



M&A in Portugal: an event study

by

Elisabete Silva Martins

201006213@fep.up.pt

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Miguel Augusto Gomes Sousa, PhD

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THE AUTHOR

Elisabete Martins was born on 15th November 1992. In 2013, she completed the Bachelor degree in Economics in the School of Economics and Management (FEP), University of Porto. Currently, she is a Double Degree student at FEP and Kedge Business School, Marseille.

During a year, Elisabete worked in the company BPI – Vida e Pensões, S.A. managing Pension Plans and performing actuarial valuations, until September 2015.

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ABSTRACT

Mergers and acquisitions (hereafter M&A) volume has considerably increased during the last decades, and it has changed the way we manage companies. The present dissertation is dedicated to study M&A impact on acquiring firms' value. Our sample includes all acquiring companies that have merged or acquired a Portuguese company since 1997 to 2015. The study aims to clarify which factors affect acquiring shareholders' returns when investing in the Portuguese market. The research includes listed and unlisted target companies, in order to reflect relevant and diversified M&A activity occurred in Portugal.

We consider that this study contributes significantly to the lack of M&A research regarding the Portuguese market. M&A deals are important for small economies such as Portugal, however previous literature is mainly confined to the UK and USA, and consequently it is difficult to interpret M&A value creation in the Portuguese market.

In order to examine acquiring shareholders' wealth we conduct an event study. Our findings show that acquiring companies of Portuguese targets do not create or destroy value. The difference between acquiring shareholders' abnormal returns of foreign and domestic acquirers is insignificant. Considering the context of the M&A deal, the target legal status, the industry relatedness and the culture are irrelevant factors to the success of transactions with Portuguese targets. On the other hand, the payment method and the initial stake influence acquirers' gains.

Keywords: mergers and acquisitions, abnormal returns, cross-border acquisitions, event studies, Portugal.

JEL classification: G14, G34.

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1 – INTRODUCTION

Over the last decades, mergers and acquisitions (M&A) have been intensively analysed in different perspectives. Indeed, they produce a significant impact on the acquiring and target firms, affecting different areas such as human resources, marketing, and finance. Nonetheless, after several researches have analysed the impact of M&A on value creation (Campa and Hernando, 2004), there is still a high failure rate (Cartwright and Schoenberg, 2006). We consider that M&A literature has to be continually upgraded with new and relevant contributions, in order to better understand the complexity of this theme and improve companies' decisions.

M&A have an unquestionable role in the economy. Domestic M&A allow growing companies to increase its position in the national market. To compete in international markets, companies may need more volume of products or services. During the last decades, mergers and acquisitions have become a common choice for companies that want to explore cross-border markets (Teerikangas and Very, 2006).

Domestic and international M&As are very important transactions to a small and opened economy as Portugal. Nevertheless, there are few researches concerning the M&A market in Portugal (Oliveira, 2004). Actually, before the last M&A wave, merger activity was concentrated in the US and UK (Gugler et al., 2003). Cross-border studies are mainly focused on these two geographic markets (Goergen and Renneboog, 2004).

Event study is a methodology that supports a significant part of M&A research findings. By conducting an event study for mergers and acquisitions, we aim to analyse which factors affect the value of companies that invest in the Portuguese market. For that purpose, and assuming the stock market is efficient and so the share price instantaneously reflect the actual value of future gains/losses, we will focus on the acquiring shareholders' stock change around the announcement date. The questions we aim to answer are described below:

- Does an M&A of a Portuguese firm increase the acquiring shareholders' wealth?
- Which factors most affect acquiring shareholders' gains/losses?
- Are those gains/losses of foreign acquiring companies significantly different from domestic bidders' returns?

The Portuguese M&A market does not have a similar volume to the countries analysed in relevant articles of the literature, therefore we will consider all deals since 1997¹.

This research is relevant to the M&A since it will contribute to fill some gaps in the Portuguese M&A market literature, allowing a better understanding about the dynamics of a small M&A market, specifically about the dominant factors influencing value creation on this kind of market.

In the following section, it will be reviewed the most relevant literature in order to synthesize the theory that supports our study. The Chapter 3 presents the methodology used to measure the abnormal returns, and the sample. Finally, Chapter 4 presents our findings and Chapter 5 concludes.

¹ M&A occurred in Portugal since 1997 due to the lack of information for previous years in the database ZEPHIR.

2 – LITERATURE REVIEW

In section 2.1 important definitions and their differences are clarified. In section 2.2 it is discussed the main methodologies used in the M&A literature, their characteristics and problems. Besides, it is presented the findings of similar studies over different periods of time and considering different methodologies in order to understand M&A value creation and differences between cross-border and domestic M&A. The section 2.3 resumes the main conclusions regarding the impact of payment method, culture, industry relatedness, legal status, and relative size on the shareholders' returns. After this section, the Portuguese M&A market will be analysed.

2.1 – Definition of merger and acquisition

M&A can be defined in three categories (Ross et al., 2010): merger or consolidation; acquisition of assets; acquisitions of stocks.

Merger stands for transactions where one company acquirers another, including all its assets and liabilities. The bidding company offers directly to target's managers a price higher than the target's market value. Posteriorly, the proposal is approved or rejected by target shareholders (Jensen and Ruback, 1983). Consolidation is similar but it is created a new entity, while in a merger the acquiring company preserves its legal existence and the target is liquidated. This M&A category implies a joint decision taken by both parts.

Acquisition of assets occurs when the acquiring firm purchases a considerable part or all the target firm's assets. The acquiring firm can offer stock, cash, or a mixed payment (combination of stock and cash). On the other hand, acquisition of stock² is a different transaction in the sense that the acquiring company buys voting stock, generally, directly from the target's shareholders. It is not required that target's managers agree with the deal and their opposition can increase the costs of the acquisition comparing with a merger. Indeed, a formal merger takes place when all the stock is purchased.

² Also called tender offer.

2.2 – Research approaches and findings

M&A activity comes in waves, as a consequence of economic, technological, political, regulatory and financial shocks (Martynova et al., 2008). The first wave began at 1890's and ended in 1903. The second wave occurred between 1910s and 1929 and the third between 1950s and 1973. The period of the fourth and fifth waves was respectively 1981-1989 and 1993-2001. At the beginning of a takeover wave, shareholders' wealth increase, while during and after the peak wave, shareholders' wealth is negatively affected (Moeller et al., 2005). According to Martynova et al. (2008), the early successful takeovers are a result of industrial shocks; new synergies are generated for the companies involved. In the second half of a takeover wave it is emphasized the negative impact of managerial hubris and agency costs. Moeller et al. (2005) emphasize that only a few number of acquisitions announcements contribute to the huge losses observed in the end of the fifth wave, investors stop believing that successive acquisitions made by some firms would create the expected value.

In the next sections we will present two different performance studies and their findings for the European, UK and US M&A market.

2.2.1 – Operating and financial performance studies

Operating performance study is one of the two main approaches used to analyse M&A profitability. These studies analyse changes in acquirers' performance, considering the accounting statements before and after the deal. It is considered that when expected gains at the deal announcement are realized, they will affect acquiring company's cash flow, which implies value generation to the firm (Andrade et al., 2001). Examples of variables used to detect value creation are net income, return on equity/assets, and leverage, among others (Martynova et al., 2008).

Some operating performance studies compare acquirers' performance with other companies in the same industry. Analysing previous literature, findings are not consensual (Sharma and Ho, 2002; Martynova et al., 2006). Nonetheless, according to Sharma and Ho (2002) and Martynova et al. (2008), articles that use indicators related with cash flow tend to reveal performance improvements, and the contrary to performance tests based on earnings. Consequently, the results of operating

performance studies are sensible to the type of accounting method³. The inconclusive results can also be partially explained by the different choices of a peer group, i.e., benchmarking (Martynova et al., 2006).

With a dominant role in the M&A literature, event study methodology allows us to investigate the impact on financial performance caused by a certain event. Studying the adjustment of stock prices in stock splits, FFJR⁴ (1969) were pioneers in using an event study methodology based on the market model (MM). The abnormal return, i.e., the economic impact, is the positive or negative difference between actual return and the benchmark's return. According to Bruner (2004), a benchmark should be used to exclude the influence of external factors not related with the deal on share price. The benchmark can be defined with the capital asset pricing model (CAPM) or using a large market index.

When conducting an event study, we assume that markets are efficient, i.e., share prices always reflect all available information⁵. Thereby, share prices will change when new and unexpected information regarding an M&A deal (an event) is revealed. In fact, the announcement of the M&A deal brings new information to the market and consequently investors review expected future earnings for the companies involved. At the announcement, takeover's expected net present value is expressed in additional variations in share price of acquiring and target firms (Martynova, 2011).

Researchers can use the event study methodology to study M&A abnormal performance in the short or long-term. Several methodological problems arise when long-term performance is analysed (Andrade et al., 2001; Martynova et al., 2008). Examples of concerns are the fact that the statistical relevance of the findings varies with the type of benchmark model used⁶; and shareholders' gains are affected by different factors in the long-term and it is difficult to isolate the takeover effect (Campa and Hernando, 2004). If markets are efficient, abnormal returns may not exist in the long-term and as a consequence an analysis over the announcement period covers, on average, the total abnormal performance (Franks et al., 1991).

³Analysing UK takeovers, Chatterjee and Meeks (1996) report a different pattern of profitability comparing two periods with distinct accounting methods (1977 to 1984 and 1985 to 1989). The change of accounting standards after 1985 had a positive effect on firms' profitability.

⁴Fama, Fisher, Jensen and Roll

⁵See Fama (1970)

⁶See Franks et al. (1991); Higson and Elliott (1998); Frank and Harris (1989)

To sum up, the impact on shareholders' wealth is linked with the stock market reaction during the period around the announcement of the M&A deal. According to McWilliams and Siegel (1997), it is more effective to use event studies than accounting studies, as stock prices are much less manipulated by managers than accounting returns. Incremental changes in the stock price are based on the firms' right value.

2.2.2 – Do mergers and acquisitions create value?

Value can be created, preserved or destroyed when returns earned are higher, equal, or lower than what was required by investors (Bruner, 2004). Therefore, an M&A fails when value is destroyed. To better understand the conclusions of important contributions to the M&A literature, we analysed operating and financial performance studies realized for different waves, considering the US, UK, and European M&A market (appendix 1).

The regulatory environment was completely different between 1910 and 1929 (2nd wave). Analysing financial performance for this period, bidders' abnormal returns are close to zero in the US market, and negative if it is only considered tender offers (Leeth and Borg, 2000).

Considering M&A realized between 1950 and 1973 (3rd wave), operating and financial performance studies report divergent evidence. In the UK and regarding financial performance, Frank and Harris (1989) present different findings depending on the type of M&A: tender offers have a positive effect on acquiring shareholders' wealth, while mergers produce a negative effect. Hogarty (1970) affirms in his operating study that, on average, acquiring companies in US have a worse investment performance than other firms of the same industry. But Lev and Mandelker (1972), another operating study for the US market, report positive performance for acquiring companies in the post-acquisition period.

After the 3rd wave, the years from 1981 to 1989 represented the 4th wave. For the UK and US M&A markets respectively, and analysing financial performance, Higson and Elliott (1998) and Morck et al. (1990) use uncommon benchmark models to calculate the abnormal returns but both conclude that acquiring companies obtain insignificant returns. Similarly, Franks et al. (1991) find small negative abnormal returns at the announcement period with the Market Model. Considering the long-term

abnormal performance, there are also insignificant returns for tender offers but acquiring firms lose with mergers (Agrawal, et al., 1992). Regarding operating performance studies for the 4th wave, Sharma and Ho (2002) present an insignificant post-acquisition operating performance for deals occurred in Australia during the 4th wave. For the US market, Healy et al. (1992) report a different finding: acquiring companies obtain increases in operating cash flow returns comparing with their benchmark, without jeopardizing the long-term sustainability. This finding is positively related with the abnormal returns at the announcement period. Therefore, the future cash flows to shareholders projected at the announcement were realized (Healy et al., 1992).

Jensen and Ruback (1983) and Jarrell and Poulsen (1989) review previous literature before 1981 and 1986 respectively, taking into consideration financial performance articles. Their objective was to consolidate evidence of stock prices changes in mergers and tender offers, analysing for that purpose the 3rd and 4th waves. According to Jensen and Ruback (1983), in regard to mergers, the conclusions of previous researches are mixed. Respecting successful tender offers, Jensen and Ruback (1983) state that abnormal returns to acquiring firms are positive and significant, while Jarrell and Poulsen (1989) find a small and, in some cases, a negative effect on shareholders wealth at the announcement period.

Andrade et al. (2001) characterize the period between 1993 and 2001 (5th wave) as a “decade of deregulation”, due to the notable influence of deregulation in the M&A activity. Campa and Hernando (2004) state that the cost of M&A in the European Union (hereafter EU) decreased with the deregulation in economic sectors, the integration of industrial activity confined to the national markets, and the listing of large European firms that were controlled by national governments. The authors emphasize that this process was triggered by the introduction of a single currency and the creation of an economic and monetary union. Consequently, the volume of M&A inside the EU market has increased considerably after 1998 to 2000, although mostly due to domestic transactions (Campa and Hernando, 2004). Indeed, the fifth wave has affected particularly European companies as it was the first period when M&A activity reached similar levels comparing with US market (Martynova et al., 2008).

During the 5th wave, European bidders' wealth has slightly changed; the abnormal returns were positive and significant at the announcement day (Goergen and Renneboog, 2004; Martynova et al., 2011). On the other hand, Campa and Hernando (2004) report insignificant abnormal returns for acquiring firms of non-financial deals in the EU over the period 1998 to 2000, which comprises the last years of the 5th wave. Regarding operating performance studies, Martynova et al. (2006) find no significant changes in performance during the post-acquisition period. The analysed acquiring and target companies had a better performance than the median peers of their industries before the deal, which may have influenced their decision to realize an acquisition (Martynova et al., 2006). Gugler et al. (2003) report that acquiring firms' sales decrease and profits increase significantly during the post-merger period. This conclusion is valid for the different world regions analysed.

Moeller's et al. (2004) and Andrade et al. (2001) elaborate financial performance studies that analyse the 4th and 5th wave in the US market. The first article considers M&A deals while Andrade et al. (2001) investigate mergers performance. Moeller's et al. (2004) state that acquiring shareholders of public companies significantly gain with the transaction at the announcement period. On the other hand, the same authors report insignificant and close to zero long-term returns. In contrary, Andrade et al. (2001) find negative returns to acquiring shareholders in mergers but the results are not statistically substantial.

To sum up, previous literature is not consensual regarding the impact of acquisitions on firms' operating performance (Sharma and Ho, 2002; Martynova et al., 2006). In fact, these studies are vulnerable to the accounting system. Considering the financial performance studies, the findings are also not consensual. However, it is possible to affirm that until the 4th wave, in general, M&A had an insignificant impact on acquiring firms' value and during the 5th wave some authors report value creation at the announcement period. Additionally, mergers seem to produce a negative impact on acquirers' gains, while tender offers have a close to zero/positive abnormal performance.

As a final remark it is important to retain that target shareholders' returns are significantly higher than acquiring shareholders' (Jensen and Ruback, 1983; and Jarrell and Poulsen, 1989). Differences in relative size of the target and bidder firm (when the

target is relatively small), regulatory changes and high competition between bidders are factors that diminish acquiring shareholders' wealth (Jarrell and Poulsen, 1989). In fact, Andrade et al. (2001) affirm that announcement gains may be totally captured by target shareholders.

2.2.3 – Cross-border versus domestic M&A

Some operating and financial performance studies are focused on the impact of cross-border deals in acquiring companies' value (appendix 2). Indeed, we can separate a certain sample of mergers and acquisitions in transactions limited to the national borders - domestic deals, or transactions that involve firms from different economies - cross-border deals.

Cross-border M&A and Greenfield investments are the two main types of Foreign Direct Investment (hereafter FDI). Following the OECD⁷ definition, FDI results from the interest of a direct investor in an entity of another economy. This interest should imply at least the ownership of 10% of the target entity. According to Rodrigues (2009), international M&A have a negative effect on economic growth of developing countries, while there is no impact on economic growth of developed countries. In 2014, cross-border M&A increased 66% for non-developed economies, while their value increased 16% in developed economies (UNCTAD, 2015)⁸.

After 1993 (the beginning of the 5th wave), cross-border deals represented 23% of European deals, while in the end of the 5th wave this percentage raised to 32% (Martynova et al., 2011). Although cross-border activity has increased, the predominance of domestic bids in Europe is emphasized by Goergen and Renneboog (2004): 63% of large deals are domestic. In fact, some barriers were still harming the cross-border M&A activity in the EU, as well as the regulatory differences between members and the strong governmental control over large M&A (Campa and Hernando, 2004). The 5th wave was also a period of increase in cross-border M&A activity for US acquirers due to a decrease in Greenfield investments and the growth in international financial markets (Francis et al., 2008).

⁷ Organisation for Economic Co-operation and Development

⁸ World Investment Report 2015, United Nations Conference on Trade and Development (UNCTAD)

Due to the proportion of cross-border deals to domestic deals before 1993, we consider that it is only relevant to examine cross-border literature after the 4th wave. Hence, bearing in mind the period between 1993 and 2001 (5th wave) and the financial performance analyses, we present below evidence reported to the European and US market.

Regarding positive findings, Martynova et al. (2011) present a positive effect of cross-border and domestic deals on European acquirers' abnormal performance at the announcement day, wherein cross-border returns are lower. Campa and Hernando (2004) also present lower abnormal returns for cross-border M&A realized in the EU.

In contrast, the results of Martynova et al. (2011) in the post-acquisition period show that cross-border and domestic M&A do not create value. Doukas and Travlos (1988) also find insignificant abnormal returns for US acquirers in cross-border announcements, the expected benefits of exploring foreign markets are lower than the costs. However, the authors state that acquiring companies obtain a positive abnormal performance when they were not already operating in the target country.

Notwithstanding, some authors report divergences between the performance of cross-border and domestic bidders. Goergen and Renneboog (2004) state that European acquirers earn positive and significant abnormal returns in cross-border deals, whereas in domestic deals abnormal returns are negative and insignificant. On the other hand, Moeller and Schlingemann (2005) state that domestic acquirers have a better financial and operating performance than foreign acquirers. Moeller and Schlingemann (2005) and Francis et al. (2008) find a negative cross-border effect for US acquiring companies in the first half of the 5th wave. In contrast, Francis et al. (2008) show that cross-border effect is insignificant from 1996 to 2003.

Now, considering operating performance studies, Gugler et al. (2003) conclude that there are not relevant differences between domestic and cross-border deals for M&A deals around the world in the post-acquisition period. For both types of M&A, sales are negatively affected and profits do not suffer significant impacts. The conclusions are different for Martynova et al. (2006): European combined firms' profitability is negative in cross-border M&A, and positive in domestic M&A. This difference is relevant in economic terms.

Concluding, cross-border M&A volume started to be relevant in the 5th wave. The several studies analysed do not present the same conclusion regarding value creation. Nonetheless, acquirers' abnormal performance is correlated with the operating performance (Moeller and Schlingemann, 2005). Rossi and Volpin (2004) highlight the importance of bilateral trade for cross-border activity. We expect that cross-border M&A of Portuguese targets are frequently conducted by a European acquirer. Nevertheless, as there are still regulation barriers between EU members (Campa and Hernando, 2004), we expect that cross-border acquisitions of Portuguese targets by a European acquirer have an insignificant or negative impact on value creation.

2.3 – Determinants of acquiring shareholders' gains

The acquirers' earnings are not easy to explain as they can be influenced by several factors simultaneously. In fact Bruner (2004, p.63) emphasizes the heterogeneity of M&A, "*all M&A is local*", meaning that the particular context of each deal explains an important part of its success/failure. Studying the context of M&A deals, some authors found evidence that the payment method, bidder and target's characteristics, among other factors, influence acquiring shareholders' gains.

2.3.1 – Payment method

The payment method can be used to minimize the risks of a takeover, for instance, related with loss of control and the valuation of the target firm (Martynova and Renneboog, 2009). If there is asymmetric information between acquirers and external investors, acquiring managers use cash offers when they believe their shares are undervalued in the market, and equity in the opposite case (Myers and Majluf, 1984; Goergen and Renneboog, 2004).

The ownership structure of the acquiring firm can impact on the shareholders valuation of the payment method. If the major acquiring shareholder has an intermediate level of control and the target firm has a high level of ownership concentration, cash payment may be chosen in order to keep the larger acquiring shareholder's control position (Faccio and Masulis, 2005; Martynova and Renneboog, 2009).

Franks et al. (1991) state that acquiring companies' equity may be negatively revaluated after an all-equity offer. In fact, there is evidence that acquiring companies have negative abnormal returns in equity offers (Travlos, 1987; Servaes, 1991; Andrade et al., 2001). In accordance with this evidence, Servaes (1991) and Martynova et al. (2011) present positive and significant returns for shareholders in all cash payments. On the other hand, Goergen and Renneboog (2004) report higher abnormal returns for equity offers than cash offers. Leeth and Borg (2000) find no evidence that the payment method affects shareholders' returns (appendix 3).

Acquiring companies pay a higher premium in cross-border M&A comparing with domestic deals (Goergen and Renneboog, 2004). Cross-border deals are likely to be paid in cash due to target's reluctance to accept foreign stock (Rossi and Volpin, 2004; Martynova and Renneboog, 2009).

2.3.2 – Bidder's attitude

An acquisition can be friendly or hostile, depending on the target firm's reaction. It is a hostile bid if the target's management and board of directors do not agree with the deal or the acquiring firm negotiates directly with the target's shareholders (Goergen and Renneboog, 2004; Martynova and Renneboog, 2009).

Goergen and Renneboog (2004) and Martynova et al. (2011) find positive and significant abnormal returns for acquiring firms that have a friendly attitude towards the target. On the other hand, Frank and Harris (1989), Franks et al. (1991), and Servaes (1991) show that there is a negative effect of friendly bids on shareholders' wealth, although only Franks et al. (1991) report significant evidence (appendix 4).

The opposed bids by target companies have a negative abnormal performance (Franks et al., 1991; Servaes, 1991; Goergen and Renneboog, 2004; Martynova et al., 2011), a significant finding for European bidders (Goergen and Renneboog, 2004). Although it is expected some synergies in a hostile M&A, acquiring shareholders anticipate that the company has to pay a high premium as target's management and shareholders may not agree with the deal (Martynova et al., 2011).

Volpin and Rossi (2004) present a positive relation between hostile deals and target's legal environment, in terms of common regulation and a similar shareholder protection. Consequently, it is expected lower hostile deals in target countries with

cross-border regulation. Volpin and Rossi (2004) state that cultural differences may trigger hostile attitudes in cross-border takeovers.

2.3.3 – Industry relatedness

In an M&A, the industry relatedness between the two firms may be a determinant of value creation to acquirers. Focused acquisitions occur when the acquirer buys a target that operates in the same sector or in a related industry. Diversified acquisitions involve targets from non-related businesses⁹.

Goergen and Renneboog (2004) report a positive effect of acquisitions for manufacturing and retailing industries, whereas for energy and service sectors there is a negative effect on acquirers' returns. The financial sector has significant value creation in the short-term, but the abnormal returns are negative in the long-term.

Analysing US and UK markets, there are positive abnormal returns for acquiring shareholders of focused acquisitions (Morck et al., 1990; Leeth and Borg, 2000; Martynova et al., 2011). However, only Martynova et al. (2011) present significant evidence of value creation (appendix 5). According to Andrade et al. (2001), M&A waves are characterized by different industry compositions, i.e., each industry is most likely to present high volumes of M&A in a specific wave than in the remaining waves.

Considering diversified acquisitions in the US, there is a negative impact on shareholders' wealth (Morck et al., 1990; Leeth and Borg, 2000). This finding is statistically significant in Morck et al. (1990). Nonetheless, Martynova et al. (2011) find positive abnormal returns for diversified deals in the European market.

Regarding cross-border operations, Doukas and Travlos (1988) find a positive relation between announcement returns and diversifying acquisitions when the acquiring company is a multinational entering in a new market.

In general, focused acquisitions create value while diversified acquisitions destroy acquiring shareholders value. A diversifying deal is beneficial to acquirers as it allows to increase the capital market with domestic or foreign targets. Nevertheless, agency costs, operating inefficiencies and other costs of diversification surpass the expected benefits (Martynova et al., 2011).

⁹ The industry relatedness is commonly analyzed using the digit SIC codes of the companies.

2.3.4 – Relative size

The relative size between the acquirer and the target may influence the deal's gains. Hence it is important to study the role of relative size in the M&A success.

Jarrell and Poulsen (1989) state that when the target is relatively small, the acquiring shareholders' gains are negatively affected. In fact, Asquith et al. (1983) and Servaes (1991) affirm that acquisition of larger targets create value. Considering the announcement month and a large window, Frank and Harris (1989) also document significant positive abnormal returns when the relative size of target to bidder is between 50% to 100% and the results are worst as the target relative size decreases. Though, Martynova et al. (2011) report negative abnormal returns for Continental European bidders.

Roll (1986) presents some justifications for the fact that acquiring large companies gain higher abnormal returns. Firstly, bidders may carry on a more accurate valuation for large targets as a bad acquisition will affect considerably the acquirer. Therefore, the bidder can offer a lower premium. Additionally, the acquiring firm has more rivals when the target is small, which decreases its bargaining capacity. On the other hand, Martynova et al. (2011) emphasize that the acquisition of larger targets imply a more complex integration and hence investors may expect lower gains as synergies will be affected by integration costs.

2.3.5 – Legal status

The acquisition of private companies encompasses different procedures and challenges comparing with public companies. A private target is a firm with 100% of control and ownership concentration (Martynova et al., 2011).

By studying the US market, Travlos (1987), Chang (1998) and Moeller et al. (2004), and the Western European acquisitions, Faccio et al. (2006), it is reported a listing effect in both markets: negative acquiring shareholders' abnormal returns when a listed target is involved in the acquisition, and positive abnormal returns for unlisted targets (appendix 7). It is easier to negotiate with a concentrated corporate control and private firms' shares may have a price discount due to their illiquid characteristic (Martynova et al., 2011).

Faccio et al. (2006) consider that different legal firms should be analysed separately as listed and unlisted targets present contrary results when studying the payment method effect on abnormal returns. In fact, considering listed targets, Travlos (1987), Moeller et al. (2004) and Faccio et al. (2006) report negative abnormal returns with stock payment. For privately held targets, there is evidence of higher abnormal returns for acquiring shareholders that offer stock (Chang, 1998; Moeller et al., 2004; Faccio et al., 2006). Nevertheless, the acquirer is more likely to offer cash for unlisted targets to control the risk of ownership change (Faccio and Masulis, 2005).

Following the conclusions of Faccio et al. (2006), when the target is a public firm, cross-border deals have a positive effect and domestic deals have a negative effect on acquiring firm's abnormal performance. On the other hand, Conn et al. (2005) state that cross-border deals are unfavourable for acquirers of public firms. Considering private targets, acquirers' announcement returns are positive for both types of deals (Faccio et al., 2006; Conn et al., 2005).

2.3.6 – Culture

Cartwright and Schoenberg (2006) state that it is necessary to study the integration process itself: for instance, the cultural impact on an M&A process. Defining culture in an M&A context is not simple¹⁰. Teerikangas and Very (2006) affirm that there is a relevant link between culture and M&A success. It is expected that the capital market considers the cultural differences when it values a merger, using all information available (Weber and Menipaz, 2003).

Commonly, one expects culture to have a negative relation with M&A performance due to cultural barriers and consequent costs of integration. Indeed, Conn et al. (2005) report a negative effect of national cultural differences on the post-acquisition returns of cross-border deals. On the contrary, Morosini et al. (1998) emphasize a positive relation between cross-border acquisition performance and the national cultural distance. Nevertheless, literature is not consensual regarding the type of impact of organizational

¹⁰ Culture is the constant influence of social and organizational forces over the individual, shaping his behaviour with routines, rules, etc, Edgar Schein (2004). National culture is a result of universal and cultural factors, as history and religion, affecting individuals' values. Posteriorly, at the workplace, each person learns corporate practices, becoming a member of a specific organizational culture (Hofstede et al., 1990).

and national culture on M&A. In order to interpret the controversial findings, Teerikangas and Very (2006) refer the importance of analysing organizational and national culture separately; and the importance of considering the M&A process dynamics.

Following Conn et al. (2005), we will use a composite index based on Hofstede's (1991) classification of four national cultural dimensions. This index will allow measuring the numerical difference between each acquirer's culture and the Portuguese target in cross-border deals.

2.4 – Portuguese market

The legal framework for M&A in Portugal is defined in the Commercial Code, and it is a civil law jurisdiction (Morgado and Galvão, 2013). The Portuguese M&A legal system has been based on the UK and US jurisdictions.

Over the last two decades the FDI inward stock for Portugal has been increasing significantly: in 1990 it was 9,604 millions of dollars while in 2014 it represented 108,515 millions of dollars. In 1997 the FDI inward stock was 18,076 millions of dollars UNCTAD (1999)¹¹. The entry of Portugal into the Economic European Community in 1986 had a great importance in the following years in terms of FDI inflows (UNCTAD, 1998)¹².

Analysing the report of UNCTAD (2010)¹³ one can see that there was a significant decrease in FDI inflows between 2008 and 2009, as a consequence of the economic and financial crisis. In the following years FDI inflows have been recovering, except in 2013 where there was a drop (UNCTAD, 2015)¹⁴. This pattern of FDI is in accordance with a slowdown M&A activity in terms of volume and value in the beginning of the crisis and the recovery period after (appendix 8). Portugal has been recovering from the economic and financial crisis with several public policies integrated in an Economic and Financial Adjustment Program. Nevertheless, there is still a high unemployment rate

¹¹ World Investment Report 1999, United Nations Conference on Trade and Development (UNCTAD)

¹² World Investment Report 1998, United Nations Conference on Trade and Development (UNCTAD)

¹³ World Investment Report 2010, United Nations Conference on Trade and Development (UNCTAD)

¹⁴ World Investment Report 2015, United Nations Conference on Trade and Development (UNCTAD)

and a deflation threat, which leads to competitive costs and attracts international investors (EY, 2014).

2.4.1 – Research findings for the Portuguese Market

Considering operating performance studies, Barreira (2011) analyses five case studies of M&A that occurred in Portugal with the case study method. The findings are inconclusive, i.e, it is not possible to affirm which is the impact of M&A on operating performance during the pre and post-acquisition period (Barreira, 2011). Cunha (2012) studies the impact of M&A in shareholders' wealth using performance indicators and the Economic Value Added (hereafter EVA). More specifically, the author analyses three case studies occurred between 2004 and 2008. On average, the EVA increases after the transactions, suggesting value creation for acquiring shareholders. It is also emphasized the fact that the indicator EVA is the most correlated with share price variations of analysed firms. Analysing the operating performance of M&A between SME companies in the Iberian Peninsula, Coelho (2013) finds value destruction for acquiring companies. The results were adjusted to the sector, dimension and pre-acquisition performance.

Now analysing event studies, Carvalho (2012) realized that takeovers present close to zero returns for acquiring shareholders in Portugal, over the period between 2000 and 2010. Foreign acquirers earn more significant returns than domestic acquirers. Oliveira (2004) reached the same conclusions for M&A realized between 1997 and 2004 as he reported insignificant abnormal returns for acquirers of Portuguese targets. In this study it is also emphasized that acquiring firms obtain large returns when the Portuguese target is public than when it is a private company.

If it is considered M&A activity inside the Portuguese banking sector, the empirical evidence is inconclusive. Cabo (2003) takes into account mergers realized in the Portuguese Agricultural Mutual Credit Integrated System since 1995 to 2001. In the post-acquisition period, the companies involved expect to take advantage of efficiency gains, in terms of costs reduction (due to a better management of factors of production) and an improved credit portfolio management. However, Cabo (2003) concludes that it is not achieved the expected positive impact of M&A for the sample analysed. Costa (2003) analyses the performance of a specific bank (Banco Comercial Português) that

has acquired a competitor bank (Banco Português do Atlântico). The indicators of acquirer's operating performance improve comparing with the peer group, concluding that there is value creation for the shareholders in the long-term.

2.4.2 – The importance of this study

As we have already stated, there are few researches in the M&A literature considering the Portuguese market (Oliveira, 2004). Indeed, M&A in Portugal do not have a similar volume or value comparing with other countries frequently analysed in the literature. Although it concerns a lower volume of M&A when comparing with UK or US, our study is relevant in the sense that we will investigate and look for evidence that supports a solid analysis of the Portuguese market. Knowing the main characteristics of the market and common problems may be very useful for future investors. Understandably, analysing a small sample implies a careful reading of the findings. We only include majority stakes and we limit our scope to “pure” M&A transactions, excluding deal types as Joint Venture, Spin-off, Private Equity and Buyback.

Oliveira (2004) and Carvalho (2012) consider temporal periods that are coincident with the period of our sample. The empirical evidence of the two event studies presented above is coherent. Accordingly, we expect to find low abnormal returns, on average, for acquiring firms of Portuguese targets.

Our study sets itself apart from Oliveira (2004) and Carvalho (2012)'s analyses as comparing with the first author, we apply more restricted criteria including only completed and non-financial transactions which minimizes the influence of several external factors in the average abnormal performance. Regarding the second study, we consider mergers and a bigger scope in terms of time horizon.

3 – SAMPLE AND METHODOLOGY

Our objective is to measure value creation for acquiring Portuguese companies. Event study is a methodology that uses financial market data to measure the impact of economic events, as an M&A, in firms value (MacKinlay, 1997). This approach supports a relevant part of M&A literature. Moreover, it is more adapted to the sample of this study. Comparing with other markets, the Portuguese market is characterized by a low volume of M&A activity. Focus on operating performance would have made the situation even worse limiting the number of years analysed: it is necessary long periods of observation when using direct productivity/operating measures (MacKinlay, 1997).

In our dissertation, value creation/destruction is calculated taking into consideration acquiring shareholders' cumulative average abnormal returns. They are the residual owners of the firm and consequently it is an efficient way to study value creation (Martynova et al., 2008). More specifically, we study the average reaction of the stock market to M&A announcements. In fact, new information about a possible M&A changes expected cash flows due to future synergies between the companies (Campa and Hernando, 2004). In efficient markets (FFRJ, 1969), stock prices variations entirely integrate M&A's wealth effect (Andrade et al., 2001). However, we have considered that the expected return does not consider all the announcement effects. The difference between the actual return (R) of the security and the normal return ($E(R)$), calculated for each day and company, represent abnormal return (AR):

$$AR = R - E(R).$$

3.1 – Measure of abnormal returns

The most common model used in the literature analysed is the MM (appendix 9). Some event studies use the economic model CAPM. MacKinlay (1997) states that the findings of these studies are very sensible to the restrictions applied in the CAPM. In our opinion the MM, considering market return as a factor model, has good explanatory characteristics to apply in our study. According to this model,

$$E(R_{i,t}) = \alpha_i + \beta_i * R_{m,t} + \varepsilon_{i,t} \quad (1)$$

assuming that:

$E(R_{i,t})$ - expected return of the share of acquiring firm i on day t ;

$R_{m,t}$ - return of a market index on day t ;

α_i - measure of average return of shares of acquiring firm i that is not explained by the market;

β_i - measure of sensibility of shares of acquiring firm i to market volatility.

$\varepsilon_{i,t}$ - stochastic error, $\sum \varepsilon_{i,t} = 0$

In the MM there is a linear relation between the share return and the market return (MacKinlay, 1997). If the event has not occurred, i.e., if there was no M&A announcement, the difference between actual return and expected return on day t would be zero. However, these returns may be different. The abnormal return (AR) of the share of the acquiring firm i on day t is obtained as follows:

$$\varepsilon_{i,t} = AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i * R_{m,t}) \quad (2)$$

$R_{i,t}$ - actual return of the share of acquiring firm i on day t .

The cumulative abnormal return (CAR) of the acquiring firm i for a certain event window is the sum of abnormal performances since the day $t=1$ until the last day of the window:

$$CAR_i = \sum_{t=1}^T AR_{i,t} \quad (3)$$

Finally, as we intend to present the abnormal performance of all acquiring firms, and using N as the number of companies, the cumulative average abnormal returns (CAAR) for acquiring firms are calculated as:

$$CAAR = \frac{\sum_{i=1}^N CAR_i}{N} \quad (4)$$

The event windows that should be used are not consensual (Goergen and Renneboog, 2004). Our study does not include the post-acquisition period due to the

lack of statistical relevance of long-term abnormal returns as reported in Andrade et al. (2001), Campa and Hernando (2004), and Martynova et al. (2008). It is important to analyse possible abnormal returns before the announcement day as some information may be revealed through rumours or private information (Martynova et al., 2011). We used a 3 day event window (-1, +1), i.e., considering one day before and after the announcement day. Andrade et al. (2001) state this window is frequently used in event studies. Based on other studies (appendix 9), it is also used the announcement day and windows of 2, 7, and 11 days [(0, +1); (-1, 0); (-5, +1); (-5, +5)] following Doukas et al. (2001). We have considered several windows in order to diminish biases and better assess the impact of M&A. A too small event window may exclude information released before the announcement in media, while an extended window may mistakenly include previous positive movements in the acquiring firm's stock price (Goergen and Renneboog, 2004).

Following the study of Martynova et al. (2011), our estimation window has 240 days (day $t = -270, \dots, -31$). It is important to have an extended estimation window as it is assumed that the MM parameters are constant over the window. The MM parameters were estimated for each company using the Ordinary Least Squares (hereafter OLS) method. The OLS regression uses the estimators $\hat{R}_{i,t}$ and $\hat{R}_{m,t}$ during the estimation window. The estimators were obtained using a logarithm transformation to approximate the returns form to normality (Henderson, 1990):

$$\hat{R}_{i,t} = \ln\left(\frac{P_t}{P_{t-1}}\right) \quad (5)$$

$$\hat{R}_{m,t} = \ln\left(\frac{I_t}{I_{t-1}}\right) \quad (6)$$

where,

P_t – market price of the share of acquiring firm i on day t ;

P_{t-1} – market price of the share of acquiring firm i on the day before day t ;

I_t – Index value on day t ;

I_{t-1} – Index value on the day before day t ;

We used the MSCI World Index as a proxy of the market return as our sample includes acquiring firms listed in different indexes worldwide. Nonetheless, The MSCI Europe Index was also used as market index in order to verify the robustness of the results. As the event window does not coincide with the estimation window, the estimated MM parameters are not affected by event returns. The abnormal returns entirely capture the announcement impact. We calculated the expected return as:

$$E(R_{i,t}) = \hat{\alpha}_i + \hat{\beta}_i * R_{m,t} \quad (7)$$

The expected returns were also estimated using the Market-adjusted model (MAM) and the Constant Mean Return model (CMRM). The MAM, a market model with restrictions (MacKinlay, 1997), does not consider the company risk: the expected return is equal to the market return ($\alpha=0$ e $\beta=1$). As a result, this model does not require the designation of an estimation window to estimate parameters.

$$E(R_{i,t}) = R_{m,t} \quad (8)$$

Brown and Warner (1985) conclude that simple models are comparable to more complex models in terms of capacity to identify abnormal performance. The CMRM considers that the expected return of each acquirer's share is equal to the historical mean over the estimation period ($\beta=0$):

$$E(R_{i,t}) = \frac{\sum_{t=-270}^{t=-31} R_{it}}{240} \quad (9)$$

3.2 – Test statistics

The next step was to measure the significance of the abnormal returns obtained. The objective was to test if the M&A announcement produces impact on the stock price. Considering a parametric test, the rejection of the null hypothesis ($H_0: CAAR = 0$) verifies that the event had impact for shareholders. Assuming that cumulative average abnormal returns (CAARs) have a normal distribution and are independently and

identically distributed over time, the test statistics for the null hypothesis has a t-Student distribution (Brown and Warner, 1985).

$$\mathbf{CAAR} \sim \mathbf{N}(\mathbf{0}, \sigma) \quad (10)$$

$$t_{stat} = \frac{\mathbf{CAAR}}{\hat{S}(\mathbf{CAR})} \quad (11)$$

$$\hat{S}(\mathbf{CAR}) = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (\mathbf{CAR}_i - \mathbf{CAAR})^2} \quad (12)$$

where:

t_{stat} – t-student test statistic with $n-2$ degrees of freedom for the MM and $n-1$ degrees of freedom for the MAM and CMRM;

CAAR – Cumulative average abnormal returns;

$\mathbf{CAR}_i$ – Cumulative abnormal return of firm i , $i = 1, \dots, N$

N – Total number of companies with available abnormal returns;

$S(\mathbf{CAR})$ – Standard deviation of CAR, an unbiased estimator of standard deviation of population (σ).

To better interpret our findings we have also used two non-parametric tests besides the parametric test. In fact, it is reasonable to expect that the abnormal returns may not verify the parameters defined. The non-parametric tests are less demanding on the sample behaviour but they are not affected by outliers, and hence they produce robust results. The first non-parametric test used was the Wilcoxon signed-rank test (Wilcoxon, 1945). This test considers the absolute value of abnormal returns (H_0 : median is equal to zero). The test statistics is assumed to approximately follow a normal distribution when the number of observations is large:

$$\mathbf{z} \sim \mathbf{N}(\mathbf{0}, \sigma) \quad (13)$$

$$\mathbf{E}(\mathbf{z}) = \frac{N(N+1)}{4} \quad (14)$$

$$\sigma^2(\mathbf{z}) = \frac{N(N+1)(2N+1)}{24} \quad (15)$$

$$\mathbf{z} = \sum_{i=1}^N r_i \quad (16)$$

where:

z – Statistics for the Mann-Whitney rank test

r = abnormal return for the observation i

N = Number of observations i in a certain event window

The use of daily data may imply abnormal returns with biased distribution, and hence the sign test is not appropriated (MacKinlay, 1997). The Mann-Whitney-Wilcoxon rank-sum test allows us to test the significance of two independent samples when there is nonsymmetry. Mann and Whitney (1947) improved the rank test proposed by Wilcoxon (1945) considering two samples with different dimensions. The null hypothesis can be defined as “ H_0 : There is no difference between the ranks of the two samples”.

$$\mathbf{z} \sim \mathbf{N}(\mathbf{0}, \sigma) \quad (17)$$

$$\mathbf{z} = \frac{U - \frac{n_A n_B}{2}}{\sqrt{\frac{n_A n_B (n_A + n_B + 1)}{n_A + n_B}}} \quad (18)$$

where:

z – Statistics for the Mann-Whitney rank test

U – smaller sum of ranks between the two samples

n_A – dimension of sample A

n_B – dimension of sample B

3.3 – Sample description

In this section we present the sample used in our study. For an M&A transaction to be included in the sample, we have defined some requirements: (1) the target firm is Portuguese; (2) the transaction was “*completed*” or “*completed-assumed*” between January 1997 and December 2014; (3) deal type is *Acquisition* or *Merger* - divestitures, joint-ventures, and management buyouts were not included, neither failed transactions as the anticipated gains in real asset were not realized; (4) the acquisition implies a change in ownership positions, i.e., the acquirer should control less than 50% of the target before the deal, and more than 50% after; (5) the companies involved are not financial institutions. After applying these five criteria in the Zephyr database, we have obtained a sample with 212 M&A transactions.

Analysing the sample, it was eliminated transactions for the same acquirer that do not respect at least 120 trading days between the announcement days. Therefore, 60 cases were removed.

The exclusion of acquirers that do not have available stock prices in some days of the event windows, or at least for 80 days of the estimation window affected 38 cases. Hence, the final sample for future considerations is constituted by 114 M&A bids.

The identification of the correct announcement day is, unquestionably, very important when studying the abnormal returns caused by M&A publication. As a consequence, the information of Zephyr was verified in comparison with Bloomberg and News.

The historical price (converted to USD) of all acquirers’ stock and MSCI Indexes were gathered using the Bloomberg database.

Table 1 shows specific characteristics of our sample considering several important sub-samples based on the literature review. It is important to underline that there is a huge lack of information for the M&A bids studied, the conditions were not disclosed to some transactions.

The number of cross-border bids surpass considerably the domestic bids which suggest that foreign companies are interested in making acquisitions in Portugal. Cross-border transactions are very important to the M&A market dynamics in the Portuguese economy.

Table 1 - Description of sample characteristics

	No. of bids
Cross-border bid	
Yes	72
No	42
Payment Method	
All cash	31
All stock	6
Mixed	12
Legal form	
Private target	18
Public target	55
Bidder's attitude	
Friendly	114
Hostile	0
Initial stake equal to 0%	
Yes	84
No	22
Industry relatedness	
Focused acquisition	59
Diversified acquisition	55
Relative Size of target to acquirer	
Less than 50%	43
Between 50% to 100%	7
Cultural Difference	
High	34
Low	37
All M&A transactions considered	114

Source: Own calculations considering information of Zephyr and Bloomberg databases.

The preferred payment method is all cash. Public targets have a significant representation in the sample. Over the last decades M&A transactions in Portugal mainly included listed target companies. One can observe that hostile bids are not a common bidder's attitude; this sub-sample will not be considered. It is also interesting to analyse differences between acquiring companies without any participation before the deal and the companies that already held a stake in the target.

Following Morck et al. (1990), the companies were defined as belonging to related industries when target and acquirer had the same four-digit SIC code among the top three industries they operate in. The deal was classified as diversified acquisition in all other cases. With this criterion it is possible to better distinguish differences between the firms' field of expertise (Morck et al., 1990). There are not many diversification deals as the majority of acquirers prefer a target inside the same industry (Table 1 and 2).

Table 2 – Number of acquirers and targets by sector

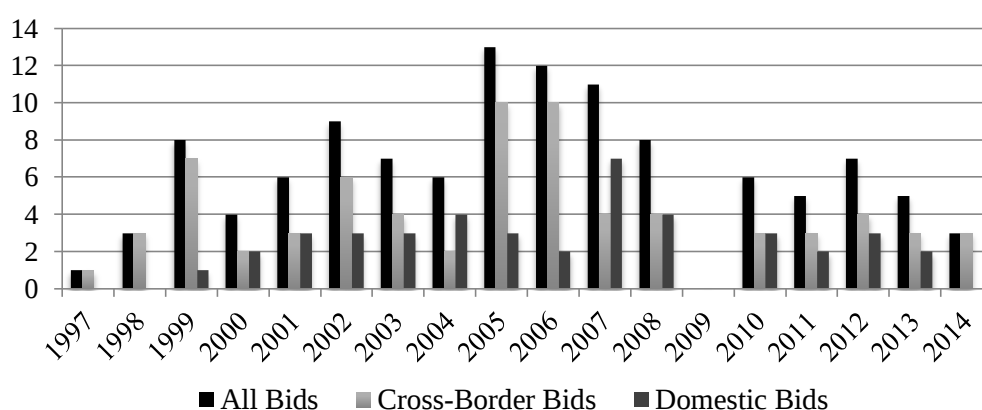
Major Sector	No. of acquirers	No. of targets
Chemical, rubber, plastics	14	14
Construction	8	1
Food, beverages, tobacco	5	5
Gas, Water, Electricity	9	12
Hotels and restaurants	3	3
Machinery, equipment, furniture	9	5
Metals and metal products	4	7
Other services	34	38
Post and telecommunications	1	1
Primary sector	0	1
Publishing, printing	7	3
Textiles, wearing apparel, leather	1	1
Transport	1	4
Wholesale and retail trade	10	10
Wood, cork, paper	8	9

Source: Zephyr database.

In general targets are small in relation to the bidder, but due to the size of the sub-sample we will not consider the target size. As Conn et al. (2005), the cultural differences between foreign acquirers and the Portuguese targets were analysed through a composite index. This index is based on the Hofstede's (1991) classification of four national cultural dimensions: power distance (appendix 10 – A), uncertainty avoidance (appendix 10 – B), individuality (appendix 10 – C), and masculinity (appendix 10 – D). The composite index considers the sum of the four cultural differences for each cross-border deal. After obtaining a median score of 130, it was attributed a high level of cultural difference to deals with a higher score than 130 and low level to the remaining deals.

As previously emphasized, the reduced dimension of the Portuguese economy demands foreign investment. Since 1997 it has occurred more cross-border mergers and acquisitions than domestic deals. After Portugal was qualified to enter in the Economic and Monetary Union in 1998, the number of bids increased expressively (Figure 1). The years 2005, 2006, and 2007 were undoubtedly significant for the M&A activity in Portugal, largely supported by cross-border bids. Nonetheless, with the financial and economic crisis, the number of bids with Portuguese targets decreased and the difference between cross-border and domestic bids was attenuated.

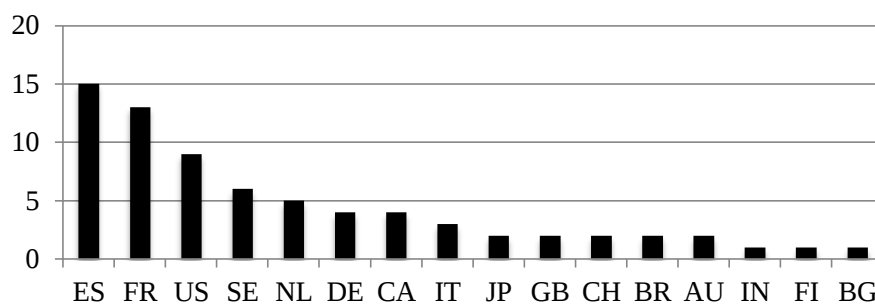
Figure 1 – Number of M&A bids by announcement year



Source: own calculations considering information of Zephyr database.

The main origin of foreign acquirers is Spain and France, due to the geographic proximity and strong economic relations (Figure 2), which is in accordance with the idea that bilateral trade is important in cross-border bids (Rossi and Volpin, 2004). The USA also has a sturdy role in cross-border bids.

Figure 2 – Number of cross-border bids by acquirer country



Source: own calculations. Legend: AU – Australia; BG – Bulgaria; BR – Brazil; CA – Canada; CH – Switzerland; DE – Germany; ES – Spain; FI – Finland; FR – France; GB – United Kingdom; IT – Italy; JP – Japan; NL – Netherlands; SE – Sweden; US – United States of America.

4 – RESULTS

4.1 – Cumulative Average Abnormal Returns

After applying the methodology to our sample, considering 6 event windows, 3 models and 2 benchmark indexes, it is possible to present the abnormal returns for acquirers of Portuguese targets.

The results of the MM are insignificant for the two market indexes and over all event windows as shown in Table 3. Therefore it is not possible to reject H_0 and to affirm that M&A occurred since 1997 created or destroyed value to acquiring shareholders. Our findings using the MM are in agreement with Leeth and Borg (2000).

In general the MAM also presents an insignificant abnormal performance. Our conclusion is similar to Jarrell and Poulsen (1989). The CMRM is not commonly used in the M&A literature. Nevertheless, it presents similar results to the MM and MAM. The evidence of insignificant returns in our study is also reported by authors that have used different models: Morck et al. (1990), Higson and Elliott (1998), and Campa and Hernando (2004).

Table 3 – CAARs of all bids

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-0.08	+0.40	+0.02	+0.49	-0.48	-0.20
% Positive CAAR	50.00	62.28	53.51	63.16	54.39	50.88
Parametric test	-0.03	+0.07	0.00	+0.11	-0.07	-0.02
Signed-rank test	+0.43	+0.91	+0.24	+0.69	+0.74	+0.81
N = 114						
MSCI Europe						
CAAR (%)	-0.06	0.00	+0.05	+0.11	-0.65	-0.61
% Positive CAAR	53.70	56.48	53.70	62.96	51.85	47.22
Parametric test	-0.02	0.00	+0.01	+0.02	-0.09	-0.07
Signed-rank test	+0.50	+0.27	+0.63	+0.46	+0.46	+1.10
N = 108						

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MAM						
MSCI World						
CAAR (%)	+0.01	+0.46	+0.21	+0.66	-0.07	+0.37
% Positive CAAR	54.39	59.65	55.26	58.77	51.75	54.39
Parametric test	0.00	+0.08	+0.05	+0.14	-0.01	+0.05
Signed-rank test	+0.66	+0.87	+0.82	+0.97	+0.18	+0.07
N = 114						
MSCI Europe						
CAAR (%)	+0.03	+0.07	+0.27	+0.30	-0.38	-0.09
% Positive CAAR	52.78	55.56	59.26	57.41	54.63	51.85
Parametric test	+0.01	+0.02	+0.06	+0.06	-0.06	-0.01
Signed-rank test	+0.80	+0.22	+1.28	+0.75	+0.22	+0.15
N = 108						
CMRM						
CAAR (%)	-0.13	+0.15	+0.05	+0.33	-0.37	-0.26
% Positive CAAR	47.37	57.02	54.39	60.53	56.14	49.12
Parametric test	-0.04	+0.03	+0.01	+0.07	-0.05	-0.03
Signed-rank test	+0.10	+0.45	+0.06	+0.39	+0.49	+0.89
N = 114						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

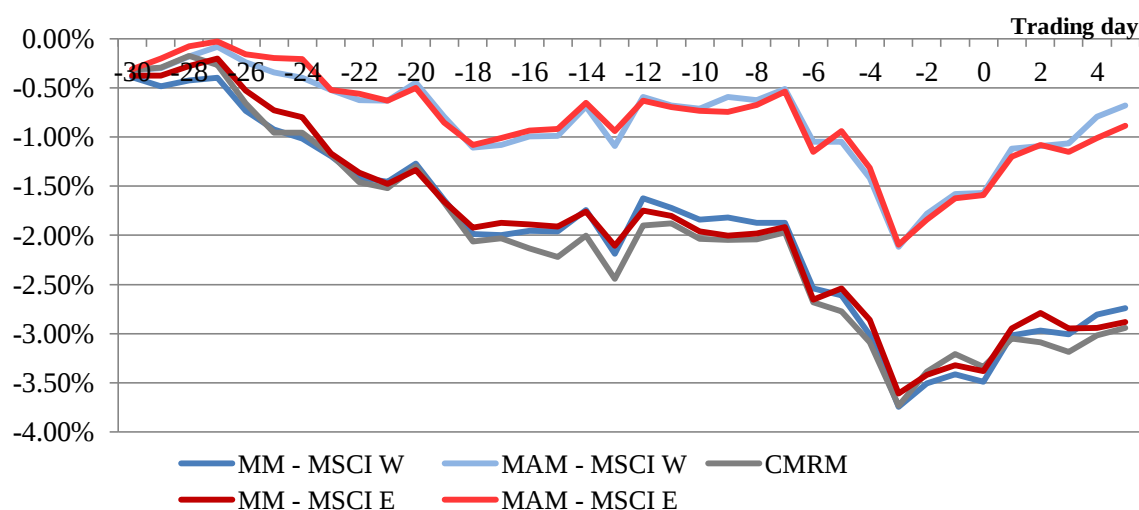
Comparing outcomes of the three models (appendix 11) one can verify that they produce identical conclusions in terms of abnormal performance of acquirers. Although there is not a relevant difference, the results follow a different pattern if we use MSCI World Index to measure CAARs in comparison with MSCI Europe Index (appendix 12). The benchmark MSCI World produces findings further away from zero.

The Figure 3 is a representation of pre-acquisition returns evolution since 30 days before the announcement to 5 days after. The acquiring firms are underperforming the market before day 0 and this divergence is more pronounced during the “day -8” to the “day -3”. This decrease in CAARs may be a consequence of announcement rumours inside the market and hence investors anticipate a negative impact in the company value (taking into consideration that on average and generally speaking acquirers make bad acquisitions). However, after this period the cumulative returns start to recover and

become more similar to the market performance. Probably, near the announcement day and afterwards the market changes its interpretation as more information is disclosed (the price, the payment method, etc) and it is easier to judge if it is a good acquisition or not and the results suggest that the investors end up seeing the deal as neutral (neither value created nor value destroyed). In the Figure 3 one can see that investors' expectations improve after "day -2".

Hereafter we will name similar patterns to Figure 3, before trading day 0, (i.e., noteworthy decline in accumulated abnormal returns some days before the official announcement eventually due to rumours; and a relevant increase in abnormal returns as information is released) as "*Information effect*".

**Figure 3 – CAARs considering the performance, before and after the announcement
(trading day 0)**



Source: own calculations.

4.2 – Sub-sample results

Trying to find a justification for the zero abnormal performance obtained in the previous section, we have measured the CAARs of some sub-samples with the support of the M&A literature. Only the results of Market-adjusted model with the MSCI World Index are presented in this section (the results of other models can be found in the appendix).

4.2.1 – Cross-border and domestic bids

The abnormal returns of foreign and domestic acquirers are not significantly different from zero and the median of the two groups are equal as presented in Table 4¹⁵. Our results for the major cross-border bids are in accordance with Doukas and Travlos (1988) that report insignificant findings using the MM.

Table 4 – CAARs for cross-border and domestic bids

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
Cross-border bids						
CAAR (%)	-0.10	+0.64	+0.12	+0.86	-0.32	-0.44
% Positive CAAR	55.56	63.89	55.56	61.11	52.78	50.00
Parametric test	-0.03	+0.10	+0.02	+0.16	-0.05	-0.06
Signed-rank test	+0.65	+1.24	+0.60	+1.11	+0.46	+0.15
N = 72						
Domestic bids						
CAAR (%)	+0.18	+0.15	+0.36	+0.33	+0.35	+1.75
% Positive CAAR	52.38	52.38	54.76	54.76	50.00	61.90
Parametric test	+0.08	+0.05	+0.15	+0.11	+0.07	+0.27
Signed-rank test	+0.16	+0.30	+0.46	+0.04	+0.37	+0.32
Rank-sum test	+0.28	+1.03	+0.02	+0.66	+0.48	+0.48
N = 42						

Source: own calculations. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of Portuguese acquirers sample with foreign acquirers sample.

Although insignificant, the positive effect on foreign acquirers' returns obtained in the windows [0,+1]; [-1,0]; [-1,+1] is supported by Goergen and Renneboog (2004), Faccio et al. (2006), and Martynova et al. (2011). On the other hand, the CAARs in the announcement day, windows [-5,+1] and [-5,+5] are negative and insignificant in cross-

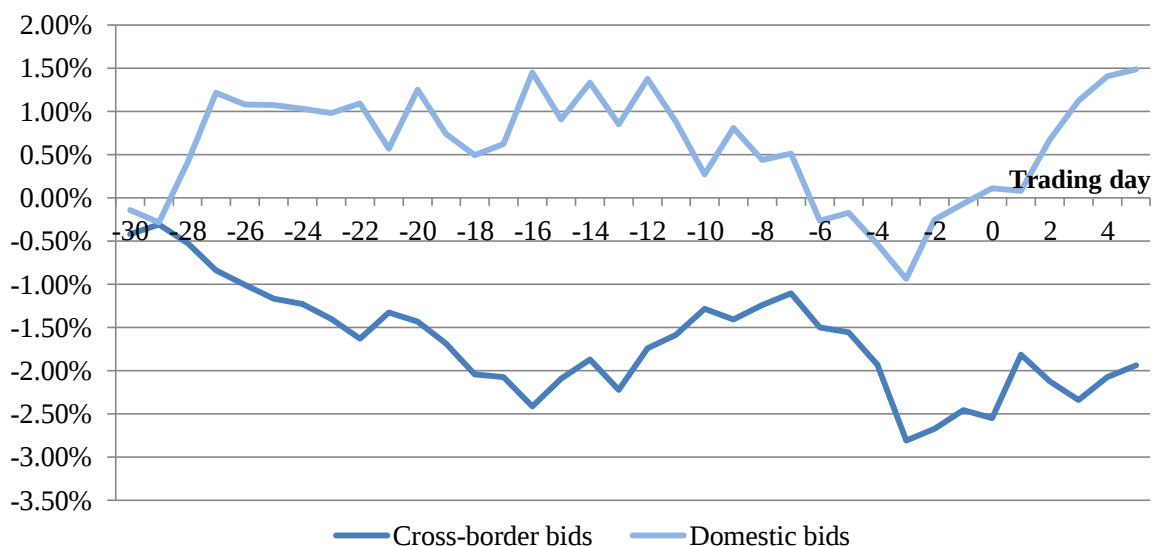
¹⁵ Insignificant results in the parametric test were also found in the MAM and CMRM (appendix 13).

border deals, and the negative sign is in agreement with Moeller and Schlingemann (2005)¹⁶.

Contrary to the results for cross-border deals the abnormal returns for domestic bidders are always positive in Table 4, however also insignificant¹⁷. The non-parametric tests have not changed the interpretation that the findings for domestic bids are not robust. The positive sign in abnormal performance of domestic bids is also found in Martynova et al. (2011).

The Portuguese acquirers perform a slightly better than the market before the announcement deal, whereas foreign acquirers have a negative performance (Figure 4). The announcement day and the period surrounding affect bidders' performances which suggest that an *Information effect* occurs. After the announcement, domestic acquiring companies continue to perform above the market and the foreign acquirers perform below.

Figure 4 – CAARs considering the performance of cross-border and domestic bids, before and after the announcement (trading day 0)



Source: own calculations.

¹⁶ Similar findings are reported considering other models. Indeed, the median of foreign acquirers sample considered in the CMRM and window [-5, +5] is negative with a significance level of 10% (appendix 13 - A).

¹⁷ Other methodologies also present mostly positive and insignificant returns for domestic bids (appendix 13 - B).

4.2.2 – All cash, all stock and mixed payment

In order to analyse the impact of the payment method we have considered all stock and mixed payment together as a sub-sample because there are few cases for each payment method (Table 1).

Considering all cash sub-sample in Table 5, the CAARs are always positive and insignificant for the parametric tests. The M&A literature examined also reports a positive and insignificant effect (Travlos, 1987; Franks et al., 1991; and Leeth and Borg, 2000). Our conclusion is also consistent with Servaes (1991), Goergen and Renneboog (2004), Moeller et al. (2004), and Martynova et al. (2011), although their results are significant.

Table 5 – CAARs for different payment methods

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
All cash						
CAAR (%)	+0.47	+0.27	+0.73	+0.53	+0.50	+1.96
% Positive CAAR	74.19	67.74	64.52	54.84	54.84	64.52
Parametric test	+0.12	+0.05	+0.16	+0.10	+0.09	+0.27
Signed-rank test	+2.62*	+1.66***	+2.72*	+1.97**	+1.50	+2.13**
N = 31						
All stock and mixed						
CAAR (%)	-1.56	+0.62	-0.65	+1.53	-1.60	-1.30
% Positive CAAR	33.33	50.00	38.89	50.00	55.56	44.44
Parametric test	-0.46	+0.06	-0.07	+0.22	-0.15	-0.10
Signed-rank test	+1.96**	+0.62	+1.77***	+0.91	+0.60	+0.53
Rank-sum test	+2.89*	+1.43	+2.99*	+1.82***	+0.75	+1.48
N = 18						

Source: own calculations. The benchmark MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of all cash sample with other payments sample.

Nonetheless, the hypothesis of median equal to zero in all cash deals is rejected in all windows except for window $[-5, +1]$ ¹⁸ (Table 5). We can affirm that the sample of all cash transactions have a positive median at a significance level of 1% in the announcement day and the window $[-1, 0]$.

Contrarily to all cash offers, the negative and insignificant results for all stock and mixed payment deals in Table 5 are in accordance with Leeth and Borg (2000). Travlos (1987), Franks et al. (1991), Servaes (1991), and Andrade et al. (2001) also present negative, but relevant, findings for domestic deals.

The median of all stock and mixed payment sample is different from zero in the announcement day and the window $[-1, 0]$ ¹⁹ at a significance level of 5% and 10% respectively. The rank-sum test is significant over three windows, all cash deals have a different abnormal performance than other payments²⁰.

The non-parametric results described in this section are robust and the figures show that when we exclude the outliers of the sample, there is evidence that acquiring shareholders gain with all cash offers and lose with stock and mixed payments. As a consequence, the unusual deals of the sub-samples led to insignificant parametric tests.

Analysing the cumulative abnormal returns of all cash deals in Figure 5, one can say that there is not a strong *Information effect*. However acquirers recover after “day - 3” until reaching the market performance in “day 5”.

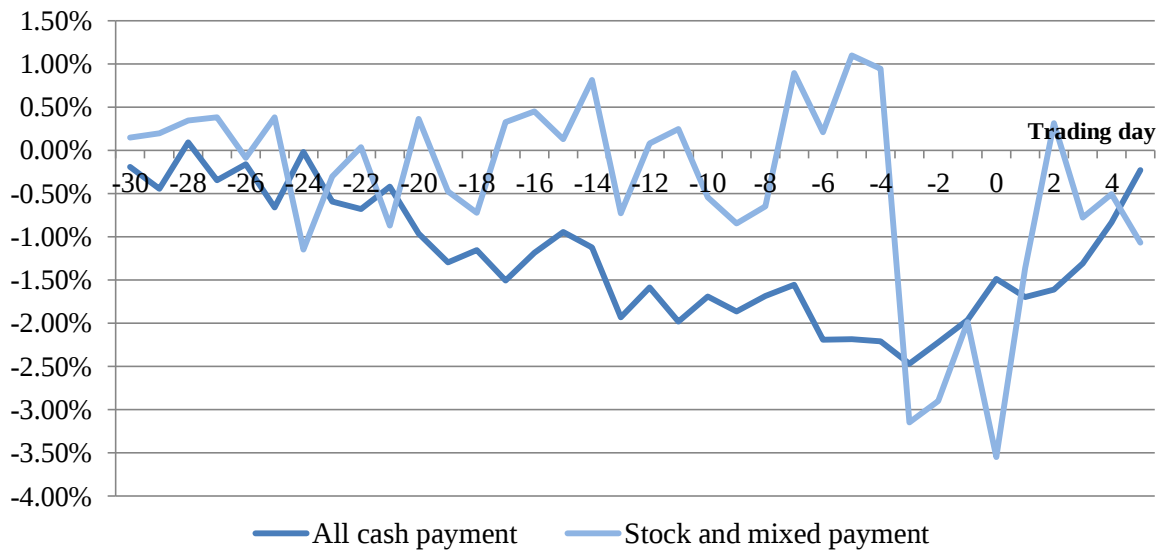
On the other hand, in Figure 5, stock and mixed payment present a similar performance in comparison to the market before the announcement period. Between “day -4” and “day 1” it is possible to observe the *Information effect*. The decrease in accumulated returns is very strong because there is an outlier acquirer that suffered a strong negative devaluation of its shares between “day -4” and “day -3”. After, there is also an accentuated increase due to the returns of an outlier company. The chart is very sensible to outliers because it is a small sub-sample.

¹⁸ Similar conclusion was found in the other models (appendix 14 - A).

¹⁹ We emphasize the huge negative CAARs in the window $[-5, +5]$ for the MM and the MSCI Europe, where the median is different from zero at a significance level of 10% (appendix 14 - B).

²⁰ The rank-sum test has significant results in all event windows of the MAM for MSCI Europe (appendix 14 - B).

Figure 5 – CAARs considering the performance of bids with different type of payment, before and after the announcement (trading day 0)



Source: own calculations.

4.2.3 – Private and public targets

The abnormal performance of companies that acquire public and private targets is presented in Table 6.

Disagreeing with the literature (Chang, 1998; Moeller et al., 2004; Faccio et al., 2006, and Martynova et al., 2011), we have not found abnormal returns significantly different from zero for private and public target. Our study is not also in accordance with the conclusion of Oliveira (2004): acquirers have more abnormal returns with public Portuguese targets than when the target is private. Moreover, the non-parametric tests reinforce the idea that there is not a listing effect²¹.

The Figure 6 shows that deals with private targets lead to negative accumulated returns for acquiring shareholders. There is a sharp decline of CAARs in “day -4” due to the huge negative performance of an outlier bidder. In fact, the private target sub-sample is small. The Figure 6 presents a similar performance between the market and bidders of public Portuguese targets, the *Information effect* is very small for acquirers of public firms.

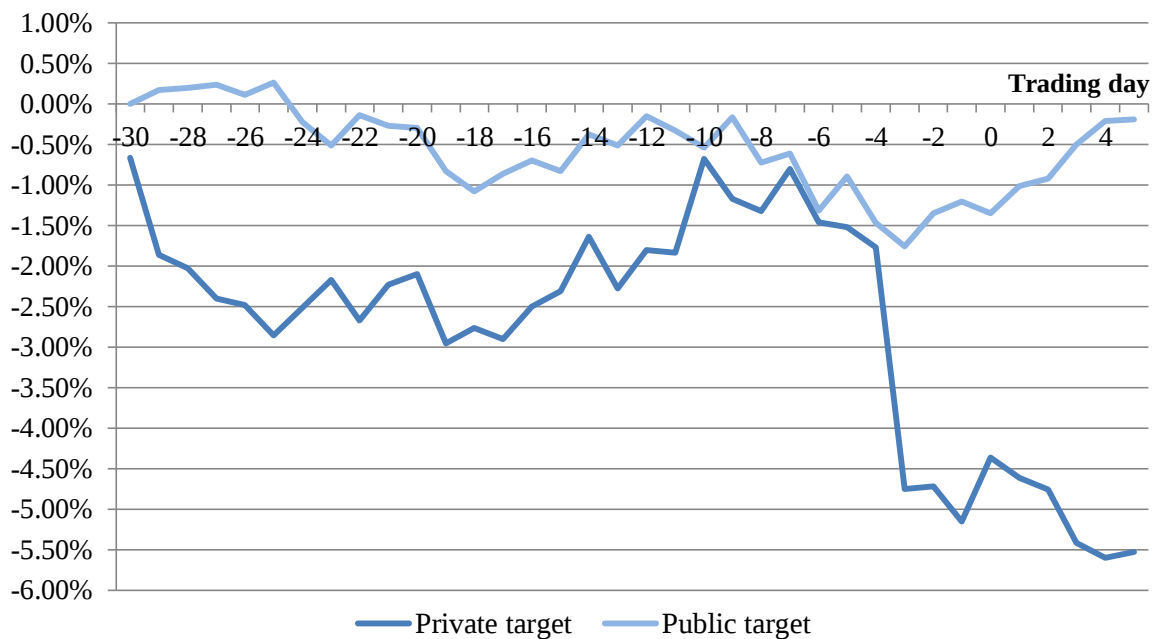
²¹ This conclusion is coherent over the different methodologies (appendix 15).

Table 6 – CAARs for target legal status

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
Private targets						
CAAR (%)	+0.79	+0.54	+0.35	+0.10	+0.56	-0.36
% Positive CAAR	72.22	61.11	72.22	55.56	61.11	44.44
Parametric test	+0.36	+0.23	+0.10	+0.04	+0.20	-0.07
Signed-rank test	+1.61	+0.70	+0.90	+0.33	+0.59	+0.60
N = 18						
Public targets						
CAAR (%)	-0.14	+0.19	0.00	+0.33	+0.31	+1.13
% Positive CAAR	50.91	25.45	20.00	25.45	23.64	21.82
Parametric test	-0.04	+0.04	0.00	+0.07	+0.05	+0.16
Signed-rank test	+0.26	+0.48	+0.44	+0.86	+0.57	+0.58
Rank-sum test	+1.63	+0.40	+0.65	+0.09	+0.23	+0.87
N = 55						

Source: own calculations. The benchmark MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of private and public targets samples.

Figure 6 – CAARs considering the performance of bids with private and public targets, before and after the announcement (trading day 0)



Source: own calculations.

4.2.4 – Acquirers with and without initial stake

We divided the acquiring firms that already had an initial stake in the target and the firms that did not had with the aim of analysing if previous ownership influences acquirers' gains.

The sign of abnormal returns is positive for acquirers with 0% initial stake or more (Table 7) in the majority of the event windows. The performance is negative in the window [-5, +1] for both sub-samples but these are not significant results.

The acquirers with no previous relation before the deal have a negative and insignificant abnormal return at the announcement day, while bidders with initial stake have positive and significant gains according to the non-parametric test at a significance level of 5% (Table 7)²². Also at the announcement day, the median of the sub-samples are different at a significance level of 10%²³.

Table 7 – CAARs for % of initial stake

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
0% initial stake						
CAAR (%)	-0.14	+0.49	+0.16	+0.79	-0.08	+0.14
% Positive CAAR	47.62	59.52	51.19	58.33	53.57	51.19
Parametric test	-0.04	+0.08	+0.03	+0.16	-0.01	+0.02
Signed-rank test	+0.30	+0.54	+0.25	+0.83	+0.07	+0.45
N = 84						
Initial stake > 0%						
CAAR (%)	+0.57	+0.37	+0.33	+0.13	-0.10	+0.98
% Positive CAAR	81.82	59.09	63.64	54.55	45.45	68.18
Parametric test	+0.31	+0.13	+0.15	+0.04	-0.02	+0.17
Signed-rank test	+2.11**	+0.55	+1.44	+0.31	+0.69	+0.42
Rank-sum test	+1.75***	+0.14	+0.98	+0.19	+0.03	+0.60
N = 22						

Source: own calculations. The benchmark MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of acquirers with and without initial stake.

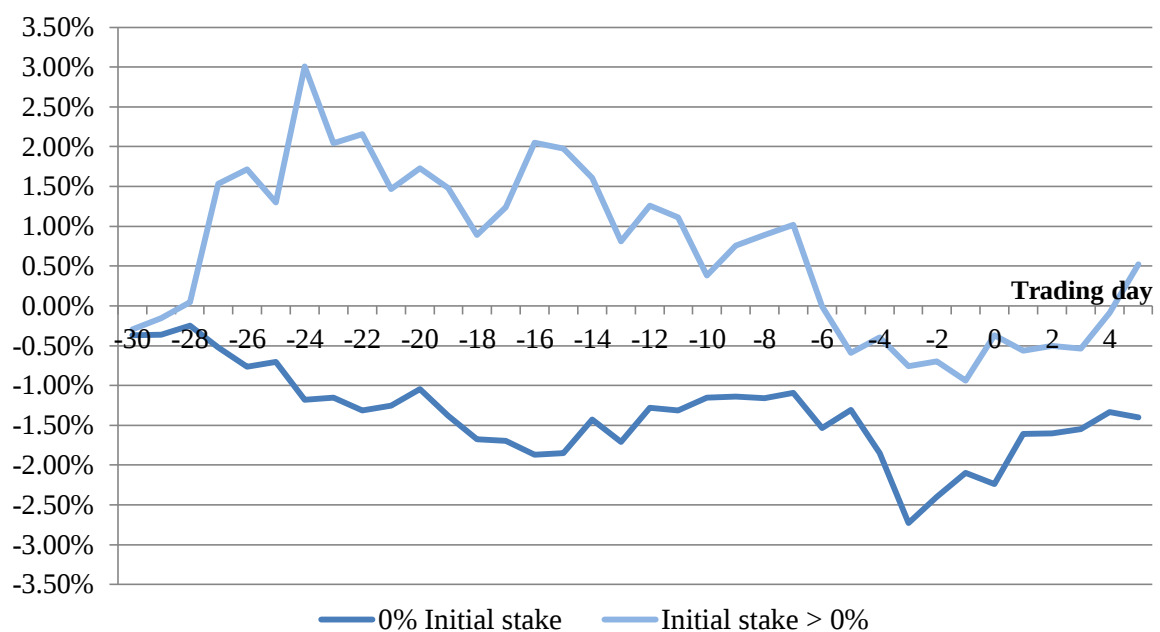
²² A result also found in the MM, MSCI World, with a significance level of 10% (appendix 16 – B).

²³ The same result is reported in the MM, MSCI World (appendix 16 – B).

We can conclude that, excluding outliers, acquiring firms with some ownership of the Portuguese target have a positive abnormal performance when announcing the deal. And the behaviour of their returns is different from the returns of acquirers without an initial stake. This reaction may be a consequence of less risk involved in the investors' perspective when the acquirer already has a relation with the target announced, which implies more knowledge and an easier negotiation.

Analysing Figure 7 one can see that acquirers with previous ownership have a better performance than the market, which is accordance with the conclusion that they may benefit from a more stable negotiation. In accordance, the *Information effect* is more expressive for acquirers with 0% initial stake.

Figure 7 – CAARs considering the performance of acquirers with and without initial stake, before and after the announcement (trading day 0)



Source: own calculations.

4.2.5 – Industry relatedness between acquirer and target

The Table 8 presents the abnormal performance considering diversified and focused acquisitions. The consideration of sub-samples with the criteria of industry relatedness does not explain acquiring shareholders gains. In fact, the parametric and non-

parametric tests are insignificant for all event windows²⁴. Our conclusion is in accordance with Morck et al. (1990), Leeth and Borg (2000), and Doukas et al. (2001), author that used MM, MAM and a model with ratios respectively.

Following Morck et al. (1990), we have considered four-SIC codes to analyse the sub-samples. Nonetheless, using two-SIC codes as Leeth and Borg (2000) and Martynova et al. (2011) the results do not change significantly.

Table 8 – CAARs for industry relatedness

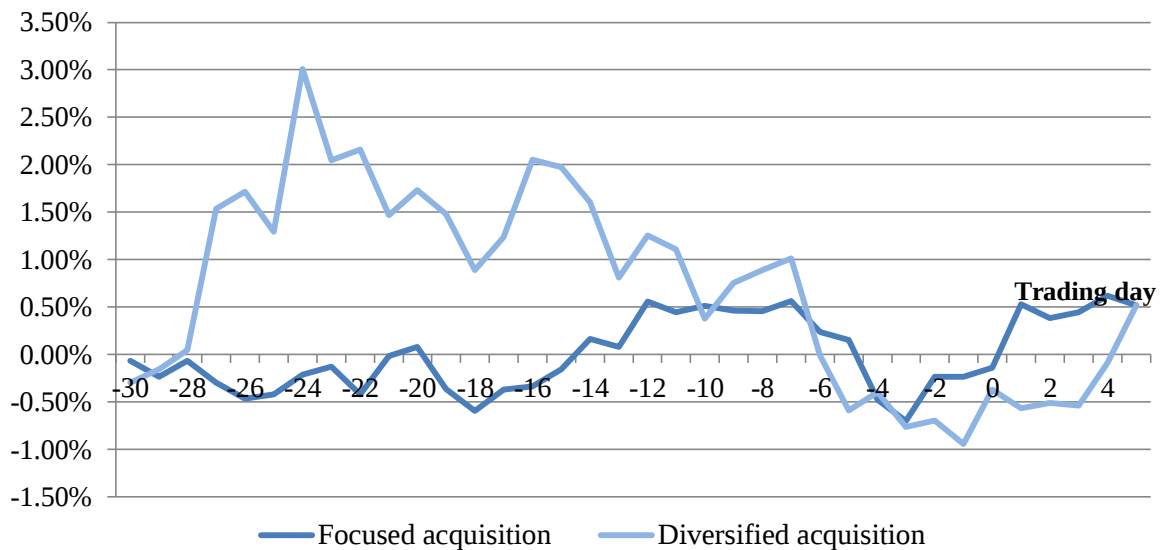
	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
Focused						
CAAR (%)	+0.10	+0.77	+0.09	+0.76	+0.49	+0.48
% Positive CAAR	57.63	57.63	61.02	57.63	52.54	52.54
Parametric test	+0.03	+0.12	+0.02	+0.15	+0.10	+0.08
Signed-rank test	+0.76	+0.42	+0.86	+0.56	+0.22	+0.41
N = 59						
Diversified						
CAAR (%)	-0.09	+0.13	+0.34	+0.56	-0.68	+0.25
% Positive CAAR	50.91	61.82	49.09	60.00	50.91	56.36
Parametric test	-0.03	+0.03	+0.07	+0.13	-0.10	+0.03
Signed-rank test	+0.10	+0.81	+0.29	+0.80	+0.03	+0.52
Rank-sum test	+0.50	+0.22	+0.28	+0.23	+0.09	+0.64
N = 55						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of acquirers that made diversified and focused acquisitions.

The accumulated abnormal performance of acquirers in diversified acquisitions is better than the market performance, whereas the acquirers of focused acquisitions have a similar pattern comparing with market (Figure 8). The *Information effect* has a similar behaviour and intensity in both sub-samples, and therefore it is not possible to affirm that acquirers in different types of M&A deals have different gains when we consider the industry relatedness.

²⁴ This conclusion is coherent for other models (appendix 17).

Figure 8 – CAARs considering the industry relatedness, before and after the announcement (trading day 0)



Source: own calculations.

4.2.6 – Cultural differences

With the aim of better understanding the results obtained for cross-border bids in section 4.2.1, we separated transactions where there was a high cultural difference between the foreign acquirer and the Portuguese target, and others transactions with low cultural difference.

Contrary to the idea of Teerikangas and Very (2006), culture is not a relevant context to the success of M&A bids realized with Portuguese targets. In fact, Table 9 shows that sub-samples with high and low cultural difference have mixed and insignificant abnormal returns in the different event windows²⁵. The cultural barriers do not impact the acquiring foreign shareholders' returns.

The signed-rank test in the window $[0, +1]$ is positive and significant at a 10% level (Table 9), which is in accordance with the affirmation of Conn et al. (2005) that there is a negative relation between cross-border acquisition and the national cultural distance.

Following Weber and Menipaz, (2003), it is expected that investors anticipate the impact of culture in M&A deals. For higher cultural differences, acquirers have to support more integration costs. In fact, the Figure 9 presents a similar performance

²⁵ The same conclusion was found for other models (appendix 18).

between acquisitions with low cultural difference and the market, whereas bids with high cultural differences have a negative performance.

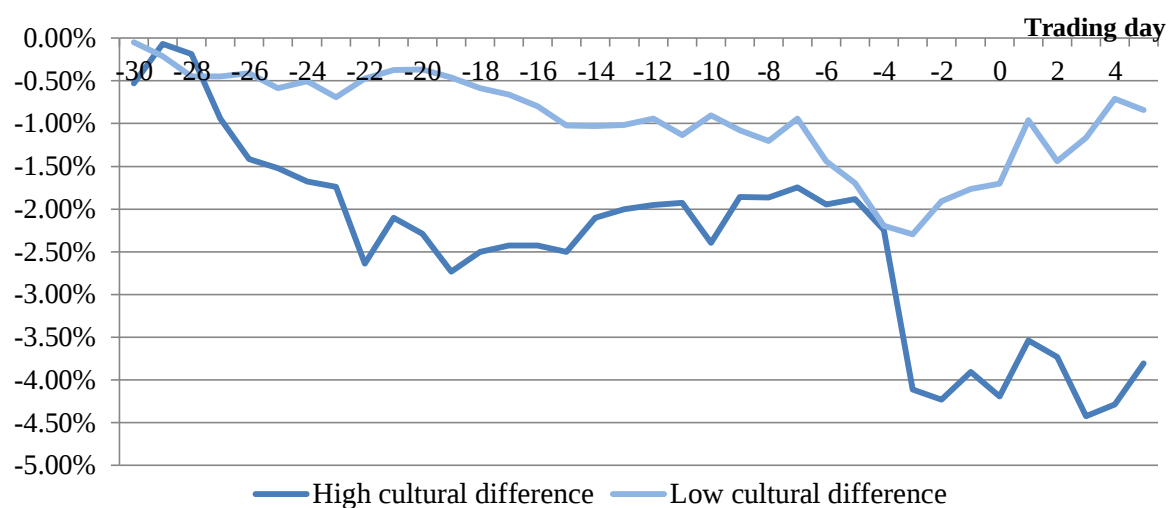
Both sub-samples are affected by the *Information effect*, although it is less accentuated for low cultural differences. Moreover, the sub-samples present accumulated returns that become more and more negative as we approximate to the announcement day, which means that investors anticipated a negative impact as information were released.

Table 9 – CAARs for cultural differences in cross-border bids

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
High difference						
CAAR (%)	-0.28	+0.37	+0.04	+0.69	-1.59	-1.86
% Positive CAAR	52.94	52.94	58.82	55.88	52.94	41.18
Parametric test	-0.06	+0.04	0.00	+0.09	-0.19	-0.20
Signed-rank test	+0.58	+0.04	+0.46	+0.06	+0.34	+1.33
N = 34						
Low difference						
CAAR (%)	+0.07	+0.81	+0.21	+0.95	+0.74	+0.85
% Positive CAAR	56.76	72.97	54.05	64.86	51.35	56.76
Parametric test	+0.05	+0.38	+0.09	+0.37	+0.24	+0.17
Signed-rank test	+0.26	+1.72***	+0.30	+1.51	+0.99	+0.48
Rank-sum test	+0.67	+0.90	+0.50	+0.68	+0.51	+0.81
N = 37						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of acquirers that have low and high cultural differences with the Portuguese targets.

**Figure 9 – CAARs considering cultural differences, before and after the announcement
(trading day 0)**



Source: own calculations.

5 – CONCLUSIONS

Contributing to the M&A literature, this research is a study focused on the Portuguese market. The main objective is to analyse if M&A realized with Portuguese targets create value to acquiring firms. Furthermore, it is also questioned which factors most affect the success of these transactions.

To explore value creation in the context explained above, we conduct an event study. It is an important methodology in the M&A literature, and particularly in short-term analyses. For this purpose, we analyse the abnormal returns of acquiring shareholders, the residual owners of the firm. This method is applied to a sample of 114 M&A deals involving Portuguese targets, since 1997 to 2014.

We can conclude that there is not value creation or destruction of acquiring shareholders' wealth when the target is Portuguese. This conclusion is robust in the three models and two market indexes. Indeed, a close to zero abnormal performance for acquirers is supported by different authors: Jarrell and Poulsen (1989), MAM; Leeth and Borg (2000), MM; Morck at al. (1990), ratio between bidder and target; Higson and Elliott (1998), Size decile benchmark; Campa and Hernando (2004), CAPM.

The findings obtained for foreign acquirers diverge between the event windows. The negative effect, even though mainly insignificant, on foreign acquirers' gains in the larger windows may represent an unfavourable aspect for foreign investors. In general, we cannot conclude that domestic and cross-border deals have relevant and different performances in Portugal. The cultural differences between acquirers and targets do not explain the success of cross-border bids.

The factor payment method has not a significant impact on bidders' gains in parametric tests, but the non-parametric tests indicate a positive effect of all cash deals on acquiring firms which is in agreement with the M&A literature. The target legal status and the industry relatedness are factors that do not influence acquirers' abnormal performance. In terms of the target legal status this conclusion is contrary to what we expected in the literature review, while it is accordance with empirical evidence regarding the industry relatedness. The initial stake results tend to anticipate that acquirers with a previous relation with the target will gain with the M&A deal.

Comparing with similar studies for the Portuguese market, the insignificant findings are in agreement with Oliveira (2004) and Carvalho (2012). Oliveira (2004)

analysed a broad range of M&A deals as he has considered all the operations registered in the Zephyr database with Portuguese targets between 1997 and 2004. As we have obtained a similar conclusion, it is possible to affirm that the “pure” M&A operations in Portugal do not create value. Noticeably, the conclusions of our study should be taken in consideration with great caution as it was considered a small sample in terms of volume and value.

Future researches may restrict the criteria of Oliveira (2004) in order to figure out if there is value creation for companies acquiring Portuguese targets in other particular types of M&A not considered in this study, neither by Carvalho (2012). Furthermore, it would also be interesting to compare the results obtained with an analysis to M&A deals realized in the financial sector.

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APPENDICES

Appendix 1 – Resume of empirical evidence regarding value creation for acquiring companies over M&A waves

WAVES: 2nd wave (1910s-1929) and 3rd wave (1950s-1973); 4th wave (1981-1989); 5th wave (1993-2001).

TYPE OF DEAL: A – Acquisitions; M – Mergers; M&A – Mergers and Acquisitions; M&A - Priv – M&A of Private targets; M&A - Pub – M&A of Public targets; TO – Tender Offers.

TYPE OF STUDY: LT FP – Long-term Financial Performance; OP – Operating Performance; ST FP – Short-term Financial Performance.

CONCLUSION: AP – Announcement Period; Pre-AP – Pre-Announcement Period; Post-AP – Post-Announcement Period.

	Authors	Period	Type of Deal	N° Deals	Type of Study	Conclusion
Waves Comparison	Jensen et al. (1983), US	1956-1981	TO M	-	ST FP	Positive abnormal performance Zero abnormal performance
	Jarrell and Poulsen (1989), US	1963-1986	TO	450	ST FP	Close to zero abnormal performance
	Andrade et al. (2001), US	1973-1998	M	3,688	ST FP	Negative abnormal performance
2nd and 3rd wave	Leeth and Borg (2000), US	1919-1930	M&A	466	ST FP	Close to zero abnormal performance
	Lev & Mandelker (1972), US	1952-1963	M&A	69	OP	Profitability: positive performance Other measures: Insignificant changes in performance
	Hogarty (1970), US	1953-1964	M&A	43	OP	Negative performance (Post-AP)
	Frank and Harris (1989), UK	1955-1985	TO M	1,012 46	ST FP LT FP	Positive abnormal performance Negative abnormal performance Inconclusive
4th wave	Agrawal et al. (1992), US	1955-1987	TO M	227 937	LT FP	Close to zero abnormal performance Negative abnormal performance
	Servaes (1991), US	1972-1987	All deals	384	ST FP	Negative abnormal performance
	Franks et al. (1991), US	1975-1984	M&A	399	ST FP LT FP	Small negative abnormal performance Close to zero abnormal performance
	Morck et al. (1990), US	1975-1987	M&A	326	ST FP	Close to zero abnormal performance

4 th wave	Higson and Elliott (1998), UK	1975-1990	All deals	830	ST FP LT FP	Insignificant abnormal performance Insignificant abnormal performance
	Healy et al. (1992), US	1979-1984	Largest deals	50	OP	Operating cash flow performance improves
	Sharma & Ho (2002), Australia	1986-1991	All deals	36	OP	Insignificant changes in performance (Post-AP)
5 th wave	Moeller et al. (2004), US	1980-2001	M&A	12,023	ST FP LT FP	Positive abnormal performance Close to zero abnormal performance
	Gugler et al. (2003), World	1981-1998	All deals	2,753	OP	Profits are higher and sales are lower than projected (Post-AP)
	Goergen and Renneboog (2004), Europe	1993-2000	M&A	142	ST FP	Positive (AP); Negative (Post-AP) abnormal performance
	Martynova et al. (2011), Europe	1993-2001	M&A	2,419	ST FP	Positive (AP); Negative (Post-AP) abnormal performance
	Faccio et al. (2006), Europe	1996-2001	M&A - Priv M&A - Pub	3,694 735	ST FP	Positive abnormal performance Insignificant abnormal performance
	Martynova et al. (2007), Europe	1997-2001	M&A	115	OP	Insignificant changes in performance (Post-AP)
	Campa and Hernando (2004), EU	1998-2000	M&A	262	ST FP	Insignificant abnormal performance

Appendix 2 - Resume of empirical evidence regarding value creation for acquiring companies in cross-border and domestic M&A

TYPE OF DEAL: CBB – Cross-border bid; DB – Domestic bid; M&A – Mergers and Acquisitions; M&A - Priv – M&A of Private targets; M&A - Pub – M&A of Public targets.

TYPE OF STUDY: LT FP – Long-term Financial Performance; OP – Operating Performance; ST FP – Short-term Financial Performance.

CONCLUSION: AP – Announcement Period; Post-AP – Post-Announcement Period.

Authors	Period	Type of Deal	N° Deals CBB/DB	Type of Study	Conclusion CBB/DB
Doukas and Travlos (1988), US	1975-1983	M&A	301	ST FP	Insignificant abnormal performance
Gugler et al. (2003), World	1981-1998	All deals	429/2,288	OP	Profits: positive/positive Sales: negative/negative
Moeller and Schlingemann (2005), US	1985-1995	M&A	383/4,046	ST FP OP	Negative cross-border effect
Francis et al. (2008), US	1990-1995	M&A	353/2,244	ST FP	Negative cross-border effect
	1996-2003		1,138/5,368		Positive cross-border effect
Goergen and Renneboog (2004), Europe	1993-2000	M&A	All countries: 56/86 Southern Europe: 4/8	ST FP	Positive/Negative
Martynova et al. (2011), Europe	1993-2001	M&A	653/1,456	ST FP	CBB and DB: Positive (AP), Negative (Post-AP)
Faccio et al. (2006), Europe	1996-2001	M&A - Priv	1,848/1,846	ST FP	Positive/Positive
		M&A - Pub	366/369		Positive/Negative
Martynova, et al. (2006), Europe	1997-2001	M&A	37/73	OP	Negative/Positive
Campa and Hernando (2004), EU	1998-2000	M&A	80/182	ST FP	Larger return for DB

Appendix 3 – Summary of event studies: empirical evidence of abnormal returns for acquiring companies considering type of payment

Authors	Period	Type of Payment	N° Deals	Event Window (days)	CAARs (%)
Leeth and Borg (2000), US	1919-1930	Cash	41	Between 1 month before announcement and the month of completion	+2.47
		Stock	156		-1.12
Travlos (1987), US	1972-1981	Cash	100	Announcement day	+0.26
		Stock	60		-1.03*
Servaes (1991), US	1972-1987	Cash	172	[0, close]	+3.44*
		Stock	142		-5.86*
		Mixed	66		-3.74*
Andrade et al. (2001), US	1973-1979	Stock	2,194	[-1, +1]	-1.5**
		No stock	1,494		+0.4
Franks et al. (1991), US	1975-1984	Cash	156	[-5, +5]	+0.83
		Stock	128		-3.15*
		Mixed	114		-1.18
Moeller et al. (2004), US	1980-2001	Cash	4,862	[-1, +1]	+1.38*
		Stock	2,958		+0.15*
		Mixed bid	4,203		+1.45*
		Cash - Public	2,060		+1.21*
		Stock - Public	1,553		+1.49*
		Mixed -Public	1,970		+1.80*
		Cash - Private	396		+0.36
		Stock – Private	1,199		-2.02*
		Mixed - Private	1,047		-0.40*
Goergen and Renneboog (2004), Europe	1993-2000	Cash	86	[-2, +2]	+0.90***
		Stock	33		+2.57*
		Mixed	23		+0.22
Martynova et al. (2011), Europe	1993–2001	Cash	754	[-1, +1]	+0.80*
		Stock	285		+0.12
		Mixed	412		+1.17*
Faccio et al. (2006), Europe	1996-2001	Cash - Public	436	[-2, +2]	+0.30
		Stock - Public	189		-1.81**
		Mixed -Public	110		-0.66
		Cash - Private	2,876		+1.17*
		Stock – Private	201		+3.90*
		Mixed - Private	617		+2.14*

Significance level: */**/** - statistical significance at 1%/5%/10%, respectively.

Appendix 4 – Summary of event studies: empirical evidence of abnormal returns for acquiring companies considering different attitudes towards the bid

Authors	Period	Attitude	N° Deals	Event Window (days)	CAARs (%)
Frank and Harris (1989), UK	1955-1985	Single Bids	1,445	Announcement month	+0.0
		Multiple Bids:	1,238		+0.0
		Hostile	123		+0.3
		Friendly	84		-0.4
Servaes (1991), US	1972-1987	Friendly	307	[0, close]	-0.16
		Hostile	77		-4.71
Franks et al. (1991), US	1975-1984	Friendly	306	[-5, +5]	-0.92***
		Hostile	93		-1.35
Goergen and Renneboog (2004), Europe	1993-2000	Friendly	55	[-2, +2]	+1.94*
		Hostile	32		-3.43*
Martynova et al. (2011), Europe	1993–2001	Friendly	1,659	[-1, +1]	+1.06*
		Opposed	120		-0.83

Significance level: */**/** - statistical significance at 1%/5%/10%, respectively.

Appendix 5 – Summary of event studies: empirical evidence of abnormal returns for acquiring companies considering industry relatedness

Authors	Period	Industry	N° Deals	Event Window (days)	CAARs (%)
Leeth and Borg (2000), US	1919-1930	Focused bid	417	One month before takeover to the month of completion	+0.61
		Diversified bid	28		-2.30
Morck at al. (1990), US	1975-1979	Focused bid	34	[-2, +1]	+1.54
	1980-1987		57		+2.88
	1975-1979	Diversified bid	120		+0.23
	1980-1987		115		-4.09**
Doukas et al. (2001), Sweden	1980-1995	Focused bid	45	[-5, +5]	+2.34**
		Diversified bid	47		-1.77
Goergen and Renneboog (2004), Europe	1993-2000	Energy	9	[-2, +2]	-0.83
		Manufacture	63		+2.92*
		Services	28		-2.19**
		Retailer	20		+2.19**
		Bank	22		-0.15
Martynova et al. (2011), Europe	1993–2001	Focused bid	1,334	[-1, +1]	+0.85*
		Diversified bid	774		+0.49**
Campa and Hernando (2004), EU	1998-2000	Non-regulated	202	[-30, -1]	+1.68**
		Regulated	60		-1.81**

Significance level: */**/** - statistical significance at 1%/5%/10%, respectively.

Appendix 6 – Summary of event studies: empirical evidence of abnormal returns for acquiring companies considering relative size

Authors	Period	Relative Size	Nº Deals	Event Window (days)	CAARs (%)
Frank and Harris (1989), UK	1955-1985	Relative size of target to bidder (Market value):			
		All Mergers	844	0 month	+0.1
				[-4,+1] months	+3.5**
		Less than 50%	439	0 month	-0.1
				[-4,+1] months	+2.3
		Between 50% to 100%	124	0 month	+2.1
Asquith et al. (1983), US	1963- Set.1979	Successful Mergers - Relative size of target to bidder:			
		Greater than 10%	33	[-20,0]	+7.1*
		Less than 10%	38		+2.9
	1963- Out.1979	Greater than 10%	38		+3.7***
		Less than 10%	61		+1.6
Martynova et al. (2011), Europe	1993–2001	UK Bidders	624	[-1,+1]	-0.00
				[-60,-2]	-0.04**
		European bidders (except UK)	958	[-1,+1]	-0.09
				[-60,-2]	+0.07

Significance level: */**/** - statistical significance at 1%/5%/10%, respectively.

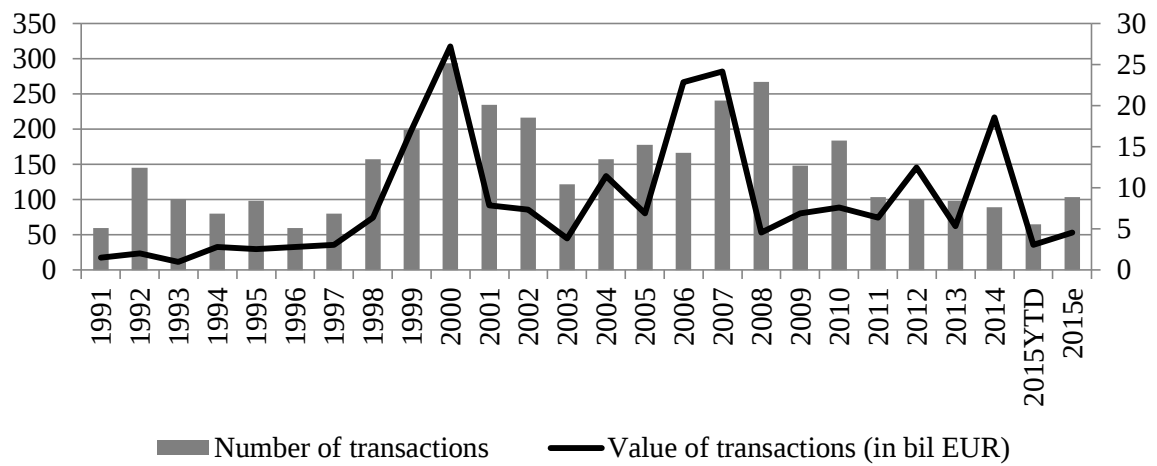
Appendix 7 – Summary of event studies: empirical evidence of abnormal returns for acquiring companies considering target legal status

TYPE OF DEAL: CBB – Cross-border bid; DB – Domestic bid.

Authors	Period	Legal status	N° Deals	Event Window (days)	CAARs (%)
Moeller et al. (2004), US	1980-2001	Private Public	5,583 2,642	[-1, +1]	+1.50* -1.02*
Chang (1998), US	1981-1992	Private Cash offers Stock offers Public Cash offers Stock offers	131 150 101 154	[-1, 0]	+0.09 +2.64* -0.02 -2.46*
Conn et al. (2005), UK	1984-1998	Private DB CBB Public DB CBB	2,628 1,009 576 131	[-1, +1]	+1.05* +0.38** -0.99* -0.09
Martynova et al. (2011), Europe	1993–2001	Private Listed	1,532 576	[-1, +1]	+1.08* -0.25
Faccio et al. (2006), Europe	1996-2001	Private Cash Stock Mixed DB CBB Public DB CBB Mixed Domestic Cross	2,876 201 617 1,846 1,848 436 189 110 369 366	[-2, +2]	+1.17* +3.90* +2.14* +1.62* +1.33* +0.30 -1.81** -0.66 -0.87 +0.11

Significance level: */**/** - statistical significance at 1%/5%/10%, respectively.

Appendix 8 – Announced M&A in Portugal by year



Source: Institute of Mergers, Acquisitions and Alliances. YTD: August 18; e: expected full year based on Jan 01 – Aug 18.

Appendix 9 – Summary of methodological aspects in event studies

BENCHMARK MODEL: MM – Market model, MAM – Market-adjusted model, CAPM – Capital Asset Pricing model, BMCP – Beta-matched control portfolio.

Authors	Period	Benchmark model	Event Window (days)
Leeth and Borg (2000), US	1919-1930	MM; MAM	One month before takeover to the month of completion
Frank and Harris (1989), UK	1955-1985	MM; MAM; CAPM	Announcement month Period of 6 months
Asquith et al. (1983), US	1963-1979	BMCP	[-20, 0]
Jarrell and Poulsen (1989), US	1963-1986	MAM	[-2, +1]; [-5, +5]
Travlos (1987), US	1972-1981	MM	Ten days before and after the announcement day
Servaes (1991), US	1972-1987	MM	[0, close]
Andrade et al. (2001), US	1973-1979	MM	[-1, +1]; [-20, close]
Doukas and Travlos (1988), US	1975-1983	MM	Ten days before and after the announcement day
Franks et al. (1991), US	1975-1984	MM	[-5, +5]
Morck et al. (1990), US	1975-1987	Ratio: bidder equity value and the price of target's equity	[-2, +1]
Higson and Elliott (1998), UK	1975-1990	Size decile benchmark	Announcement month
Doukas et al. (2001), Sweden	1980-1995	MM	[-5, +5]; [-5, +1]; [-1, +1]; [-1, 0]; [0, +1]
Moeller et al. (2004), US	1980-2001	MM	[-1, +1]
Chang (1998), US	1981-1992	MM	[-1, 0]
Conn et al. (2005), UK	1984-1998	MAM	[-1, +1]
Moeller and Schlingemann (2005), US	1985-1995	MAM	[-1, +1]
Francis et al. (2008), US	1990-2003	MM	[-1, +1]
Goergen and Renneboog (2004), Europe	1993-2000	Six measures of beta. CAPM	[-1, 0]; [-2, +2]; [-40, 0]; [-60, +60]
Martynova et al. (2011), Europe	1993-2001	MM	[-1, +1]; [-60, +60]
Faccio et al. (2006), Europe	1996-2001	MAM	[-2, +2]

Appendix 10 – Hofstede’s (1991) classification of national cultural dimensions

A – Power distance index (PDI)

<i>Score rank</i>	<i>Country or region</i>	<i>PDI Score</i>	<i>Score rank</i>	<i>Country or region</i>	<i>PDI Score</i>
1	Malaysia	104	27/28	South Korea	60
2/3	Guatemala	95	29/30	Iran	58
2/3	Panama	95	29/30	Taiwan	58
4	Philippines	94	31	Spain	57
5/6	Mexico	81	32	Pakistan	55
5/6	Venezuela	81	33	Japan	54
7	Arab countries	80	34	Italy	50
8/9	Equator	78	35/36	Argentina	49
8/9	Indonesia	78	35/36	South Africa	49
10/11	India	77	37	Jamaica	45
10/11	West Africa	77	38	USA	40
12	Yugoslavia	76	39	Canada	39
13	Singapore	74	40	Netherlands	38
14	Brazil	69	41	Australia	36
15/16	France	68	42/44	Costa Rica	35
15/16	Hong Kong	68	42/44	Germany FR	35
17	Colombia	67	42/44	Great Britain	35
18/19	Salvador	66	45	Switzerland	34
18/19	Turkey	66	46	Finland	33
20	Belgium	65	47/48	Norway	31
21/23	East Africa	64	47/48	Sweden	31
21/23	Peru	64	49	Ireland (Republic of)	28
21/23	Thailand 64	64	50	New-Zealand	22
24/25	Chile	63	51	Denmark	18
24/25	Portugal	63	52	Israel	13
26	Uruguay	61	53	Austria	11
27/28	Greece	60			

B – Uncertainty avoidance index (UAI)

<i>Score rank</i>	<i>Country or region</i>	<i>UAI Score</i>	<i>Score rank</i>	<i>Country or region</i>	<i>UAI Score</i>
1	Greece	112	28	Equator	67
2	Portugal	104	29	Germany FR	65
3	Guatemala	101	30	Thailand	64
4	Uruguay	100	31/32	Iran	59
5/6	Belgium	94	31/32	Finland	59
5/6	Salvador	94	33	Switzerland	58
7	Japan	92	34	West Africa	54
8	Yugoslavia	88	35	Netherlands	53
9	Peru	87	36	East Africa	52
10/15	France	86	37	Australia	51
10/15	Chile	86	38	Norway	50
10/15	Spain	86	39/40	South Africa	49
10/15	Costa Rica	86	39/40	New Zealand	49
10/15	Panama	86	41/42	Indonesia	48
10/15	Argentina	86	41/42	Canada	48
16/17	Turkey	85	43	USA	46
16/17	South Korea	85	44	Philippines	44
18	Mexico	82	45	India	40
19	Israel	81	46	Malaysia	36
20	Colombia	80	47/48	Great Britain	35
21/22	Venezuela	76	47/48	Ireland (Republic of)	35
21/22	Brazil	76	49/50	Hong Kong	29
23	Italy	75	49/50	Sweden	29
24/25	Pakistan	70	51	Denmark	23
24/25	Austria	70	52	Jamaica	13
26	Taiwan	69	53	Singapore	8
27	Arab countries	60			

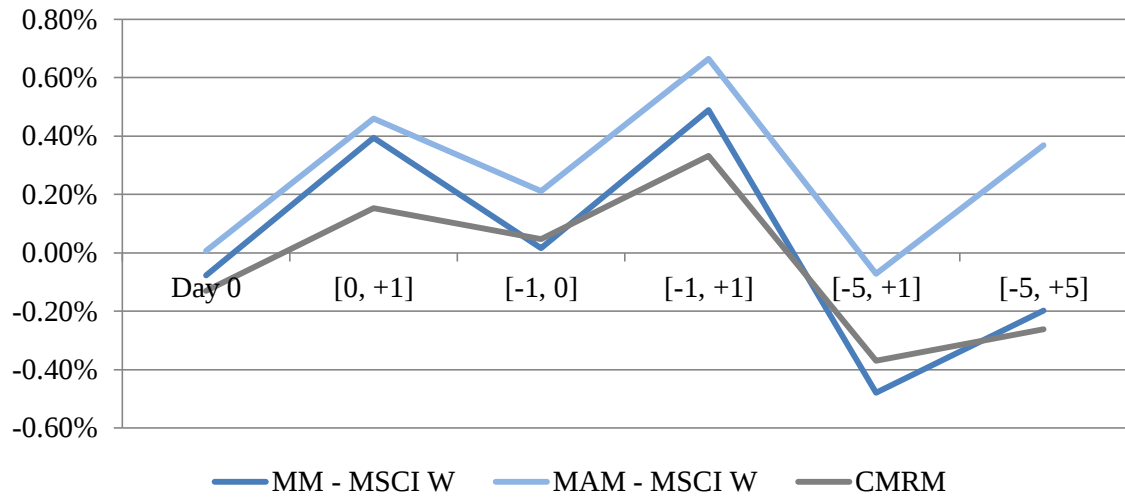
C – Individualism index (IDV)

<i>Score rank</i>	<i>Country or region</i>	<i>IDV Score</i>	<i>Score rank</i>	<i>Country or region</i>	<i>IDV Score</i>
1	USA	91	28	Turkey	37
2	Australia	90	29	Uruguay	36
3	Great Britain	89	30	Greece	35
4/5	Canada	80	31	Philippines	32
4/5	Netherlands	80	32	Mexico	30
6	New Zealand	79	33/35	East Africa	27
7	Italy	76	33/35	Yugoslavia	27
8	Belgium	75	35/36	Portugal	27
9	Denmark	74	36	Malaysia	26
10/11	Sweden	71	37	Hong Kong	25
10/11	France	71	38	Chile	23
12	Ireland (Republic of)	70	39/41	West Africa	20
13	Norway	69	39/41	Singapore	20
14	Switzerland	68	39/41	Thailand	20
15	Germany FR	67	42	Salvador	19
16	South Africa	65	43	South Korea	18
17	Finland	63	44	Taiwan	17
18	Austria	55	45	Peru	16
19	Israel	54	46	Costa Rica	15
20	Spain	51	47/48	Pakistan	14
21	India	48	47/48	Indonesia	14
22/23	Japan	46	49	Colombia	13
22/23	Argentina	46	50	Venezuela	12
24	Iran	41	51	Panama	11
25	Jamaica	39	52	Equator	8
26/27	Brazil	38	53	Guatemala	6
26/27	Arab countries	38			

D – Masculinity index (MAS)

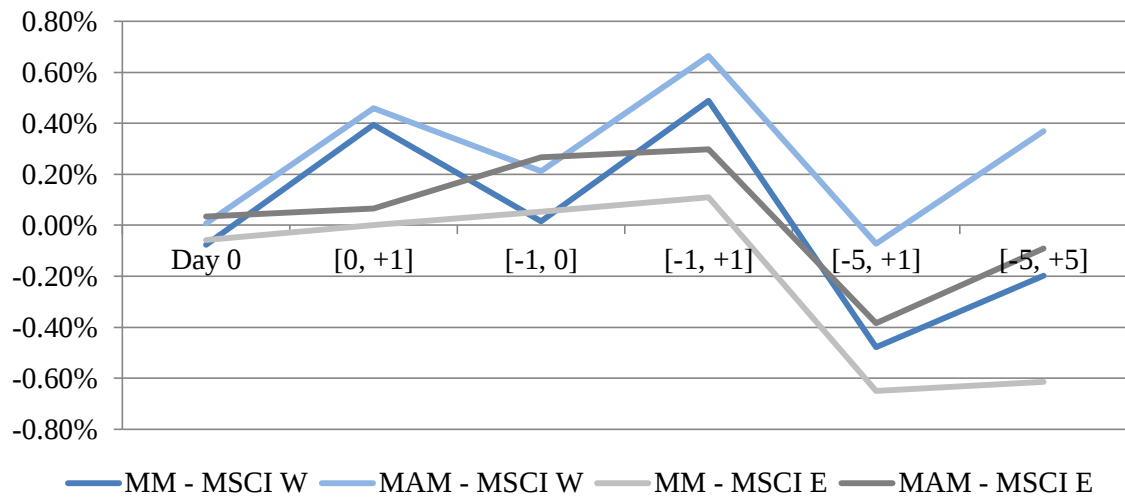
<i>Score rank</i>	<i>Country or region</i>	<i>MAS Score</i>	<i>Score rank</i>	<i>Country or region</i>	<i>MAS Score</i>
1	Japan	95	28	Singapore	48
2	Austria	79	29	Israel	47
3	Venezuela	73	30/31	Indonesia	46
4/5	Italy	70	30/31	West Africa	46
4/5	Switzerland	70	32/33	Turkey	45
6	Mexico	69	32/33	Taiwan	45
7/8	Ireland (Republic of)	68	34	Panama	44
7/8	Jamaica	68	35/36	Iran	43
9/10	Great Britain	66	35/36	France	43
9/10	Germany FR	66	37/38	Spain	42
11/12	Philippines	64	37/38	Peru	42
11/12	Colombia	64	39	East Africa	41
13/14	South Africa	63	40	Salvador	40
13/14	Equator	63	41	South Korea	39
15	USA	62	42	Uruguay	38
16	Australia	61	43	Guatemala	37
17	New Zealand	58	44	Thailand	34
18/19	Greece	57	45	Portugal	31
18/19	Hong Kong	57	46	Chile	28
20/21	Argentina	56	47	Finland	26
20/21	India	56	48/49	Yugoslavia	21
22	Belgium	54	48/49	Costa Rica	21
23	Arab countries	53	50	Denmark	16
24	Canada	52	51	Netherlands	14
25/26	Malaysia	50	52	Norway	8
25/26	Pakistan	50	53	Sweden	5
27	Brazil	49			

Appendix 11 – CAARs of three different models for all acquirers, considering the benchmark MSCI World Index



Source: own calculations.

Appendix 12 – CAARs obtained with two different benchmark indexes



Source: own calculations.

Appendix 13 – CAARs for cross-border and domestic bids

A – Cross-border bids

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-0.23	+0.56	-0.13	+0.65	-0.92	-1.22
% Positive CAAR	50.00	65.28	52.78	68.06	52.78	47.22
Parametric test	-0.07	+0.08	-0.02	+0.12	-0.13	-0.15
Signed-rank test	+0.21	+1.14	+0.04	+0.83	+0.64	+1.29
N = 72						
MSCI Europe						
CAAR (%)	-0.13	-0.03	-0.03	+0.07	-1.18	-1.77
% Positive CAAR	54.55	59.09	54.55	65.15	48.48	42.42
Parametric test	-0.04	-0.01	0.00	+0.01	-0.14	-0.18
Signed-rank test	+0.66	+0.69	+0.69	+0.75	+0.33	+1.48
N = 66						
MAM						
MSCI Europe						
CAAR (%)	+0.05	+0.10	+0.27	+0.32	-0.75	-1.01
% Positive CAAR	57.58	59.09	62.12	57.58	56.06	50.00
Parametric test	+0.01	+0.02	+0.05	+0.06	-0.10	-0.12
Signed-rank test	+1.21	+0.84	+1.38	+1.07	+0.46	+0.42
N = 66						
CMRM						
CAAR (%)	-0.19	+0.32	-0.05	+0.46	-0.81	-1.53
% Positive CAAR	47.22	58.33	55.56	62.50	54.17	47.22
Parametric test	-0.06	+0.05	-0.01	+0.08	-0.12	-0.18
Signed-rank test	+0.13	+0.34	+0.13	+0.34	+0.53	+1.67***
N = 72						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

B – Domestic bids

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	+0.18	+0.12	+0.27	+0.21	+0.27	+1.56
% Positive CAAR	50.00	57.14	54.76	54.76	57.14	57.14
Parametric test	+0.08	+0.04	+0.12	+0.07	+0.05	+0.21
Signed-rank test	+0.43	+0.02	+0.25	+0.06	+0.38	+0.44
Rank-sum test	+0.16	+0.71	+0.21	+0.52	+0.15	+1.25
N = 42						
MSCI Europe						
CAAR (%)	+0.05	+0.05	+0.18	+0.18	+0.18	+1.21
% Positive CAAR	52.38	52.38	52.38	59.52	57.14	54.76
Parametric test	+0.02	+0.02	+0.07	+0.06	+0.03	+0.17
Signed-rank test	+0.28	0.00	+0.12	+0.25	+0.05	+0.89
Rank-sum test	+0.53	+0.77	+0.45	+0.70	+0.03	+1.11
N = 42						
MAM						
MSCI Europe						
CAAR (%)	+0.01	+0.01	+0.27	+0.26	+0.20	+1.36
% Positive CAAR	45.24	50.00	54.76	57.14	52.38	54.76
Parametric test	0.00	0.00	+0.11	+0.09	+0.04	+0.22
Signed-rank test	+0.31	+0.77	+0.23	+0.26	+0.27	+0.27
Rank-sum test	+0.98	+1.08	+0.66	+0.81	+0.45	+0.54
N = 42						
CMRM						
CAAR (%)	-0.02	-0.14	+0.22	+0.11	+0.39	+1.92
% Positive CAAR	47.62	54.76	52.38	57.14	59.52	52.38
Parametric test	-0.01	-0.04	+0.09	+0.03	+0.06	+0.23
Signed-rank test	+0.28	0.00	+0.12	+0.25	+0.05	+0.89
Rank-sum test	+0.27	+0.48	+0.24	+0.05	+0.31	+1.82***
N = 42						

Source: own calculations. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of Portuguese acquirers sample with foreign acquirers samples.

Appendix 14 – CAARs for different payment methods

A – All cash payment

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	+0.31	+0.10	+0.40	+0.19	-0.01	+1.17
% Positive CAAR	67.74	64.52	54.84	58.06	58.06	54.84
Parametric test	+0.08	+0.02	+0.09	+0.04	0.00	+0.16
Signed-rank test	+1.99**	+1.42	+1.74***	+1.36	+0.49	+0.98
N = 31						
MSCI Europe						
CAAR (%)	+0.28	+0.07	+0.43	+0.22	-0.04	+0.99
% Positive CAAR	67.74	58.06	58.06	64.52	51.61	54.84
Parametric test	+0.07	+0.01	+0.10	+0.04	-0.01	+0.13
Signed-rank test	+1.81***	+1.21	+1.99**	+1.48	+0.63	+0.90
N = 31						
MAM						
MSCI Europe						
CAAR (%)	+0.32	+0.15	+0.58	+0.41	+0.30	+1.76
% Positive CAAR	70.97	61.29	67.74	61.29	61.29	58.06
Parametric test	+0.08	+0.03	+0.13	+0.08	+0.05	+0.25
Signed-rank test	+2.34**	+1.51	+2.56**	+1.92***	+1.40	+1.97**
N = 31						
CMRM						
CAAR (%)	+0.35	+0.04	+0.60	+0.29	+0.44	+1.15
% Positive CAAR	64.52	61.29	67.74	61.29	64.52	58.06
Parametric test	+0.09	+0.01	+0.14	+0.05	+0.07	+0.14
Signed-rank test	+1.83***	+1.23	+1.94	+1.48	+0.46	+0.94
N = 31						

Source: own calculations. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

B – All Stock and mixed payment

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-1.62	+0.60	-0.83	+1.39	-2.32	-2.69
% Positive CAAR	33.33	50.00	44.44	61.11	50.00	38.89
Parametric test	-0.43	+0.05	-0.09	+0.20	-0.18	-0.18
Signed-rank test	+1.79***	+0.54	+1.64	+0.82	+1.19	+1.21
Rank-sum test	+2.40**	+1.04	+2.34**	+1.34	+1.25	+1.54
N = 18						
MSCI Europe						
CAAR (%)	-1.51	-1.56	-0.87	-0.92	-4.29	-4.78
% Positive CAAR	38.89	50.00	38.89	50.00	38.89	33.33
Parametric test	-0.42	-0.22	-0.09	-0.12	-0.30	-0.29
Signed-rank test	+1.48	+1.06	+1.62	+1.38	+1.47	+1.89***
Rank-sum test	+2.15**	+1.57	+2.47**	+2.02**	+1.66***	+2.14**
N = 18						
MAM						
MSCI Europe						
CAAR (%)	-1.51	-1.57	-0.67	-0.74	-3.91	-3.81
% Positive CAAR	33.33	44.44	38.89	38.89	44.44	44.44
Parametric test	-0.44	-0.23	-0.07	-0.10	-0.31	-0.27
Signed-rank test	+1.65***	+1.28	+1.66***	+1.47	+1.12	+1.42
Rank-sum test	+2.62*	+2.07**	+2.74*	+2.37**	+1.72***	+2.24**
N = 18						
CMRM						
CAAR (%)	-1.43	+0.38	-0.42	+1.38	-2.01	-1.80
% Positive CAAR	27.78	55.56	50.00	61.11	50.00	33.33
Parametric test	-0.43	+0.04	-0.05	+0.22	-0.17	-0.12
Signed-rank test	+1.79***	+0.70	+1.61	+0.87	+1.14	+0.96
Rank-sum test	+2.26**	+1.16	+2.49**	+1.45	+1.33	++1.13
N = 18						

Source: own calculations. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of all cash sample with other payments sample.

Appendix 15 – CAARs considering the target legal status

A – Private target

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	+0.64	+0.49	+0.01	-0.14	+0.21	-1.14
% Positive CAAR	66.67	72.22	66.67	61.11	66.67	44.44
Parametric test	+0.28	+0.20	0.00	-0.05	+0.06	-0.21
Signed-rank test	+1.52	+0.95	+0.78	+0.42	+0.34	+0.92
N = 18						
MSCI Europe						
CAAR (%)	+0.48	+0.45	+0.10	+0.07	+0.40	-1.06
% Positive CAAR	61.11	66.67	66.67	61.11	61.11	33.33
Parametric test	+0.21	+0.18	+0.03	+0.03	+0.12	-0.20
Signed-rank test	+1.31	+0.82	+0.81	+0.55	+0.39	+1.11
N = 18						
MAM						
MSCI Europe						
CAAR (%)	+0.80	+0.74	+0.45	+0.39	+0.64	-0.70
% Positive CAAR	61.11	72.22	72.22	66.67	72.22	38.89
Parametric test	+0.32	+0.31	+0.14	+0.17	+0.23	-0.14
Signed-rank test	+1.57	+1.01	+1.30	+0.86	+0.73	+0.67
N = 18						
CMRM						
CAAR (%)	+0.59	+0.06	+0.32	-0.20	+0.21	-0.35
% Positive CAAR	55.56	61.11	66.67	55.56	77.78	50.00
Parametric test	+0.26	+0.02	+0.10	-0.05	+0.06	-0.06
Signed-rank test	+1.00	+0.45	+0.46	+0.09	+0.07	+0.71
N = 18						

Source: own calculations. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

B – Public target

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-0.15	+0.18	-0.12	+0.21	-0.15	+0.64
% Positive CAAR	45.45	24.45	21.82	29.09	21.82	18.18
Parametric test	-0.04	+0.04	-0.03	+0.04	-0.02	+0.08
Signed-rank test	+0.17	+0.66	+0.16	+0.76	+0.27	+0.07
Rank-sum test	+1.66***	+0.51	+0.64	+0.02	+0.39	+0.81
N = 55						
MSCI Europe						
CAAR (%)	-0.06	+0.09	-0.08	+0.07	-0.11	+0.57
% Positive CAAR	53.70	53.70	50.00	64.81	51.85	51.85
Parametric test	-0.02	+0.02	-0.02	+0.01	-0.02	+0.08
Signed-rank test	+0.28	+0.15	+0.42	+0.32	+0.24	+0.30
Rank-sum test	+1.17	+0.65	+0.64	+0.36	+0.49	+0.90
N = 54						
MAM						
MSCI Europe						
CAAR (%)	-0.11	+0.04	-0.05	+0.10	+0.12	+1.07
% Positive CAAR	53.70	51.85	53.70	53.70	55.56	59.26
Parametric test	-0.03	+0.01	-0.01	+0.02	+0.02	+0.15
Signed-rank test	+0.01	+0.01	+0.52	+0.37	+0.30	+0.41
Rank-sum test	+1.52	+0.87	+1.01	+0.62	+0.38	+0.84
N = 54						
CMRM						
CAAR (%)	-0.16	+0.11	-0.09	+0.17	+0.02	+0.44
% Positive CAAR	43.64	25.45	25.45	27.27	23.64	21.82
Parametric test	-0.04	+0.02	-0.02	+0.03	+0.00	+0.05
Signed-rank test	+0.17	+0.59	+0.13	+0.69	+0.18	+0.17
Rank-sum test	+0.71	+0.08	+0.04	+0.36	+0.04	+0.63
N = 55						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of private and public targets samples.

Appendix 16 – CAARs considering the % of initial stake

A – 0% initial stake

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-0.21	+0.37	-0.01	+0.58	-0.46	-0.50
% Positive CAAR	45.24	59.52	51.19	64.29	54.76	48.81
Parametric test	-0.06	+0.06	0.00	+0.12	-0.06	-0.06
Signed-rank test	+0.37	+0.47	+0.07	+0.68	+0.45	+1.08
N = 84						
MSCI Europe						
CAAR (%)	-0.13	-0.02	+0.10	+0.21	-0.62	-1.01
% Positive CAAR	50.63	55.70	53.16	62.03	53.16	44.30
Parametric test	-0.04	0.00	+0.02	+0.04	-0.08	-0.10
Signed-rank test	+0.05	+0.24	+0.62	+0.71	+0.19	+1.46
N = 79						
MAM						
MSCI Europe						
CAAR (%)	-0.01	+0.10	+0.28	+0.39	-0.42	-0.46
% Positive CAAR	48.10	55.70	58.23	55.70	55.70	48.10
Parametric test	0.00	+0.02	+0.05	+0.08	-0.06	-0.05
Signed-rank test	+0.31	+0.30	+0.95	+0.83	+0.21	+0.68
N = 79						
CMRM						
CAAR (%)	-0.24	+0.19	+0.03	+0.45	-0.37	-0.51
% Positive CAAR	44.05	53.57	52.38	60.71	57.14	46.43
Parametric test	-0.07	+0.03	0.00	+0.09	-0.05	-0.06
Signed-rank test	+0.58	+0.26	+0.21	+0.44	+0.32	+1.24
N = 84						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

B – Initial stake > 0%

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	+0.44	+0.43	+0.05	+0.04	-0.60	+0.75
% Positive CAAR	72.73	68.18	59.09	59.09	54.55	59.09
Parametric test	+0.23	+0.14	+0.02	+0.01	-0.12	+0.12
Signed-rank test	+1.72***	+0.74	+0.55	+0.03	+0.69	+0.06
Rank-sum test	+1.65***	+0.39	+0.49	+0.31	+0.42	+0.60
N = 22						
MSCI Europe						
CAAR (%)	+0.25	+0.04	-0.12	-0.33	-0.95	+0.22
% Positive CAAR	72.73	54.55	54.55	63.64	45.45	59.09
Parametric test	+0.15	+0.01	-0.05	-0.09	-0.19	+0.03
Signed-rank test	+1.46	+0.02	+0.64	+0.34	+0.74	+0.01
Rank-sum test	+0.93	+0.10	0.02	+0.64	+0.52	+0.74
N = 22						
MAM						
MSCI Europe						
CAAR (%)	+0.26	-0.05	+0.18	-0.14	-0.44	+0.72
% Positive CAAR	72.73	50.00	59.09	59.09	50.00	63.64
Parametric test	+0.16	-0.02	+0.07	-0.04	-0.10	+0.12
Signed-rank test	+1.43	+0.39	+1.14	+0.29	+0.29	+0.39
Rank-sum test	+0.89	+0.40	+0.42	+0.59	+0.36	+0.61
N = 22						
CMRM						
CAAR (%)	+0.33	+0.11	+0.14	-0.08	-0.30	+0.46
% Positive CAAR	63.64	68.18	59.09	59.09	54.55	59.09
Parametric test	+0.18	+0.03	+0.06	-0.02	-0.05	+0.05
Signed-rank test	+1.46	+0.62	+0.71	+0.13	+0.27	+0.29
Rank-sum test	+1.47	+0.20	+0.62	+0.21	+0.10	+0.84
N = 22						

Source: own calculations. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of acquirers with and without initial stake.

Appendix 17 – CAARs considering the industry relatedness

A – Focused acquisitions

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	+0.03	+0.70	-0.09	+0.58	+0.10	+0.05
% Positive CAAR	54.24	61.02	55.93	62.71	61.02	49.15
Parametric test	+0.01	+0.11	-0.02	+0.12	+0.02	+0.01
Signed-rank test	+0.69	+0.56	+0.52	+0.44	+0.21	+0.77
N = 59						
MSCI Europe						
CAAR (%)	+0.09	+0.05	-0.10	-0.14	-0.35	-0.87
% Positive CAAR	57.41	53.70	59.26	62.96	55.56	40.74
Parametric test	+0.03	+0.01	-0.02	-0.03	-0.05	-0.10
Signed-rank test	+1.07	+0.21	+1.07	+0.41	+0.04	+1.33
N = 54						
MAM						
MSCI Europe						
CAAR (%)	+0.23	+0.16	+0.13	+0.06	-0.18	-0.49
% Positive CAAR	53.70	53.70	62.96	57.41	59.26	44.44
Parametric test	+0.07	+0.04	+0.03	+0.01	-0.03	-0.06
Signed-rank test	+1.36	+0.16	+1.56	+0.59	+0.24	+0.78
N = 54						
CMRM						
CAAR (%)	-0.16	+0.18	-0.28	+0.06	+0.03	-0.55
% Positive CAAR	45.76	52.54	55.93	59.32	61.02	44.07
Parametric test	-0.05	+0.03	-0.07	+0.01	+0.00	-0.08
Signed-rank test	+0.01	+0.22	+0.15	+0.31	+0.26	+1.30
N = 59						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

B – Diversified acquisitions

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-0.19	+0.07	+0.13	+0.39	-1.10	-0.46
% Positive CAAR	45.45	63.64	50.91	63.64	47.27	52.73
Parametric test	-0.07	+0.02	+0.03	+0.09	-0.14	-0.05
Signed-rank test	+0.21	+0.69	+0.21	+0.51	+0.79	+0.34
Rank-sum test	+0.56	+0.13	+0.42	+0.11	+0.44	+0.23
N = 55						
MSCI Europe						
CAAR (%)	-0.21	-0.05	+0.20	+0.36	-0.95	-0.36
% Positive CAAR	50.00	59.26	48.15	62.96	48.15	53.70
Parametric test	-0.08	-0.01	+0.04	+0.09	-0.13	-0.04
Signed-rank test	+0.39	+0.16	+0.19	+0.23	+0.58	+0.26
Rank-sum test	+1.02	0.00	+0.84	+0.10	+0.40	+0.70
N = 54						
MAM						
MSCI Europe						
CAAR (%)	-0.16	-0.03	+0.40	+0.54	-0.59	+0.31
% Positive CAAR	51.85	57.41	55.56	57.41	50.00	59.26
Parametric test	-0.06	-0.01	+0.08	+0.13	-0.09	+0.04
Signed-rank test	+0.15	+0.13	+0.32	+0.48	+0.09	+0.55
Rank-sum test	+1.20	+0.08	+0.85	+0.10	+0.10	+0.85
N = 54						
CMRM						
CAAR (%)	-0.10	+0.13	+0.40	+0.62	-0.79	+0.04
% Positive CAAR	49.09	61.82	52.73	61.82	50.91	54.55
Parametric test	-0.04	+0.03	+0.08	+0.14	-0.10	0.00
Signed-rank test	+0.13	+0.89	+0.10	+0.88	+0.42	+0.10
Rank-sum test	+0.07	+0.84	+0.07	+0.90	+0.15	+0.92
N = 55						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of acquirers that made diversified and focused acquisitions.

Appendix 18 – CAARs considering cultural differences in cross-border bids

A – High cultural differences

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	-0.49	+0.29	-0.32	+0.46	-2.19	-2.76
% Positive CAAR	50.00	55.88	55.88	64.71	50.00	44.12
Parametric test	-0.10	+0.03	-0.04	+0.06	-0.23	-0.26
Signed-rank test	+0.19	+0.02	+0.13	+0.01	+1.02	+1.24
N = 34						
MSCI Europe						
CAAR (%)	-0.53	-1.02	-0.14	-0.62	-2.83	-3.92
% Positive CAAR	50.00	56.67	63.33	63.33	46.67	43.33
Parametric test	-0.11	-0.14	-0.02	-0.08	-0.25	-0.30
Signed-rank test	+0.06	+0.40	+0.67	+0.13	+0.54	+1.47
N = 30						
MAM						
MSCI Europe						
CAAR (%)	-0.27	-0.78	+0.29	-0.23	-2.48	-3.03
% Positive CAAR	50.00	56.67	70.00	60.00	60.00	46.67
Parametric test	-0.05	-0.11	+0.04	-0.03	-0.24	-0.26
Signed-rank test	+0.45	+0.33	+1.14	+0.31	+0.20	+0.71
N = 30						
CMRM						
CAAR (%)	-0.56	-0.07	-0.32	+0.17	-2.02	-2.72
% Positive CAAR	41.18	55.88	50.00	58.82	47.06	44.12
Parametric test	-0.12	-0.01	-0.04	+0.02	-0.23	-0.26
Signed-rank test	+0.26	+0.28	+0.35	+0.34	+0.90	+1.34
N = 34						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test.

B – Low cultural differences

	Event Window					
	Day 0	[0, +1]	[-1, 0]	[-1, +1]	[-5, +1]	[-5, +5]
MM						
MSCI World						
CAAR (%)	+0.02	+0.74	+0.08	+0.80	+0.23	+0.30
% Positive CAAR	51.35	72.97	51.35	70.27	56.76	51.35
Parametric test	+0.01	+0.34	+0.03	+0.30	+0.07	+0.07
Signed-rank test	+0.03	+1.53	+0.08	+1.16	+0.23	+0.35
Rank-sum test	+0.34	+0.85	+0.26	+0.62	+0.42	+0.99
N = 37						
MSCI Europe						
CAAR (%)	+0.23	+0.74	+0.10	+0.61	+0.20	+0.16
% Positive CAAR	60.00	60.00	48.57	65.71	48.57	42.86
Parametric test	-0.08	-0.01	+0.04	+0.09	-0.13	-0.04
Signed-rank test	+0.96	+1.44	+0.24	+0.83	+0.13	+0.43
Rank-sum test	+0.11	+1.22	+0.73	+0.26	+0.67	+1.31
N = 35						
MAM						
MSCI Europe						
CAAR (%)	+0.31	+0.76	+0.24	+0.69	+0.58	+0.64
% Positive CAAR	62.86	60.00	54.29	54.29	51.43	51.43
Parametric test	+0.25	+0.39	+0.12	+0.30	+0.19	+0.13
Signed-rank test	+1.24	+1.52	+0.59	+1.01	+0.81	+0.19
Rank-sum test	+0.07	+1.15	+0.95	+0.12	+0.62	+0.87
N = 35						
CMRM						
CAAR (%)	+0.15	+0.63	+0.23	+0.71	+0.28	-0.32
% Positive CAAR	54.05	59.46	62.16	64.86	62.16	51.35
Parametric test	+0.08	+0.21	+0.07	+0.18	+0.07	-0.06
Signed-rank test	+0.68	+1.21	+0.39	+0.88	+0.22	+0.84
Rank-sum test	+0.60	+0.95	+0.58	+0.88	+0.98	+0.79
N = 37						

Source: own calculations. The MSCI Europe Index is only available after 1999. The classification *, **, ***, correspond to the statistical significance at the 1%, 5%, and 10% level for a two-tailed t-student test. The Rank-sum test compares the median of acquirers that have low and high cultural differences with the Portuguese targets.