO incentive compensation and merger and acquisition activity"*.

2.3. Agency Problems

Agency costs interfere with company's wealth and should be minimized. One way to minimize these costs is through an effective corporate governance (Duchin and Schmidt, 2013). However, the magnitude and size of agency problems can affect the company governance (Cohn and Rajan, 2013).

Regarding M&A, Duchin and Schmidt (2013) affirm that *"agency problems may be present in merger wave acquisitions"* while Shleifer and Vishny (2007) argue that *"agency problem is serious: the opportunities for managers to abscond with financiers' funds, or to squander them on pet projects, are plentiful and well-documented"*.

In conclusion, corporate governance has a huge relationship with agency problems, since when there is a weak board organization, the probability of having conflicts will increase.

2.4. M&A Performance

2.4.1. Merger Performance

There are several studies that connect the corporate governance characteristics to M&A performance. For instance, Thenmozhi and Narayanan (2016) studied the impact that an acquisition has on acquirers and acquired companies and they found evidence that there is a positive impact when a company from more developed market acquires a company from a less developed market while Lebedev *et al.* (2015) suggest that the M&A performance is different whether the market is in a developed or in an emerging economy.

Mohite (2016) stated that if companies have a past that includes acquisitions this can bring value to future deals because they have the knowledge accumulated in the area. However, Dutta and Jog (2009) did not find evidences, based in the short-term stock performance, that the acquisition influences negatively the companies' performance.

2.4.2. Merger Announcement

In addition to studying the ultimate acquisition performance, it is very important to analyse how the market reacts when there is an M&A announcement.

Following Ordu and Schweizer (2015), the M&A announcement affects negatively option volume and it is important to predict the performance. Their results show “*evidence that the abnormal trading activity observed in options markets is related to informed trading activity prior to merger announcements*”.

For Ahn *et al.* (2010) the market behaviour does not predict future performance but the corporate governance of the company does. For instances, multiple directorships can generate agency conflicts and consequently affect (negatively) the performance and the company's returns after the merger.

Campbell *et al.* (2009) reinforce the corporate governance importance and show that the director's experience has positive impact in the returns during the announcement.

2.4.3. Shareholders

Shareholders are a very important part of the company and they are affected by the announcements and post-acquisition performance.

Campa and Hernando (2006) defend that the target firm shareholders benefit during the M&A announcement. At the announcement, the acquired companies have greater benefits, which does not mean that the same happens after the merger.

Mohite (2016) studied the determinants that influence the shareholders return and concluded that *"the premium received by the target shareholders is positively related to the target's deal-making experience"*.

According to Deng *et al.* (2013), there is a positive relationship between social responsibility and acquisitions. In other words, the shareholders of the bidder firms that have this extra quality, benefit more from the acquisition.

2.5. Board Characteristics

Wang and Xie (2009) focuses their study in 396 acquisitions done in the United States reality during the period between 1990 and 2004. Using daily stock return data from Securities Data Corporation's US merger and acquisition (SDC), The Center for Research in Security Prices (CRSP) and Investor Responsibility Research Center (IRRC), they concluded that the merging companies benefit more if the bidder has an effective corporate governance structure.

According to Coles *et al.* (2008), board characteristics depend on the company's degree of complexity, after analysing a sample of US companies between 1992 and 2001. More developed companies typically require larger boards, appealing to a higher number of independent directors. They realized robustness tests and proved that the Tobin Q value increases when there is an increase in the outside director's number.

Moreover, Caton *et al.* (2016) after studying the sample of 53,523 listed companies on AMEX, NASDAQ and NYSE from 1991 to 2011, conclude that a good corporate governance structure contribute to a better company's performance.

Carline *et al.* (2009) studied various corporate governance strategies and their relationship with company performance on a sample of 81 UK mergers occurred between 1985 and

1994 and concluded that the more concentrated is the ownership, the smaller are the benefits to the company.

Liu and Zhao (2012) using a sample of 84 Chinese M&A, occurred during 2006, concluded that the board size and ownership concentration influence the company's performance. For a better performance, the board should have an average size. Regarding ownership, they concluded the same of Carline *et al.* (2009). Another conclusion was "*CEO is the board chairman of the mergers do not significantly affect the long-term performance*" (Liu and Zhao, 2012).

Zhu *et al.* (2016), analysing 6,339 Chinese firms, between 2006 and 2009, concluded that "*empowering independent directors increases firm value*" and these directors can influence the decision making.

Subrahmanyam *et al.* (1997) analysed the relation between firm returns and board characteristics using a sample of 263 acquisitions, between 1992 and 2001, in United States. They concluded that "*There is a negative relation between abnormal returns and the proportion of independent outside directors on the boards of bidding banks.*" (Subrahmanyam *et al.*, 1997).

Boone *et al.* (2007) analysed 1,019 firms between 1988 and 1992 and observed that more developed companies have more independent board elements compared to less developed companies. The authors also concluded that there is a negative relationship between the CEO tenure and the independent director's proportion.

2.6. Directors Experience

El-Khatib *et al.* (2015) studied a sample composed of M&A "between S&P 1500 acquirers and U.S. public targets " from 2000 to 2009, they concluded that an acquisition from a company with high centrality CEO's is more likely to produce a lower return, which can translate into losses. El-Khatib *et al.* (2015) argue that the CEO interprets a very important role in this type of decision because states "*enjoy better access to private information, greater bargaining power, and more loyalty and conformity in the boardroom*".

Chen *et al.* (2015) found that the "*S-shaped curve conjecture, where at first a performance decline with increasing directorships is observed, followed by a positive*

relation between increasing directorships and firm performance, and then a decline in performance at very high levels of directorships”.

According to Custódio and Metzger (2013) the CEO's experience in acquisitions is an important feature because it positively influences performance and this happens because they *"negotiate better deals and pay a lower premium for the target”.*

Additionally, Huang *et al.* (2014) studied U.S. acquisitions during the period 1998 to 2008 and reached similar conclusion as Custódio and Metzger (2013), that the director's experience has a positive impact on acquisition performance. Huang *et al.* (2014) also concluded that *"firms with investment bankers on the board have a higher probability of making acquisitions",* but do not influence performance or returns.

Li and Srinivasan (2011) studied M&A deals occurred in United States between 1996 and 2004 and found that the characteristics that more influence the acquisition performance is the founder focus. For example, Li and Srinivasan (2011) said *"Stock returns around M&A announcements and board attendance are also higher in founder-director firms”.*

Finally, Grinstein and Hribar (2004) studied a sample of M&A in the United States, during 1993-1999 and found that the more influence the CEO has, the greater is its compensation, but on the other hand, the remuneration has no direct relation to the performance of the acquisition.

2.7. Summary

The literary review presented in previous sub-chapters shows that the corporate governance effectiveness is very important for a company and influences the acquisition performance.

Moreover, Zhu *et al.* (2016) found evidence that the number of independent director on the board has a positive influence on the company's value and acquisition performance and Subrahmanyam *et al.* (1997) concluded that *“abnormal returns are negatively related to the proportion of outside directors, but positively related the number of other outside directorships held by independent outsiders”.*

It can be concluded that more developed companies usually have a more effective corporate governance, which allows them to create more value in M&A situations.

Our study will try to address the same issues but using a Portuguese sample to study the impact of independent and non-executive director's presence on the number of acquisition and total value deals completed.

3. Methodology and Sample

3.1. Methodological Aspects

This study's objective is to analyse the presence of director's effect on the acquisitions quantity and value, using the Portuguese reality. We will also analyse the relationship of other corporate governance and CEO variables effect.

According to Zhu *et al.* (2016) “*empowering independent directors increases firm value*” and these directors can influence the decision making process and so this study will analyse the impact of the presence of independent and non-executive directors in Portuguese companies' board of directors in the number and value of acquisitions deals during a period of ten years (2006-2016).

To do that we will estimate two different regressions. The first will be estimated by two methods: Pooled OLS and Panel Data with Fixed Effects. The second will be a Probit Model. As dependent variables both the number of deals and the total value spend in acquisitions (deflated by total assets) will be used.

Our model will follow Carline *et al.* (2009) model and the following model was estimated:

$$\begin{aligned} \text{AcquisitionIntensity}_{[2006,2016]} = & \alpha + \beta_1 \% \text{Independent} + \beta_2 \% \text{NonExecutive} + \\ & \ln \text{BoardSize} + \ln \text{TotalAssets} + \beta_4 \text{CeoShares} + \beta_5 \text{BoardShares} + \\ & \beta_6 \text{CeoDuality} + \beta_7 \text{CeoTurnover} + \beta_8 \text{CeoGender} + \beta_9 \text{CeoAge} + \\ & \beta_{11} \text{CeoRemuneration} + \text{DummyYear} + \varepsilon \end{aligned} \quad (1)$$

Where AcquisitionIntensity represents the number of deals done by each company in each of the years of our sample between 2006 and 2016 and the total value spend in those acquisitions annually, deflated by total assets.

As exogenous variables, the %Independent, represent the independent director's percentage in the company board and %NonExecutive represents the non-executive director's percentage in the board. BoardSize is the total number of board members in each company/year. CeoShares variable represents the percentage of shares held directly by the CEO and BoardShares is the percentage of shares held directly by all board members excluding the CEO, both deflated by companies' total shares. CeoDuality is a dummy variable that assumes the value one if CEO is not the same person as the chairman

and zero otherwise. *CeoTurnover* is also a dummy variable that is equal to one if the CEO has changed since the previous year and zero otherwise (similar to (Boone *et al.*, 2007)). Then *CeoGender* is a dummy variable that is equal to one if CEO is a male and zero otherwise. The CEO age, measured in years is represented by the variable *CeoAge* and *CeoRemuneration* represents the CEO's total annual compensation, expressed in euros, including fixed, variable remuneration and attributed by other domain companies. Finally, the *DummyYear* variables control for year fixed effects.

3.1.1. Pooled OLS and Panel Data with Fixed Effects

In a first phase, the Pooled OLS regressions will be presented with the relation between the board and the CEO characteristics and the control variables (*BoardSize* and *TotalAssets*) using data from 2006 to 2016.

In the second phase, a Panel Data Model with Fixed Effects will be estimated. The model will study the impact of the proportion of independent and non-executive directors in the acquisition activity of Portuguese Companies.

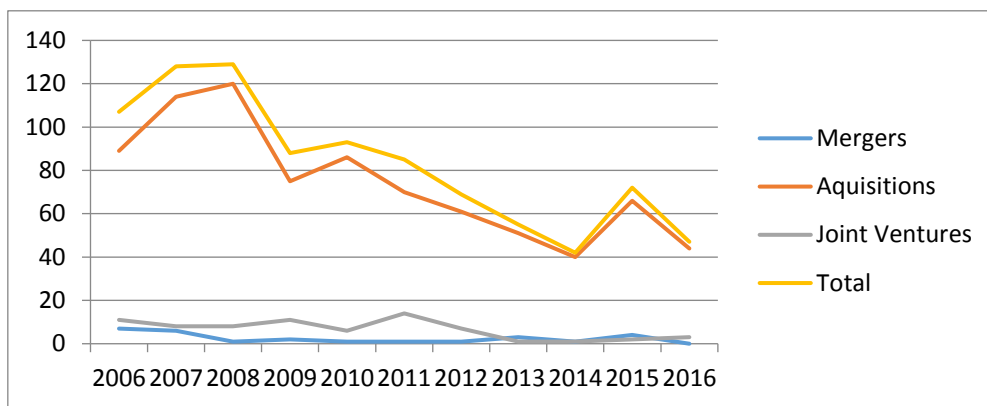
3.1.2. Probit Model

Then, in a third phase, a Probit Model will be presented which means that the dependent variable is a dummy. In this analysis, the explained variable takes the value of one if the company in that year concludes at least one acquisition and zero otherwise. Thus, we will be able to analyse how the proportion of independent and non-executive directors (in the company board) influence the probability of a company engage in acquisition activity.

3.2. Sample Selection

According to the Zephyr database, the number of acquisitions has been decreasing, in Portuguese Companies, as opposed to the mergers and joint ventures that have remained constant over the last ten years (2006 to 2016) as it can be seen in the Figure 1. Regarding acquisitions, the strong decrease started in 2008, with the financial crisis. The number of acquisitions increased, slightly in 2015 but it decreased again in 2016.

Figure 1. Number of mergers, acquisitions, joint ventures and total deals, by Portuguese Companies, between 2006 and 2016.



Source: Zephyr

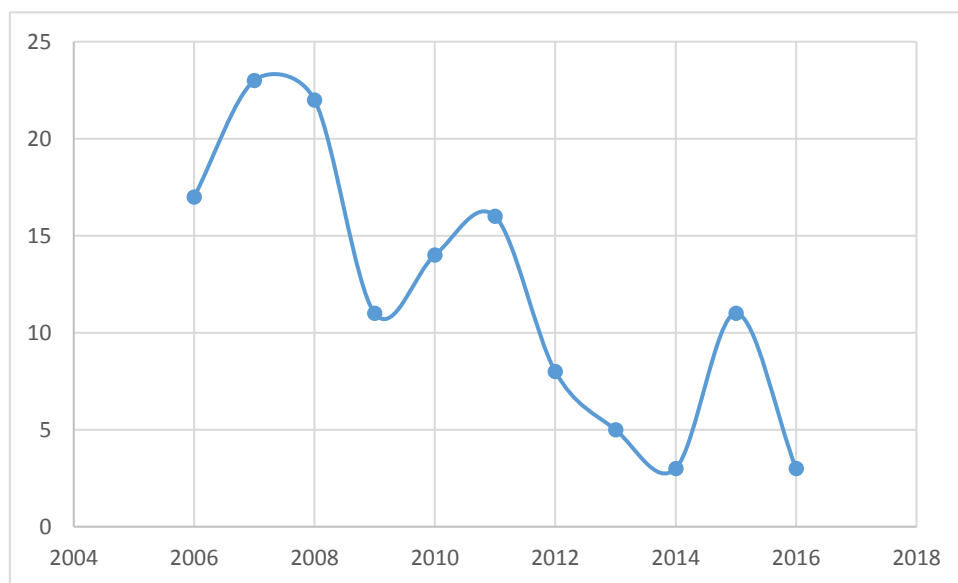
Regarding our sample, we start by selecting all Portuguese Companies listed on Euronext Lisbon, that were not banks and sports clubs because they have different regulations, in a total of 40 listed Portuguese Companies.

For each company, data regarding board composition and CEO characteristics was collected from the annual reports. Data collected includes information regarding whether the CEO is also the chairman, the number of shares held by the CEO and the remaining board, the CEO gender (based in the first name and biographical data). It was also analysed whether the CEO has changed since the previous year. Finally, the total amount of annual compensation received by the CEO was also collected.

The CEO's age was taken from the Eikon database and the financial data was collected from Datastream database. The number of acquisition completed by each company, between 2006 and 2016, as well as the deal value, was collected from Zephyr. Only the acquisitions above 50% were included in our sample.

The Figure 2 represents the number of acquisitions, per year, in our sample during the period between 2006 and 2016, in a total of 133 acquisitions. As we can see, the maximum number of deals was reached in 2007 with 23 acquisitions and the years with less deals were 2014 and 2016 (3 acquisitions). Unsurprisingly, there is a strong decrease (more than 50%) in 2009, precisely after the beginning of the global financial crisis. Another large decline occurred from the 2011 to 2014.

Figure 2. Number of total acquisitions by companies in our sample, between 2006 and 2016.



Source: Zephyr

The Table 1, split the companies according their acquisition intensity (i.e., deals completed between 2006 and 2016). We can observe that most firms have completed between 2 and 5 acquisitions. During our period of analysis (2006-2016), two companies made more than 10 acquisitions (EDP e Galp Energia) and eight companies have not done any acquisition during that period.

Table 1. Number of acquisitions per year by companies in our sample, between 2006 and 2016.

Number of acquisitions	Number of firms
0	8
1	5
]1;5]	20
]5;10]	5
>10	2
TOTAL	40

Source: Zephyr

The number of acquisition done by each firm in our sample is disclosed in the appendix 1.

3.3. Sample Description

3.3.1. Dependent Variables

To observe if the number of independent directors affects the companies' acquisition intensity, two (dependent) variables will be used. As it can be seen in Table 2, on average each company in our sample acquired 0.3 companies per year. Furthermore, there are companies that has not completed any acquisitions and the maximum number of acquisition made by a company in a year is 5. On average, the total value¹ spend by a company per year was just 1% of the total assets (but that includes several companies that had not done a single deal in a specific year) and in one case the deal value represented 56% of the acquired company total assets.

Table 2. M&A Intensity.

Dependent variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Acquisition number	440	0.3	0.693	0	5
Acquisition value (Deal Value/Total Assets)	409	0.01	0.046	0	0.56

Acquisition value is measured as the deal value deflated by total assets.

3.3.2. Company's Characteristics

Table 3 presents the companies' total assets. The companies in our sample have an average (median) for total assets of €3,034.73 million (€650.27 million).

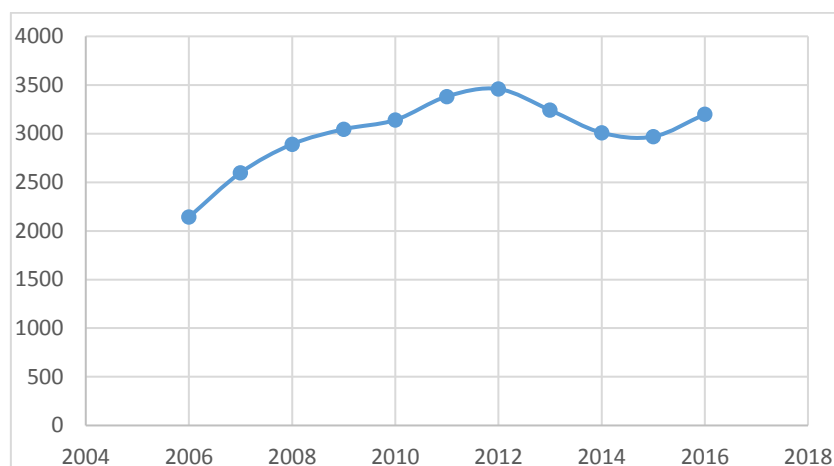
Table 3. Companies' Size (measured by total assets).

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Total assets (million euros)	3034.73	650.27	6690.76	17.85	43179.33

The Figure 3 shows the average values evolution of the total assets. Between 2006 and 2012 the average size of the companies in our sample (measure by its total assets) increased approximately 61.5%.

¹ Due to the lack of data about deal value for some deals, the average acquisition value was calculated only when the deal value was available for at least one deal per year. The average deal (for the deals which the value is known) was then multiplied by the total number of deals in that specific year.

Figure 3. Companies' Size (measured by the number of average total assets) over the years, between 2006 and 2016.



3.3.3. CEO's Characteristics

Regarding the CEO characteristics, Table 4 shows the main descriptive statistics. Looking at the dummy variables average we can conclude that approximately 49% of the CEO was not at same time the chairman. We also concluded that 93% of CEOs are male and that CEO has changed in 14% of our observations.

The CEO owns, on average 1.32% of total shares, range from 0% to a maximum of 26.86%. The youngest CEO in our sample is 32 years and the oldest 79 years, for an average of 50 years. Between 2006 and 2016 a CEO received on average €510,850.6 per year but no more than €2,525,093 in a single year.

Table 4. CEO Characteristics.

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
CEO Duality (dummy)	429	0.49	0.5	0	1
CEO Turnover (dummy)	421	0.14	0.35	0	1
CEO Ownership (%)	403	1.32	3.72	0	26.86
CEO Age (years)	192	50.04	9.23	32	79
CEO Gender (dummy)	429	0.93	0.26	0	1
CEO Remuneration (euros)	321	510850.6	453003.4	0	2525093

3.3.4. Board Characteristics

The Table 5 presents the descriptive statistics for the board composition.

In our sample, the board size goes from 3 to 25 members with an average of 8.85 directors. The proportion of independent directors in the board is on average approximately 18.39% (the median is very similar – 19.17%). However, some boards have no independent directors and in one case independent directors account for 77.78% of the board members. The average (median) proportion of the non-executive in the board is 46.32% (24.63%). Some boards do not have non-executive members, but in one case, they account for 90.91% of all board members.

On average, all board members (except for the CEO) own 2.85% of the company's shares.

Table 5. Board Characteristics.

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Independent proportion (%)	422	18.39	19.17	0	77.78
Non-executive proportion (%)	428	46.32	24.63	0	90.91
Board size (#)	429	8.85	4.19	3	25
Board ownership (%)	403	2.85	6.37	0	35.89

4. Results

4.1. Pooled OLS

The Tables 6 and 7 show pooled OLS regression estimates. It is possible to observe in the Table 6 that when the model is controlled by size (ln Total Assets) as in regressions 1 and 2, although both coefficients associated to independents and non-executive's percentage are negative but they are not statistically significant. However, when controlled by ln Board Size², the coefficient associated to the non-executive's percentage becomes statistically significant to a significance level of 10%³.

² Two of the control variables used: Total Assets and Board Size are correlated – the correlation coefficient between the two control variables is 0.6122 – and therefore, the regression will be estimated with the two control variables separated so that we can include the company and board size in the models, eliminating impacts between the explanatory variables and the dependent variable. This is not surprisingly since larger companies tend to have larger boards following Coles *et al.* (2008) and Boone *et al.* (2007).

³ The variable CEO Age, it will not be included in the models because the variable is only available to a very small number of observations and when included is not statistically significant and does not change the coefficients associated to other variables as we can see in the appendix 2.

Table 6. The effect of corporate governance on the number of acquisition completed
(Pooled OLS).

Explanatory Variables	Dependent variable - Acquisition Number			
	Reg1	Reg2	Reg3	Reg4
% Independent	- 0.0015 (-0.73)		- 0.0017 (-0.80)	
% Non executive		- 0.0024 (-1.30)		- 0.0034 * (-1.73)
ln Total Assets	0.0579 * (1.82)	0.0557 * (1.76)		
ln Board Size			0.0731 (0.72)	0.1203 (1.13)
CEO Duality	0.0002 (0.00)	0.0345 (0.41)	- 0.0192 (-0.23)	0.0168 (0.19)
CEO Turnover	- 0.0360 (-0.33)	- 0.0221 (-0.20)	- 0.0316 (-0.29)	- 0.0180 (-0.16)
CEO Gender	- 0.1310 (-0.86)	- 0.1196 (-0.80)	- 0.1362 (-0.89)	- 0.1255 (-0.84)
ln CEO Remuneration	0.0078 (0.13)	0.0114 (0.19)	0.0678 (1.44)	0.0634 (1.37)
% CEO Ownership	- 0.9757 (-0.78)	- 0.9781 (-0.79)	- 1.2663 (-1.00)	- 1.0888 (-0.86)
% Board Ownership	0.0550 (0.09)	0.0564 (0.09)	- 0.2319 (-0.38)	- 0.2536 (-0.42)
Constant	- 1.0477 * (-1.79)	- 0.9843 * (-1.71)	- 0.7596 (-1.35)	- 0.6869 (-1.24)
N	304	305	306	307
F	1.61	1.68	1.47	1.59
Prob > F	0.0558	0.0427	0.0993	0.0605
R ²	0.0925	0.0955	0.0845	0.0906
R ² adjusted	0.0352	0.0385	0.0270	0.0338

The dependent variable is the number of acquisition completed per year. The estimation method is Pooled OLS. T-statistics are reported in parentheses while ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

If instead of using the number of acquisitions we use the total value spend (deflated by total assets⁴), we can see in Table 7, that the coefficient associated to the variable non-executive director's percentage (Reg2) is still negative but now statistically significant, suggesting that the proportion of non-executive directors in the board affects (negatively) the amount spend in acquisitions⁵.

⁴ $\ln \text{AcquisitionValue} / \text{Total Assets}$ was calculated as $\ln (\text{AcquisitionValue} + 1) / \text{Total Assets}$

⁵ One percentage point increase in the percentage of non-executives causes a decrease of 3.098% in the value spend in acquisitions.

Table 7. The effect of corporate governance on the total amount spent on M&As deals (Pooled OLS).

Explanatory Variables	Dependent variable - ln Acquisition Value			
	Reg1	Reg2	Reg3	Reg4
% Independent	- 0.0297 (-1.47)		- 0.0285 (-1.37)	
% Non executive		- 0.0310 * (-1.74)		- 0.0244 (-1.28)
ln Total Assets	- 0.6884 ** (-2.30)	- 0.7337 ** (-2.47)		
ln Board Size			- 0.7651 (-0.80)	- 0.5883 (-0.59)
CEO Duality	0.7741 (1.03)	1.1491 (1.45)	0.9257 (1.15)	1.1487 (1.40)
CEO Turnover	- 0.8922 (-0.88)	- 0.7415 (-0.73)	- 0.9930 (-0.97)	- 0.9116 (-0.89)
CEO Gender	0.2123 (0.15)	0.2612 (0.19)	0.2455 (0.18)	0.2986 (0.22)
ln CEO Remuneration	0.2437 (0.44)	0.2908 (0.53)	- 0.4475 (-0.99)	- 0.5041 (-1.13)
% CEO Ownership	- 15.5355 (-1.36)	- 14.8817 (-1.32)	- 12.0378 (-1.02)	- 10.0357 (-0.86)
% Board Ownership	- 2.7049 (-0.47)	- 2.3208 (-0.40)	0.5340 (0.09)	1.1417 (0.20)
Constant	- 7.8374 (-1.42)	- 6.7894 (-1.25)	- 11.6793 ** (-2.19)	- 10.8216 ** (-2.05)
N	283	284	283	284
F	1.74	1.80	1.46	1.45
Prob > F	0.0327	0.0250	0.1053	0.1071
R ²	0.1062	0.1091	0.0904	0.0898
R ² adjusted	0.0452	0.0486	0.0284	0.0280

The dependent variable is the log of the total acquisition value plus one deflated by total assets. The estimation method is Pooled OLS. T-statistics are reported in parentheses while ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Consistently with Wang and Xie (2009) we can conclude that corporate governance strategies can influence the M&A intensity of a company, as our results suggest that non-executive directors play an important role in the M&A acquisition process.

Regarding the presence of independent directors in the company's board, some authors, such as Zhu *et al.* (2016), argue that there is a positive relationship between the presence of independent directors and performance and company value. However, in the coefficients associated to the proportion of independent directors in the boards are not statistically significant in any model.

Regarding the board size, Carline *et al.* (2009) compared the corporate governance strategies and concluded that the size of the board size analysed before the deal has a negative relation with the performance of the company. Zhu *et al.* (2016) assumes that "*Tobin's Q is negatively correlated with board size*" confirming the results of Carline *et al.* (2009) and Kumar and Singh (2013). On the other hand, Liu and Zhao (2012) using a sample of Chinese companies concluded that the board size has a positive relationship with the company performance but should have a medium size. Contrary to the previous variable, the shares own by the board affect the company's operating performance after the merger in a positive way, according to Carline *et al.* (2009) as well as Subrahmanyam *et al.* (1997) "*Abnormal returns are positively related to the proportion of ownership by outside directors*".

Finally, the size of the company affects the number of acquisition done by the company.

4.2. Panel Data with Fixed Effects

In this subchapter, the models will be estimated using Panel Data, with fixed effects. The results are shown in Table 8.

According to our results, there is no relationship between the proportion of independent and non-executive directors and the number of acquisitions. However, there is a negative relationship between the CEO duality variable and the acquisition's number at a significance level of 10%. Thus, when the CEO is not also the chairman there is a decrease in the number of completed acquisitions, which is contradictory to past literature. Carline *et al.* (2009) proved when the CEO is the same as the chairman at least two years before the deal, the company's performance is negative.

Table 8. The effect of corporate governance on the number of acquisition completed
(Panel Data with Fixed Effects).

Dependent variable - Acquisition Number				
Explanatory Variables	Reg1	Reg2	Reg3	Reg4
% Independent	0.0062 (1.32)		0.0050 (1.05)	
% Non executive		0.0005 (0.14)		- 0.0014 (-0.35)
ln Total Assets	0.1145 (1.06)	0.1126 (1.03)		
ln Board Size			0.2134 (0.93)	0.2827 (1.17)
CEO Duality	- 0.2327 * (-1.70)	- 0.2402 * (-1.66)	- 0.2551 * (-1.76)	- 0.2549 * (-1.74)
CEO Turnover	0.0362 (0.31)	0.0178 (0.15)	0.0247 (0.21)	0.0083 (0.07)
CEO Gender	- 0.2192 (-0.84)	- 0.2257 (-0.84)	- 0.2229 (-0.85)	- 0.2623 (-0.96)
ln CEO Remuneration	0.0086 (0.09)	0.0014 (0.02)	0.0293 (0.34)	0.0231 (0.26)
% CEO Ownership	- 0.4265 (-0.18)	- 0.2540 (-0.11)	- 0.5760 (-0.25)	- 0.4836 (-0.21)
% Board Ownership	0.3852 (0.34)	0.5734 (0.51)	0.2285 (0.20)	0.3348 (0.30)
Constant	- 2.1941 (-1.04)	- 1.9379 (-0.91)	- 0.5311 (-0.45)	- 0.3619 (-0.31)
N	304	305	306	307
N of groups	40	40	40	40
F	1.30	1.16	1.34	1.22
Prob > F	0.1856	0.2926	0.1642	0.2482

The dependent variable is the number of acquisition completed per year. The estimation method is Panel Data with Fixed Effects. T-statistics are reported in parentheses while ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

The results regarding our variables of interest – proportion of independent and non-executive directors – are similar when we try to explain the total deal value (Table 9).

Table 9. The effect of corporate governance on the total amount spent on M&As deals
(Panel Data with Fixed Effects).

Dependent variable - ln Acquisition Value				
Explanatory Variables	Reg1	Reg2	Reg3	Reg4
% Independent	0.0422 (0.99)		0.0436 (0.99)	
% Non executive		- 0.0398 (-1.12)		- 0.0431 (-1.14)
ln Total Assets	0.4532 (0.46)	0.4008 (0.40)		
ln Board Size			- 0.4986 (-0.23)	0.4391 (0.19)
CEO Duality	0.3794 (0.29)	0.8710 (0.64)	0.6038 (0.44)	0.8965 (0.64)
CEO Turnover	- 0.6711 (-0.62)	- 0.7683 (-0.72)	- 0.6567 (-0.61)	- 0.7832 (-0.73)
CEO Gender	- 1.3072 (-0.55)	- 1.9227 (-0.79)	- 1.2284 (-0.52)	- 1.9666 (-0.80)
ln CEO Remuneration	0.1662 (0.19)	0.2179 (0.25)	0.3297 (0.40)	0.3378 (0.41)
% CEO Ownership	- 5.1992 (-0.24)	- 4.0379 (-0.19)	- 5.0172 (-0.23)	- 4.3660 (-0.20)
% Board Ownership	- 5.3642 (-0.52)	- 5.0061 (-0.48)	- 5.7320 (-0.56)	- 5.5249 (-0.53)
Constant	- 30.3074 (-1.59)	- 26.4029 (-1.37)	- 22.4261 ** (-2.04)	- 20.4799 * (-1.85)
N	283	284	283	284
N of groups	40	40	40	40
F	1.63	1.62	1.62	1.61
Prob > F	0.0545	0.0564	0.0567	0.0582

The dependent variable is the log of the total acquisition value plus one deflated by total assets. The estimation method is Panel Data with Fixed Effects. T-statistics are reported in parentheses while ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

4.3. Probit Model

In addition to the estimation of models already presented, we also estimated a Probit Model⁶.

In the Table 10, the results of the Probit Model estimation are shown. Two of the models uses as control variable the total assets and other two the board size. Looking to the results we can conclude that the proportion of non-executive directors has a negative impact on the probability of a firm completing an acquisition since the coefficients associated to the percentage of non-executive variable are negative and statistically significant for a significance level of 10%, in the case total assets is used as control variable, and 5% when the board size is used as control variable.

⁶ This model uses a dummy variable as dependent variable and so give us the probability of the company complete an acquisition.

Table 10. The effect of corporate governance on the acquisition probability (Probit Model).

Explanatory Variables	Dependent variable - Acquisition dummy			
	Reg1	Reg2	Reg3	Reg4
% Independent	- 0.0074 (-1.40)		- 0.0076 (-1.41)	
% Non executive		- 0.0087 * (-1.91)		- 0.0109 ** (-2.26)
ln Total Assets	0.1150 (1.45)	0.0986 (1.25)		
ln Board Size			0.1074 (0.43)	0.2443 (0.94)
CEO Duality	0.1960 (1.00)	0.3285 (1.52)	0.1419 (0.68)	0.2788 (1.26)
CEO Turnover	- 0.2668 (-0.97)	- 0.2035 (-0.74)	- 0.2560 (-0.92)	- 0.1996 (-0.72)
CEO Gender	0.2474 (0.58)	0.2733 (0.65)	0.2242 (0.53)	0.2445 (0.58)
ln CEO Remuneration	0.0569 (0.38)	0.0723 (0.48)	0.1922 (1.63)	0.1700 (1.47)
% CEO Ownership	- 3.1799 (-0.83)	- 3.3396 (-0.85)	- 3.9210 (-1.02)	- 3.5556 (-0.89)
% Board Ownership	1.2137 (0.78)	1.2500 (0.80)	0.6525 (0.43)	0.6746 (0.44)
Constant	- 4.6400 *** (-3.14)	- 4.3170 *** (-2.97)	- 4.2179 *** (-2.92)	- 3.9045 *** (-2.75)
N	301	302	303	304
LR chi2	27.80	29.69	26.30	29.51
Prob > chi2	0.0473	0.0287	0.0692	0.0301
Pseudo R2	0.0952	0.1015	0.0898	0.1006

The dependent variable is the dummy acquisition. The estimation method is Probit Model. Z-statistics are reported in parentheses while ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Our results also show that the CEO characteristics do not influence the probability of completing acquisitions, which is contrary to previous research as according to El-Khatib *et al.* (2015), the CEO assumes a great importance because he is a director with powers and authority and "*enjoy better access to private information, greater bargaining power, and more loyalty and conformity in the boardroom.*" However, regarding the CEO's compensation the results, Grinstein and Hribar (2004) also argue that there is no relation to the acquisition performance.

5. Conclusion

The aim of this dissertation was to study the impact of independent and non-executive directors in acquisition intensity.

Acquisitions can affect the company's performance, upgrade logistics and monetize resources. For these reasons, it is necessary to understand how corporate governance strategies can improve the acquisition process. However, to our best knowledge, previous research did not study the Portuguese reality and most of its focus on the director's impact on the company performance.

In order to cover this gap in the literature, the corporate governance characteristics were analysed and were divided into two dimensions: CEO and board characteristics. With the objective to answer the two research questions, "*What is the independent and non-executive director's impact in the probability of complete an acquisition?*" and "*What is the independent and non-executive director's impact in the number and value of acquisition deals completed by the companies?*", a sample of 40 Portuguese firms was gathered. This sample focuses on listed companies on Euronext Lisbon between 2006 and 2016.

To achieve the main goal, was used a Pooled OLS and Panel Data with Fixed Effects estimation for the number of acquisitions and the total value spend as an explained variable, as well as a Probit Model representing the dependent variable as a dummy variable that assumes the value one if the company completes acquisitions.

The conclusions are concise. On the one hand, the study shows that the proportion of non-executive directors is negatively and statistically significant (Polled OLS models and Probit Model) for the number of acquisition and the value spend. On the other hand, although the coefficients associated to the independent director's percentage are negative, they are not statistically significant so we cannot conclude that it influences neither the number nor the value of these deals. This lack of impact does not mean that independent directors are not important in these decisions, but may not have a significant influence on the completion of these deals. We can also observe that the size of the companies affects positively the number of acquisition completed but negatively the total value spends in acquisitions (Pooled OLS Model), which suggest that larger companies complete more acquisitions but not necessarily with a higher value.

The conclusions of this dissertation are however limited by our small sample size and for focusing on Portuguese Companies. Finally, this study can be extended geographically.

6. Bibliography

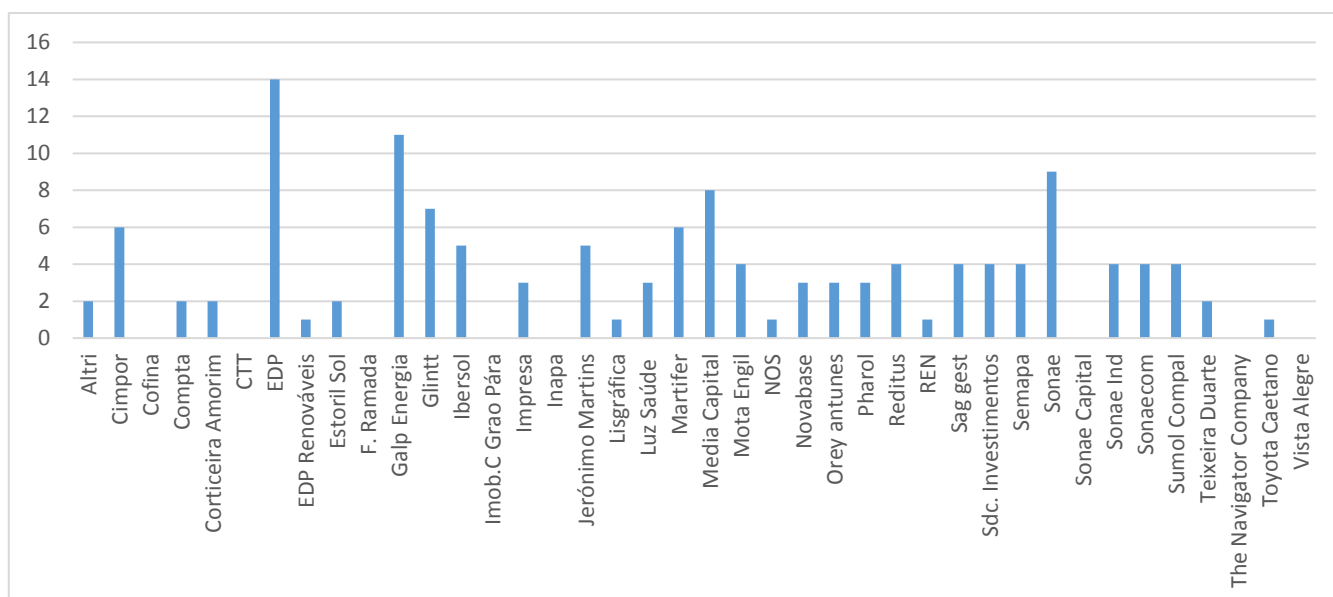
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7. Appendixes

Appendix 1



Source: Zephyr.

The table represents the acquisition's number made by the sample companies from 2006 to 2016.

Appendix 2

Dependent variable - Acquisition Number				
Explanatory Variables	Reg1	Reg2	Reg3	Reg4
% Independent	- 0.0028 (-1.00)		- 0.0029 (-0.99)	
% Non executive		- 0.0042 * (-1.88)		- 0.0043 * (-1.88)
ln Total Assets	0.1089 ** (2.50)	0.1027 ** (2.37)	0.1103 ** (2.39)	0.1064 ** (2.33)
CEO Duality	- 0.1724 (-1.32)	- 0.1241 (-0.94)	- 0.1689 (-1.24)	- 0.1138 (-0.82)
CEO Turnover	- 0.0269 (-0.16)	0.0044 (0.03)	- 0.0276 (-0.16)	0.0033 (0.02)
CEO Gender	0.1354 (0.51)	0.1878 (0.74)	0.1350 (0.51)	0.1904 (0.74)
ln CEO Remuneration	0.0539 (0.62)	0.0657 (0.76)	0.0552 (0.62)	0.0693 (0.79)
% CEO Ownership	0.4283 (0.11)	- 0.2463 (-0.06)	0.3760 (0.09)	- 0.4116 (-0.10)
% Board Ownership	1.6840 (1.51)	1.6091 (1.46)	1.7087 (1.48)	1.6787 (1.47)
CEO Age	- 0.0075 (-0.98)	- 0.0090 (-1.19)	- 0.0147 (-0.19)	- 0.0290 (-0.38)
CEO Age ²			0.0001 (0.09)	0.0002 (0.26)
Constant	- 2.5296 *** (-2.67)	- 2.4017 ** (-2.56)	- 2.3829 (-1.30)	- 1.9928 (-1.10)
N	141	141	141	141
F	1.57	1.73	1.48	1.63
Prob > F	0.0757	0.0397	0.1022	0.0550
R ²	0.1974	0.2137	0.1975	0.2141
R ² adjusted	0.0714	0.0902	0.0637	0.0832

The dependent variable is the number of acquisition completed per year when we added the CEO Age and CEO Age² variables. The estimation method is Pooled OLS. T-statistics are reported in parentheses while ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.