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IMPACT OF M&A ANNOUNCEMENTS ON LISTED FIRMS IN THE IBERIAN MARKETS

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Abstract:

Mergers and/or acquisitions (M&A) are important business operations for firms that wish to diversify, become stronger and more competitive. The main objective of this paper is to investigate the impact of M&A announcements on the abnormal stock returns of firms listed on the Portugal and Spain stock exchanges. The empirical work analyzed 29 trades in the PSI-20 and 25 trades in the IBEX-35, since the year 2000, using the event study methodology. Most of the research investigates corporate combinations that take place in international markets and among large firms. Therefore, a first contribution of this paper is to study the phenomenon in smaller markets and firms. The results suggest that the two markets react differently to announcements of M&A. Overall, the findings seem to show that in the Portuguese market the joint firms present average gains and that in the Spanish market the joint firms present average losses, bidders have sharper reactions and targets have higher losses. The study also indicates that the abnormal returns of the Portuguese firms (especially the bidders) and the Spanish bidding firms tended to stabilize around a week after the announcement date. This conclusion is another useful contribution of the paper for academics and decision makers of corporate restructuring.

Key words: *Mergers and Acquisitions; Events Study; Stock Price; Abnormal Returns; Price Reaction*

1. Introduction

Investment is essential for firms to grow and to adapt to the permanent evolution of the markets in which they operate. The pursuit of the essential objective of maximizing business value imposes growth decisions either organically or externally. External growth is more accelerated and involves business combinations in the form of mergers and/or acquisitions (M&A). These business operations are important processes for firms to diversify their businesses, to become stronger and more competitive.

The phenomenon of M&A has been occurring in different waves over time, and currently has a major role in the field of management strategies. Despite being increasingly frequent, the success of corporate restructuring operations depends on the creation of synergistic gains by the entity that combines the parties involved (bidder and target).

Even though most studies that analyze the impact of the M&A announcement on stock returns are carried out in international markets, where the phenomenon is more frequent and among large firms, the empirical results are not yet consensual. In addition, the scarcity of studies of this nature carried out within the scope of the Iberian market justifies the relevance of this investigation.

The main objective of this paper is to investigate how the Iberian stock market reacts to the announcement of 29 M&A operations in Portugal and 25 M&A operations in Spain since the year 2000. More specifically, we intend to analyze the impact of this strategy, in terms of abnormal stock returns, in all the firms involved, looking for evidence of value creation or degradation. In addition, we intend to identify the permanence period of abnormal returns (AR) and analyze the reaction of these returns to the announcement of the operations.

Under the formulation of five research hypotheses, this essay uses the study of events to pursue the defined objectives. The procedure is based on the methodology of Mackinlay (1997), to determine the AR resulting from the announcement of M&A transactions, and on the methodology of Beaver (1968), to determine the reaction levels of the returns to those news.

The paper is organized as follows. The following section presents a literature review, highlighting the historical context of M&A, the concepts and perspectives of these operations and the typology of their implementation, ending with empirical evidence on the topic. Section 3 explores the empirical study, highlighting the objective, the research hypotheses and the sample. Additionally, it describes the methodology for the study of events, the model adopted and discusses the results obtained. Finally, section 4 highlights the main conclusions.

2. Literature Review

2.1. Historical Context of Mergers and Acquisitions

Increasingly worldwide, companies resort to restructuring operations to achieve their objectives, revealing an important field for financial research (Murthy et al., 2020).

M&A operations emerged in the 18th century and in 1897 started several cycles/vacancies (Gugler, et al., 2003), fundamentally studied in the American market (Martynova & Renneboog, 2005, 2008 and Lipton, 2006). While M&A usually occurs in periods of economic recovery, being constantly subject to regulatory changes (Martynova & Renneboog, 2005), the interruption of M&A vacancies occurs due to the abrupt fall of the stock market and coincides with a subsequent period of economic recession.

Most M&A studies identify six cycles. The first cycle (1897-1904) occurred after the industrial revolution. According to O'Brien (1988), this cycle was caused by an economic depression and by the market development on the New York Stock Exchange (NYSE).

The desire of companies (food, metal, chemical, oil, and transportation equipment sectors) to reduce price competition has led to predominantly horizontal operations (Martynova & Renneboog, 2005). However, this phase culminated with the crisis in the stock market and the consequent bankruptcy of some banks (O'Brien, 1988). The second cycle (1916-1929) occurred after the end of the First World War and coincided with the US boom in the twenties (Lipton, 2006), with predominantly vertical operations that originated monopolistic movements (Martynova & Renneboog, 2005). This phase also culminated with the fall in stock prices, causing distrust in investors and a retraction in the business. The third cycle (1965-1969) was triggered by political changes, deregulation in the financial sector, formation of new financial instruments/markets and development of technologies in the electronics industry (Sudarsanam, 2003). The search for new opportunities in new markets with different products has determined the growth of the firms. For example, in the U.S., conglomerate-type operations were prominent, while in the U.K., horizontal-type operations were prominent. This phase was interrupted by the severe oil crisis. The fourth cycle (1985-1989) was characterized by acquisition transactions (horizontal and vertical) and market divestitures to reorganize businesses (Sudarsanam, 2003). During this cycle there were different particularities, such as the larger size of the acquired firms, the payment in cash, the hostile acquisitions and the use of high levels of debt (Ferreira, 2002). The fifth cycle (1992-2000) began after the crisis of the 1990s and progressed due to the reduction of protectionist barriers and the globalization of organizations in terms of products and capital (Gugler, et al., 2003). The relevance of this cycle is justified by the number and values of the predominantly horizontal operations (Martynova & Renneboog, 2005). This wave was interrupted by the stock market crash in 2000. The sixth cycle (2003-2008) started with the period of market recovery and continued the operations previously interrupted by both the crisis and the terrorist attack of September 11, 2001 (Martynova & Renneboog, 2005). Although M&A increased substantially between 2014 and 2017, due to the worldwide economic recovery, the sharp drop in 2020 can be explained by the COVID-19 pandemic.

2.2. Concepts and Perspectives on Mergers and Acquisitions

According to Alhenawi & Stilwell (2019, p. 354), "M&A are important business decisions made by modern corporations. They are typically carried out by two or more business entities that align their management operations to survive in a competitive environment". However, Bomfim & Callado (2016, p. 80) highlight that these "dynamic corporate activities still raise many questions about the effects on the organizational performance of the acquiring firms or resulting from these business combinations".

According to Valente (2005), the difference between a merger and an acquisition lies in the continuity or not of the stockholders. In merger operations, stockholders remain at the target firm, unlike acquisition operations. Matos & Rodrigues (2000, p. 17) emphasize that "the merger can take place in two ways: (1) one of the pre-existing companies absorbs the assets of the others, which are extinguished, or (2) a new company absorbs the assets of all pre-existing companies ", with the first case corresponding to merger by incorporation and the second case corresponding to merger

by concentration. In relation to listed companies, in the merger-creation the stocks of the old firms disappear, being exchanged for stocks of the new company, and in the merger-absorption, the stocks of the acquiring firm remain. The M&A's contributes to firms adapting to the environment, reconfiguring their organizational system through new combinations of resources between the acquirers and the acquired ones (Brueller, Carmeli & Drori, 2014) in order to expand the competitive advantages (Santos, Calegario & Carvalho, 2018). However, M&A only results in stockholder value creation if firms increase synergies and cash flow in the combined firm (Motta et al., 2013). An important determinant of the success of the merger is post-transaction integration, which depends on several factors, such as the similarity between the corporate cultures of the firms involved (Bereskin et al., 2018).

Over the years, there has been an evolution in the type of M&A operations and constant changes in their motivations, explained by several theories. According to Kumar (2009), there are two theories to explain M&A operations: the neoclassical theory (of value maximization) and the theory of non-maximization of value. The first theory explains that the motivation for mergers coincides with the main objective of the manager's performance, which is to increase business value. The second theory explains that mergers are carried out to satisfy managers' personal interests, namely, the enrichment or increase of the emerging prestige of the business dimension (Kumar, 2009).

Merger completion respects the interests of managers of acquiring firms and the motivation can be divided between internal impulse and external incentive (Chen & Cui, 2019): the first concerns the company's impulse to seek better capital, synergies, and industrial reorganization; the second concerns the external factors that foster operations.

Often in these operations, stockholder value is destroyed in the implementation challenge. Beyond reasons that lead managers to conduct M&A, it should be noted that not all operations are successful. Silva (2015) highlights the main problems that may derive from these integrations: (1) culture clashes, (2) inability to realize economies of scale or synergies, (3) exit of customers, and (4) possibility that diversification constitutes a risk for the companies.

2.3. Generic Types of Mergers and Acquisitions

The classification of M&A operations depends on several criteria, and may be guided by the relationships between the activities of the firms involved, the form of integration and the agreement made between the parties. However, the type of M&A depends on the diversification strategy and the growth that the firms intend to achieve.

Horizontal Mergers and Acquisitions

Ferreira (2002) indicates that the horizontal M&A phenomenon occurs when the firms involved carry out the same activity or industry, resulting in a merger of existing resources. This type of operations aims at business growth and obtaining economies of scale in maturing activities, among organizations in competitive sectors. Horizontal integrations have been supervised, insofar as they may imply situations of

monopoly/oligopoly by reducing the number of firms operating in some sectors of activity (Bastardo & Gomes, 1991).

Vertical Mergers and Acquisitions

Matos & Rodrigues (2000) indicate that the vertical M&A phenomenon occurs when the firms involved operate in the same activity, but are at different stages (related or dependent) in the production and distribution chain of the product or service. Ross, Westerfield & Jaffe (1995) point out that this type of operation is carried out with the objective of obtaining competitiveness gains between organizations that are at a higher level (upstream: suppliers) or a lower level (downstream: customers). In addition, the strategy helps firms reduce cash flow uncertainty and the risk of supply chain disruption (Lin, Officer & Shen, 2018), as well as cost savings, whether by dominating the purchase of goods , or by sharing products (Chang & Moore, 2012).

Conglomerate Mergers and Acquisitions

Matos & Rodrigues (2000) indicate that the M&A phenomenon in a conglomerate occurs when the firms involved exercise very different activities and operate in unrelated markets, with the main objective of diversification. Therefore, they require different work techniques and more sophisticated ways of operating (Ferreira, 2002). This type of operations can be subdivided as follows (Matos & Rodrigues, 2000; Vieito & Maquieira, 2010): (1) expansion of the market for diversification; (2) expansion of the geographical area to other markets; (3) pure conglomerate to expand products and, simultaneously, the geographical area. Market extension integrations have been supervised, as they can raise issues of loss of competition or competitiveness (Garcia & Azevedo, 2019).

2.4. Empirical Evidence

The studies on M&A continue to motivate the interest of financial research, mainly because the results of the impact on the performance of the firms involved are still not consensual. Most of the studies reveal that the markets react to the announcement of corporate integration through the consequent variation in the stock prices of the companies involved (Powell & Stark, 2005). This seems to mean that M&A generates benefits when companies come together, and therefore the announcement is interpreted in the market as a sign that the operation will create value (Kishore & Jindal, 2017). In this context, the authors predominantly use the stock return as a measure of performance (Abdullayeva, 2015). The event study methodology aims to identify the impact of an event on a variable.

Campa & Hernando (2006) analyzed the performance of M&A that took place in the EU financial sector between 1998 and 2002 through the study of events. Around the date of the announcement of the transactions, positive AR were formed for the stockholders of the target firms and null AR for the stockholders of the acquiring firms. However, a year after the AR were practically nil for both firms. Pandey & Kumari (2020) studied the effects of the M&A announcement in 8 Indian banks and 6 American banks between 2010 and 2020. Although the markets reacted differently, given the inequalities, there were significant negative cumulative average abnormal returns (CAAR) in most days

of the event window period and in the post-event period. Still in the same market, Mall & Gupta (2019) analyzed the impact of the announcement of 383 M&A transactions in the banking sector between the years 2000 and 2018. The authors found positive average abnormal returns (AAR) for the stockholders of the acquiring banks. Karamanos, Bakatselos & Agolli (2015) develop a conceptual framework that integrates theoretical perspectives from economics, finance, organization theory, strategic management and human resource management to explain acquisitions. The empirical analysis on bank M&A in Greece over the period 1996-2013 concluded that, on average, acquired firms stockholders gain at the expense of the acquiring firms and the market value of the combined entity appears to have little improvement around the announcement of the operations.

Amewu (2014) researched the impact of M&A ads on the performance of 80 public firms in the USA, UK, Australia, Japan and some European countries during the period of the global financial crisis (pre-crisis from 1999 to October 2007 and crisis from 2007 to 2009). The study revealed an absence of significant changes in the returns of acquiring firms before and after the crisis.

Braga & Gomes (2016) studied the impact of the preliminary announcement on the abnormal stock returns in 12 takeover bids in the Portuguese market between 2000 and 2014. In the period close to the announcement (weeks -5 to +5) seems to exist a wealth transfer from the stockholders of the acquiring companies to the stockholders of target companies. Song, Tippett & Vivian (2017) analyze the economic benefits that accrue to Chinese acquiring companies. Considering a sample of 279 acquiring companies studied from 1990 to 2008, the results suggest the accumulation of positive AR. The work of Oswal and Goel (2020) intended to identify the magnitude of the excess return provided by the stocks of acquiring firms in M&A operations. For this purpose, 352 transactions with an announcement value of US$100 million were studied, between 2003 and 2018, involving an listed Indian buyer. The results found a marginal positive AR on the day of announcement, which seemed to fade on the second day after.

The study by Varma & Sharma (2015) on the acquisition of Network 18 Media & Investments by Reliance Industries in 2014 in India, through the conversion of bonds, showed that the stock price rose on the date of the announcement of the transaction. Kishore & Jindal (2017) applied the event study methodology to acquisition operations between the two largest firms in the Indian market. The results suggest that the disclosure of the intention did not motivate relevant variations in the business value.

From another perspective, Krolikowski et al. (2017) investigate the value of customer/supplier relationships in M&A. The findings suggest that targets (suppliers) with strong customer/supplier relationships obtain higher AR and higher merger premiums. On the other hand, Adra, Barbopoulos & Saunders (2020) verified that monetary policy influences a wide range of M&A outcomes. Specifically, the operations announced during periods of high monetary policy uncertainty are associated with significant declines in acquirer value.

3. Empirical Study

3.1. Objective, Research Hypotheses and Sample

Previous studies have deepened the subject, but the lack of consensus on their results justifies further advances in research. The main objective of the paper is to investigate how the Iberian stock market reacts to the announcement of M&A operations between listed firms, in terms of the AR for its stockholders. It is also intended to identify the permanence period of AR, i.e., until the stock prices resume their trend. Finally, it is intended to analyze the intensity of the reaction that the announcement causes in the AR. For this, the following research hypotheses are raised:

H1 – The announcement of the M&A operations causes higher negative average abnormal returns than positive average abnormal returns on the bidding firms;
H2 – The announcement of the M&A operations causes higher positive average abnormal returns than negative average abnormal returns on the target firms;
H3 – The announcement of the M&A operation causes positive average abnormal returns higher than the negative average abnormal returns in the stocks of the involved firms;
H4 – The abnormal average returns in M&A operations tend to stabilize earlier in the bidders firms than in the target firms;
H5 – The announcement of the M&A operations implies a strong reaction in abnormal returns, more expressive in the target firms than in the bidding firms.

M&A transactions and their announcement dates were identified in the Zephry database by Bureau Van Dijk (BvD). The stock prices, the Portuguese Stock Exchange (PSI-20) levels, and the Spanish Exchange Index (IBEX-35) levels were identified on Investing websites. Between January 1, 2000 and December 31, 2020 there have been 29 merger or acquisition operations involving firms quoted on the PSI-20 and 25 merger or acquisition operations involving firms quoted on the IBEX-35, with stock prices available in the range of [-90; +30] days around the announcement date (day zero). The study purged acquisitions of own stocks, transactions whose stocks did not trade daily and only considered the first batch of acquisition in cases where other batches followed in the short term. The sample of firms involved in the F&A operations of the empirical study is shown in Appendix 1.

3.2. Event Studies Methodology

The study of events is the methodology implemented in this paper, which is based on the possibility of an AR occurring as a result of some relevant event. In this context, Mackinlay (1997) suggest defining the event of interest (the announcement of M&A operation), the analysis period, the previous estimation window and the event window. Considering the underlying assumptions, this study allows the elimination of general economic conditions and the differences in risk and return of firms so that it becomes

possible to analyze the phenomenon (Brandão, 2014). The procedure consists of using the AR in the period surrounding the date of the phenomenon, calculated by the difference between the observed return and the modeled return (determined by the market model).

In a short-term perspective, the approach is based on the hypothesis that the M&A announcement represents new information to the market, implying changes in investors' expectations about the firms involved in the operation, with the consequent impact on stock prices (Martynova & Renneboog, 2008).

3.3. Empirical Models

Mackinlay (1997, p. 15) defines the AR by the difference between the observed return and the expected return of an action *i* at a given time *t*:

$$AR_{it} = R_{it} - E(R_{it} \mid X_t) \quad [1]$$

where $R_{it} = ln(P_{it}/P_{it-1})$ is the observed return, $E(R_{it} \mid X_t)$ is the expected return depending on the information X_t , P_{it} is the stock price *i* at the end of the period *t* and P_{it-1} is the price at the beginning of the period.

The market model allows to explain the expected returns of a stock due to the return verified in the (PSI-20 and IBEX-35) market index (Mackinlay, 1997, p. 18):

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad [2]$$

where α e β are parameters to be estimated, R_{mt} is the market return in period *t* and ε_{it} is the error or residue term, where $E(\varepsilon_{it}) = 0$ e $Var(\varepsilon_{it}) = \sigma^2_{\varepsilon i}$.

The manuscript uses an estimation window [-90; -30] prior to the announcement date and the event window [-1; +15], or [-1; +30] or [-15; +15] in days, according to the analysis. The market model is estimated by the regression between the observed returns of the stock and the observed returns of the market index during the 60 days prior to the event window of each operation, using the method of ordinary least squares (OLS). After estimating the parameters, the AR are calculated by:

$$AR_{it} = R_{it} - \tilde{\alpha}_i - \tilde{\beta}_i R_{mt} \quad [3]$$

where $\tilde{\alpha}$ is an unbiased estimate of α and to estimate $\tilde{\beta}$ the following adjustment is adopted to resolve the potential lack of synchronization between the dependent and independent variables (Leite & Sanvicente, 1995, p. 91):

$$\tilde{\beta} = \sum_{K=-1}^{1} \frac{\beta_k}{(1 + 2\rho_m)} \quad [4]$$

where β_k is the parameter estimated by the OLS method and ρ_m is the correlation coefficient between market index returns on consecutive dates. This adjustment provides a

beta slope coefficient with greater representativeness in relation to the assumptions of a general linear model (Corrar et al, 2004), as the indexes are always calculated and the stock price can do not be. Since *k* can lag -1, 0 or +1 days, three different regressions are estimated:

for $k = -1$ they are involved in the regression R_{it} and $R_{m,t-1}$
for $k = 0$ they are involved in the regression R_{it} and $R_{m,t}$
for $k = +1$ they are involved in the regression R_{it} and $R_{m,t+1}$

The AR is defined as a disturbance term that is calculated out of the sample. Under the null hypothesis H0 that the event has no impact on stock returns, the distributive properties of AR can be used to make inferences in any period of the event window (Mackinlay, 1997, p. 21):

$$AR_{it} \sim N(0\,;\ \sigma^2(AR_{it})) \qquad [5]$$

It is important to consider the accumulation of AR under two dimensions in order to make general inferences for the events of interest. Firstly, the accumulation over time for an individual title and, secondly, the accumulation between the titles over time. The concept of cumulative abnormal return (CAR) is necessary to accommodate a multi-period event window, between t_1 and t_2:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it} \qquad [6]$$

To increase the usefulness of the procedure, AR for individual stocks are incorporated through AAR from *N* events for a period *t*:

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \qquad [7]$$

and the corresponding variance given by:

$$Var(AAR_t) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma_{\varepsilon i}^2 \qquad [8]$$

The AAR can be accumulated for any interval in the observation window, being given by $CAAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AAR_t$ and the corresponding variance given by $Var\left(CAAR_t(t_1, t_2)\right) = \sum_{t=t_1}^{t_2} Var(AAR_t)$.

The test under the hypothesis H0 that abnormal stock returns are null, i.e. the M&A announcement has no significant positive or negative impact on abnormal stock returns, is calculated by:

$$\theta_1 = \frac{AAR_t}{\sqrt{var(AAR_t)}} \sim N(0\,;1) \qquad [9]$$

The empirical study also uses the method of Beaver (1968) to find out whether the announcement of a merger or acquisition operation causes a reaction (R) in the stock returns of the firms involved:

$$R = \frac{AR_{it}^2}{\sigma_{\varepsilon i}^2} \qquad [10]$$

where $\sigma_{\varepsilon i}^2$ is the variance of the residual calculated in the estimation window.

3.4. Results and Discussion

Figures 1 and 2 represent the evolution of CAAR limited to the post-announcement period [-1;+15] days for the bidders and target firms, respectively, involved in M&A operations in the Portuguese (PT) and Spanish (SP) markets. The previous period has been excluded as it may include speculative effects on stock prices driven by rumors of market integrations:

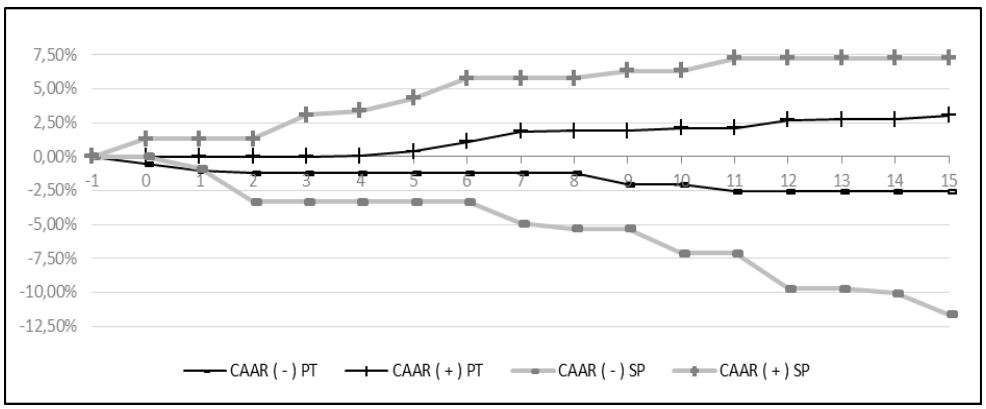


Fig 1: Cumulative Average Abnormal Returns (CAAR): bidders firms involved in each Iberian market, [-1;+15] days

The performance of firms involved in M&A operations is different between the two Iberian markets. Despite suffering earlier losses, Portuguese bidding firms accumulate slightly higher gains (+3.03%) than losses (+2.59%). Although winning early, Spanish bidders accumulate losses (-11.62%) greater than gains (+7.24%). The results for the M&A analyzed in the Spanish market seem to support hypothesis H1. This evidence denotes a net loss in stockholder wealth of the bidding firms, in line with the findings of Agrawal et al.

(1992), Hitt, et al. (2012), Braga & Gomes (2016) and Pandey & Kumari (2020), but diverging from the findings of Campa & Hernando (2006), Shah & Arora (2014) and Song, Tippett & Vivian (2017).

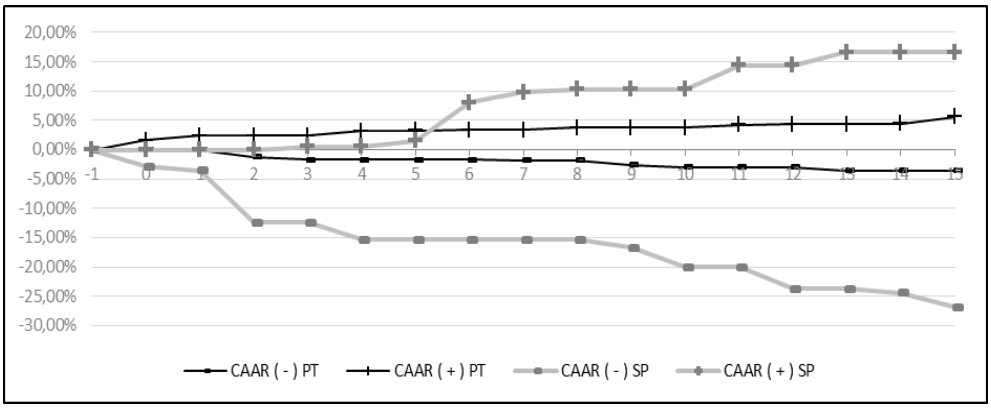


Fig 2: Cumulative Average Abnormal Returns (CAAR): targets firms involved in each Iberian market, [-1;+15] days

The Portuguese firms targeted in M&A operations accumulate gains (+5.57%) slightly greater than losses (-3.59%), while Spanish target firms accumulate significantly greater losses (-26.87%) than gains (16.67%). The results for the M&A analyzed in the Portuguese market seem to support hypothesis H2. This evidence denotes a net gain in stockholder wealth of the target firms, in line with the findings of Campa & Hernando (2006), Borges & Gairifo (2013), Shah & Arora (2014), Braga & Gomes (2016), Mall & Gupta (2019) and Pandey & Kumari (2020).

Notwithstanding the small impact of the M&A announcement on abnormal stock returns, in line with Kishore & Jindal (2017), Spanish investors penalize integration processes, especially the value of targeted firms. Even so, the results do not support a transfer of wealth from the investors of the bidding firms to those of the target firms, as found by Karamanos, Bakatselos & Agolli (2015).

Figure 3 represents the evolution of CAAR limited to the post-announcement period [-1;+30] days for all firms involved in M&A operations in each Iberian market.

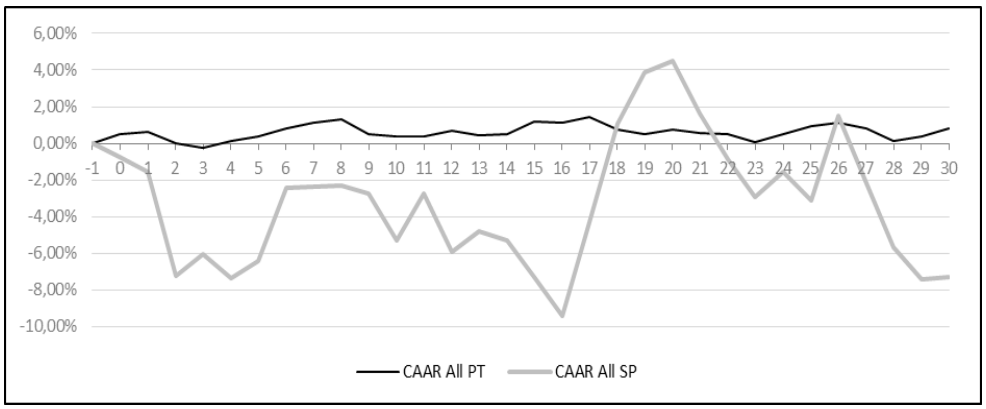


Fig 3: Cumulative Average Abnormal Returns (CAAR): firms involved jointly, [-1;+30] days

A broader analysis clearly identifies the accumulation of aggregate positive AAR in the Portuguese market and aggregate negative AAR in the Spanish market, corroborating the previous results. The continued expectation of the combination was valued by the Portuguese market during the 30 days following the M&A announcement, as reported by Kishore & Jindal (2017) and Karamanos, Bakatselos & Agolli (2015), maintaining a predominantly positive horizontal trend and seeming to support hypothesis H3.

The signal for the Spanish market highlights two distinct and almost always negative phases. Until day +16 there was an aggregate performance with downward trend in oscillation, showing peaks on days +2, +6, +12 and +16. After a substantial gain between days +18 and +21, the behavior shows CAAR oscillations in the range -3.10% to 1.53% up to day +27, declining thereafter to -7.26% at the end of the period. The fading trend of AAR over time was also recorded by Oswal and Goel (2020), although earlier.

Figure 4 represents the evolution of CAAR limited to the post-announcement period [-1;+30] days for bidding firms and target firms involved in M&A integrations in each Iberian market.

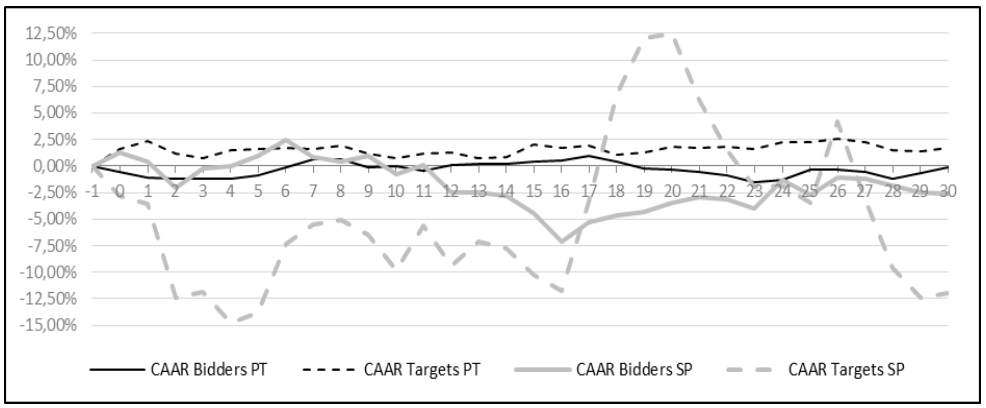


Fig 4: Cumulative Average Abnormal Returns (CAAR): bidders firms and targets firms, [-1;+30] days

The graphic signs of the two groups of firms in each market show different paths along the analyzed time window. In the Portuguese market, the CAAR of the target firms are always higher than those of the acquiring firms, while in the Spanish market the CAAR of the target firms only exceed those of the acquiring firms during the days +17 to +23 and +26. Furthermore, the announcement of the integration operation (days -1 to +1) in Portuguese market had clear implications in terms of AAR (+) in target firms and AAR (-) in bidding firms. This performance diverges from the results estimated by Amewu (2014), Karamanos, Bakatselos & Agolli (2015), Song, Tippett & Vivian (2017) and Mall & Gupta (2019) for the acquiring firms, and converges with the results presented by Varma & Sharma (2015) for the target firms.

On the other hand, after the announcement date, a level of relative stability of the CAAR stand out visually. This occurs almost simultaneously for Portuguese firms, from day +6 to +19, and for Spanish bidding firms, from day +7 to +11.

Table 1 presents the descriptive statistics for the subperiods of relative stability of the CAAR of firms involved in M&A integrations.

Table 1: Descriptive Statistics

Descriptive Stratistics	Portuguese Bidders *Days +6 to +19*	Portuguese Targets *Days +6 to +19*	Spanish Bidders *Days +7 to +11*
Average	0,23%	1,37%	0,33%
Standard deviation	0,40%	0,46%	0,72%
Autocorrelation	0,259	0,264	-0,174

Even so, in stagnation sub-periods the CAAR of bidding firms are closer to zero, suffer less variability, and are also interdependent. This predominantly stable trend of acquiring firms (mainly the Portuguese market) adds favorable evidence to support hypothesis H4.

Figures 5 and 6 represent the evolution of the reaction of AAR limited around the announcement date [-15; +15] days for the bidders and target firms, respectively, involved in M&A operations in the Portuguese and Spanish markets.

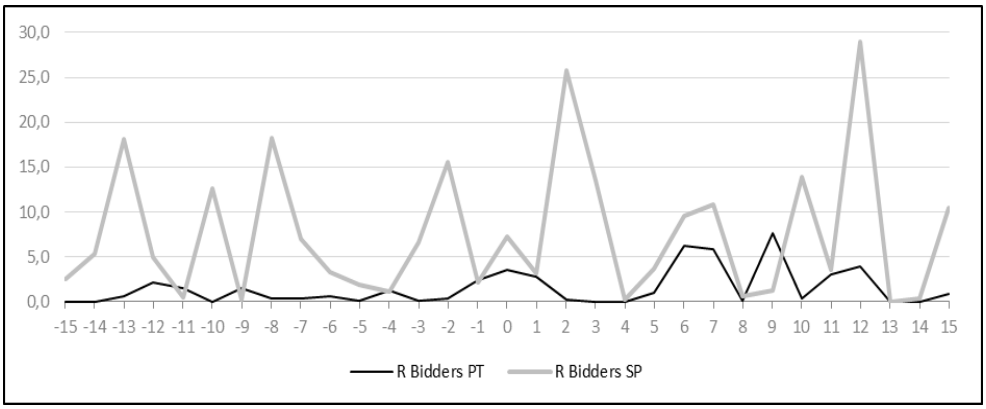


Fig 5: Reaction of Average Abnormal Returns (R): bidders firms involved in each Iberian market, [-15;+15] days

Until the announcement of the M&A transaction, in the Portuguese market there were no effects of relevant events. On the announcement date there is a strong reaction (3.55) in the AAR of bidding firms, with replicas most intense on days +6 (6.18), +7 (5.92),+9 (7.69) and +12 (3.97). This means that the market remains sensitive to news of integration operations.

In the Spanish market, the impact of the announcement on bidding firms is most noticeable on day +2 (28.80), although there was a more intense replica on day +12 (29.03). The peaks on days -13, -10, -8 and -2 could signify the existence of rumors about the evetual combination.

The impact of the M&A announcement in the Portuguese market is higher on the stocks of the target firms, whose AAR show very strong reactions on days 0 (23.49) and +2 (12.69). The peaks on -12 and -9 could mean that the market anticipates the integration operation.

In the Spanish market, the impact of the announcement on target firms is noticeable on day +2 (25.80), although there was a more intense replica on day +12 (29.03).

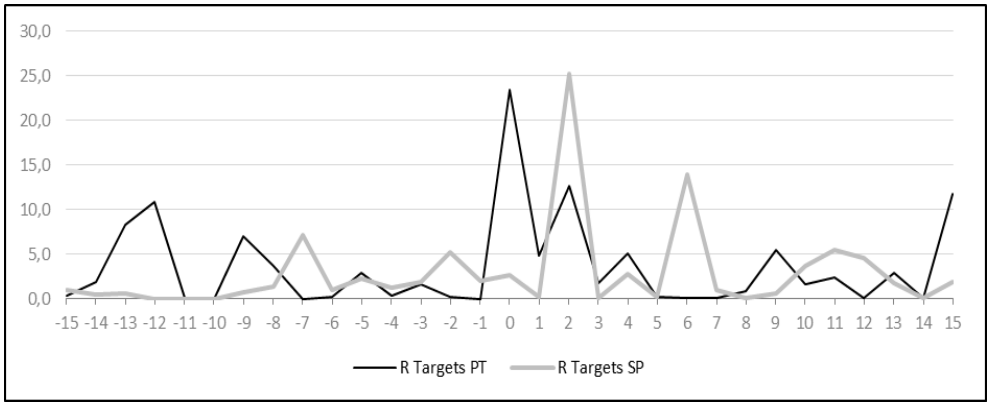


Fig 6: Reaction of Average Abnormal Returns (R): targets firms involved in each Iberian market, [-15;+15] days

The graphic configurations seem to favor hypothesis H5, as the announcement of M&A operations causes strong reactions in the returns of the bidding firms and – equally strong in both markets and more localized – in the returns of the target firms.

The hypothesis test complements the results of Beaver's methodology, which only identifies the existence of a reaction in AR. Under the null hypothesis H0 that the average abnormal returns are zero, the bilateral test is performed using θ_1 with significance $\alpha = 5\%$.

Table 2 presents the hypothesis test θ_1 for the AAR around the announcement date [-15 ; +15] of M&A operations concerning bidding firms, target firms, and firms jointly involved.

Table 2: Hypothesis test $\boldsymbol{\theta_1}$ for the Average Abnormal Returns (AAR): firms envolved in esch market, [-15;+15] days

Day	Teste $\theta 1$					
	Bidders PT	Targets PT	Joinly PT	Bidders SP	Targets SP	Joinly SP
-15	-0.159	0.622	0.571	1.596	-0.988	-0.527
-14	-0.217	-1.381	-0.889	**-2.322**	-0.660	-1.255
-13	0.785	**-2.881**	**-2.676**	**4.258**	-0.788	0.375
-12	-1.478	**-3.293**	**-3.444**	**2.223**	0.082	0.671
-11	-1.229	-0.340	-1.070	-0.748	0.038	-0.163
-10	-0.085	0.004	-0.053	**3.545**	0.009	0.953
-9	-1.256	**-2.638**	**-2.807**	-0.525	-0.863	-0.972
-8	-0.645	-1.920	-1.865	**-4.272**	-1.187	**-2.282**
-7	0.573	0.127	0.475	**2.654**	**2.662**	**3.272**
-6	0.806	0.458	0.877	1.817	-1.008	-0.487
-5	0.240	-1.720	-1.127	-1.368	-1.491	-1.801
-4	-1.138	-0.606	-1.209	1.092	1.125	1.375
-3	0.276	1.290	1.149	**2.562**	-1.355	-0.623
-2	0.652	-0.511	0.050	**-3.951**	**2.276**	1.141
-1	1.549	0.135	1.129	1.452	1.396	1.732
0	-1.884	**4.847**	**2.376**	**2.698**	-1.625	-0.847
+1	-1.670	**2.204**	0.542	-1.800	-0.421	-0.886
+2	-0.452	**-3.562**	**-2.965**	**-5.079**	**-5.023**	**-6.195**
+3	-0.084	-1.343	-1.060	**3.672**	0.329	1.295
+4	0.212	**2.244**	1.820	0.546	-1.660	-1.455
+5	1.000	0.437	0.990	**1.937**	0.508	1.006
+6	**2.486**	0.340	1.904	**3.083**	**3.739**	**4.426**

+7	**2.433**	-0.381	1.330	**-3.285**	0.994	0.082
+8	0.252	0.910	0.849	-0.799	0.266	0.044
+9	**-2.773**	**-2.329**	**-3.582**	1.097	-0.767	-0.447
+10	0.632	-1.295	0.550	**-3.724**	**-1.915**	**-2.838**
+11	-1.739	1.526	-0.012	1.901	**2.352**	**2.774**
+12	**1.994**	0.224	1.490	**-5.388**	**-2.136**	**-3.494**
+13	0.175	-1.697	-1.154	-0.015	1.312	1.260
+14	-0.022	0.333	0.234	-0.631	-0.383	-0.537
+15	0.928	**3.423**	**3.177**	**-3.230**	-1.385	**-2.195**

The critical values *c*, given by $\alpha/2$ and by $1-\alpha/2$ in the $N(0;\ 1)$ distribution, are equal to 1.96 and -1.96, respectively. Thus, the null hypothesis is rejected if the observed values belong to the critical regions $]-\infty\ ;\ -1.96[$ and $]+1.96\ ;\ +\infty[$.

Considering that the results in Table 2 for the Portuguese bidding firms on days +6, +7, +9 and +12 belong to the critical region, the reactions of their AAR are statistically significant. Furthermore, the signals from these results suggest value degradation on day +9 (-2.773) and value creation on days +6 (2.486), +7 (2.433) and +12 (1.994) for the stockholders of these firms. For Spanish bidding firms, the signs of the most expressive results suggest value degradation on days +2 (-5,079) and +12 (-5.388). These evidences justifies the representations in Figures 1 and 5.

Also according to the results in Table 2 for the Portuguese target firms, significant AAR reactions on days 0 (4.847) and +2 (-3.562) with gain and loss in value, respectively, are highlighted. For Spanish target firms, the signs of the most expressive results suggest loss value on days +2 (-5,023) and gain value on day +6 (3.739). These evidences justifies the representations in Figures 2 and 6.

Finally, the results show significant reactions in the AAR of firms jointly involved in M&A transactions. Closer to the announcement date, stocks of Portuguese firms show gains on day 0 (2.376) and losses on days +2 (-2.965) and +9 (-3.582). The stocks of Spanish firms show losses on day +2 (-6.195) and gains on day +6 (4.426).

The strong reaction of AAR to M&A announcements, more expressive in the stocks of the targeted firms, confirms hypothesis H5 in the Portuguese market. The strong reaction of AAR to M&A announcements partially confirms hypothesis H5 in the Spanish market.

4. Conclusion

The main objective of this paper was to investigate the impact of the announcement of M&A operations on the abnormal stock returns of firms listed in the Iberian market. The empirical study involved 29 integration operations carried out in the last 21 years, which were selected according to defined criteria.

Despite the signals from Portuguese market contradict the expectation, the results suggest a net loss of wealth for stockholders of bidding firms in the period [-1;+15] days. Furthermore, although the results suggest a net loss of wealth for stockholders of target firms, the signals from Portuguese market agree with the expectation.

On the other hand, although the performance of the AAR of Portuguese firms confirms the prediction, the evidence suggests an aggregate net loss for the stocks of firms involved in M&A. During the period [-1;+30] days, it was also found that gains start earlier and are

more consistent than losses in the Portuguese market. This can be justified by the expectation that the success of the combination will create market value in the future.
The study also indicates that the AAR of the Portuguese firms (especially the acquirers) and the Spanish bidding firms tended to stabilize around a week after the announcement date (from day +6/7), fallowing the phase of greatest agitation, as long as no new information appears on the market.

In a broader analysis, during the period [-15;+15] days, the results showed some reactions before the M&A announcement date (especially from Spanish bidders), denoting the existence of rumors about the corporate combinations. The replicas after the announcement denote the expectation that the M&A will imply some appreciation (except on day +9) in the stocks of Portuguese firms and some devaluation (except on days +9 and +11) in the stocks of Spanish firms. Even so, the reactions are very strong in the returns of the bidding firms and – equally strong in both markets and more localized – in the returns of the target firms in the vicinity of the M&A announcement date.

The main limitation of this work derives from the small number of listed firms involved in M&A processes, which is justified by the very dimension of the Iberian market. Furthermore, between 2015 and 2020, no restructuring operation was identified between listed companies.

For future research it is suggested to reinforce the sample size, involving, for example, the operations that took place in the European market. Another possible expansion could relate to the influence of the SARS-Cov-2 pandemic on the AR derived from M&A operations, in view of the possible cooling of the stock exchange markets.

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Appendix 1

Sample Firms

M&A operations with firms listed on the PSI-20			M&A operations with firms listed on the IBEX-35		
Acquiring Firms	**Target Firms**	**Announcement Date**	**Acquiring Firms**	**Target Firms**	**Announcement Date**
Semapa	Portucel	15/05/2001	Banco Bilbao Vizcaya	Telefonica	11-02-2000
Portugal Telecom	PT Multimédia	28/09/2001	Banco Bilbao Vizcaya	Telefonica	02-06-2003
Sonae Sgps	Sonaecom Sgps	29/04/2002	Banco Bilbao Vizcaya	Banco Santander	30-12-2003
Sonae Sgps	Portucel	23/12/2002	Banco Bilbao Vizcaya	Telefonica	13-04-2006
BPI	Sonae Sgps	17/10/2003	Iberdrola	Gamesa Corporacion	05-10-2007
BPI	Banco Comercial	13/02/2004	Banco Bilbao Vizcaya	Gamesa Corporacion	07-03-2008
Semapa	Portucel	06/07/2004	Banco Santander	Gamesa Corporacion	12-03-2008
Semapa	Portucel	15/11/2004	Banco Bilbao Vizcaya	Repsol	08-05-2009
Banco Comercial	Ibersol	11/03/2005	Iberdrola	Gamesa Corporacion	12-02-2010
Sonaecom Sgps	Portugal Telecom	06/02/2006	Banco Bilbao Vizcaya	ACS Actividades Construccion Y	20-05-2010
Banco Comercial	BPI	13/03/2006	ACS Actividades Construccion Y	Iberdrola	02-09-2010
Sonaecom Sgps	Portugal Telecom	11/05/2006	Banco Bilbao Vizcaya	Repsol	10-01-2011
Banco Comercial	INAPA	31/07/2006	Banco Bilbao Vizcaya	Telefonica	01-05-2011
Banco Comercial	EDP	02/08/2006	Banco Santander	Ferrovial	16-11-2011
Semapa	Portucel	14/11/2006	Corporacion Financiera Alba	Indra Sistemas	19-12-2011
Banco Comercial	IMPRESA	23/11/2006	Repsol	Gas Natural SDG	27-06-2012
BPI	PT Multimédia	11/07/2007	Grupo Ezentis	Amper	08-10-2012
BPI	Banco Comercial	25/07/2007	Corporacion Financiera Alba	Ebro Foods	30-01-2014
Semapa	Portucel	18/09/2007	Corporacion Financiera Alba	Viscofan	01-05-2014
BPI	Sonae Sgps	15/11/2007	Corporacion Financiera Alba	Indra Sistemas	31-10-2014
BPI	GALP	10/01/2008	Banco Santander	NH Hotel Group	23-12-2014
Martifer	EDP	16/05/2008	Corporacion Financiera Alba	ACS Actividades Construccion Y	31-12-2014
Cofina SGPS SA	ZON	14/11/2008	Telefonica	Indra Sistemas	28-01-2015
Semapa	Portucel	20/11/2008	Banco Popular Eepañol	General de Alquiler de	29-05-2015
Semapa	Portucel	03/03/2011	Telefonica	Promotora de Informaciones	27-11-2015
Semapa	Portucel	05/01/2012			
Sonae Sgps	Sonaecom Sgps	27/08/2013			
Sonae Sgps	Sonaecom Sgps	22/04/2014			
Banco Comercial	Pharol Sgps	12/08/2015			