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Does M&A create value for acquiring shareholders?

Evidence from the Brazilian Market

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1. Abstract

This paper investigates the performance of corporate takeovers in the context of Brazilian public acquirors, from the beginning of the 21st century to the most recent years. The study shows that, on average, Mergers and Acquisitions are expected to create value for the bidders around the announcement of a transaction, regardless of the historical period, with a significant improvement in returns after the financial crisis of 2008.

Some of the takeovers' characteristics that contribute to explain the share price performance of bidders are: i) the size of the acquiror, which negatively affects return; ii) Price to Book value, when high suggests an overvaluation of the target, leading to lower returns iii) Return on Assets (ROA), companies that experience higher profitability pre-transaction are more likely to experience positive returns; iv) relative size, the greater the size of the target compared to the bidder, the higher the returns.

Overall, the evidence obtained represents a statistically significant sample that is consistent with some of the most relevant and recent academic studies around corporate takeovers, which relate the mentioned increase in returns to improvements in corporate governance.

2. Introduction

Each year trillions of dollars are invested by companies in Mergers and Acquisitions (M&As). In the last 13 years, on average, companies were involved in $3.68tn worth of transactions each year[1].
Given the material relevance of these transactions among firms' investment choices, M&As have historically drawn the attention of researchers, who tried to understand whether the decision to grow inorganically creates or destroys value for the shareholders of the companies involved, and which factors drive their success, or their failure.

Historically, M&As have been highly concentrated in developed countries and, as a consequence, most of the previous academic studies have focused on those countries which have developed financial markets, like the United States and the United Kingdom, especially regarding those studies that involved M&A transactions which took place in the 20th century, the lack of information for less developed countries has brought the attention to more mature markets. Although, starting in 2001, the share of global M&A transactions involving companies from emerging markets has started to significantly increase, going from a weight of 5% in 2001 to a weight of 20% in 2012. Furthermore, the BRICS countries significantly increased their weight over the global GDP, going from a 18.1% in 2000 to 32.1% in 2023, a share of global GDP that is higher than the G7 countries (which accounted for 43.4% and for 29.9% of global GDP in 2000 and 2023 respectively)[2], thus, partially starting to draw the attention of researchers. Nevertheless, despite the recent increase in interest for M&As in emerging markets, this topic is still virtually unexplored by the academic research.

Regarding M&As in the developed markets, many studies have been performed, to try and determine whether these operations increase or decrease value for the shareholders of the involved entities, through the analysis of Cumulative Abnormal Returns (CARs). Alongside the increase or decrease in shareholders' wealth, through an analysis of CARs it is possible to determine the expectations that the market projects over M&As. Therefore, this type of analysis has a crucial role in explaining the reasons why companies undertake M&As. In fact, although most of the literature unanimously states that M&As do create value for targets' shareholders, expressed in the form of the premium they receive, the vast majority of studies shows that M&As do not create value for acquirors' shareholders, suggesting that M&As are expected to be value-destroying. Therefore, under the assumption that M&As are value-destroying activities, why does these transactions are such a common practice? The most used explanation by the management of acquiring companies is related to the integration of the two businesses, that will lead to the creation of synergies, and an increase in the value of the combined entity.
Although, it was proven that indeed there are management incentives to undertake these activities, and the majority of past academic studies suggest that these are the real reasons why companies undertake M&As.
In fact, through M&As, the management can quickly and effectively increase the size of its company, thus increasing the prestige of its position, as well as its compensation (the so-called empire building theory). Another widely used explanation is that the acquiror's management might just believe that the target company is undervalued under its current management. Therefore, a change in control would bring to an enhancement in the value of the combined entity and would also be a proof of the strength of acquiror's management (so-called management's hubris theory).

[1] https://dealogic.com/insight/ma-highlights-fy22/
[2] https://www.statista.com/statistics/1412425/gdp-ppp-share-world-gdp-g7-brics/

In a revolutionary study, though, Alexandrinis et al. (2017) show that after the Global Financial Crisis (GFC) of 2008, the pattern around M&As has significantly changed. In fact, by comparing M&As which took place from 1992 to 2009 and those which took place after 2019, they spotted a significant change in the abnormal returns that companies record nearby M&As announcements, thus suggesting that companies are getting better at M&As, and that the market positively welcomes such transactions.

The purpose of this study is to try and provide a comprehensive picture of the M&A market in Brazil, which represents one of the most important emerging markets in the world, as well as one of the least studied. In fact, most of the studies focus on the fastest Chinese market, and lately on the Indian one. Despite the growing importance of Brazil among the EMs, and despite it being the biggest financial hub in South America, in the last 10 years few studies have focused on determining whether the announcement of M&As create value for shareholders, which can also be considered a test of market efficiency. The most recent studies on M&As in BRICS countries have focused more on the determinants that drive transactions' volume rather than focusing on testing the market's reaction to the announcement of a transaction, thus testing shareholders value creation and market efficiency. Instead, regarding those studies that focused on the value created through M&As, the sample used was not big enough to allow some statistically significant conclusions. Hence, those results might be affected by the small number of observations, which could lead to conclusions biased by the deals' selection process.
Given that most of the attention of academic studies has always focused on developed markets, rather than on Emerging Markets, and given the lack of studies especially for Brazil, the main contribution of this paper would be to provide a picture of whether M&A creates value or not in this specific market. Furthermore, this study would start from the conclusions of Bortoluzzo et al. (2012) and Simoes et al. (2012), and will strengthen their results, by deploying a bigger sample, including all the M&A transactions for which information was available, from 2002 to 2022. This procedure should allow to obtain stronger and more significant results.
Moreover, being Brazil the biggest financial hub of South America, with a broader and more international investor composition, it would be expected that the Brazilian stock market would behave similarly to the developed markets, thus creating value for shareholders around the announcement of M&As, consistently with Alexandrinis et al. (2017), Bortoluzzo et al. (2012) and Simoes et al. (2012), and in contrast with most of the studies on M&As in EMs, which will be later outlined in this paper.
Finally, since Brazil represents one of the most developed countries among the EMs, but still less mature than more developed markets like the US and the European ones, studying the behavior of its financial markets can help understand the current status, project where its market might go, becoming more and more mature, and can also be helpful in understanding where other emerging markets (especially South American ones) might find themselves in a couple of years time.

The first main research question that this paper will try to answer is to determine whether M&As in Brazil yield value enhancement for the shareholders of acquiring firms. Furthermore, through a comparison with the results of Alexandrinis et al. (2017), it was possible to make a comparison between M&As in Brazil and in developed countries, to check whether the former outperformed or underperformed its developed peers.
However, the scope of the analysis will then shift to a second research question, which will focus on deal-specific and company-specific characteristics which can impact the CARs, in order to determine whether there are some specific characteristics which can allow an improvement in the shareholders' value-creation.

By answering the above-mentioned research questions, through the proposed methodology, this paper aims to provide a tool for the management of Brazilian companies during the development of an M&A strategy. In fact, given its broader sample, this paper can be utilized as a starting point for reflection to increase the likelihood of success of the potential transactions.
First and foremost, if the market efficiency assumption is verified, managers could gain more confidence that the market will not react negatively to the announcement of a transaction. Secondly, by answering the second research question, which will determine the deal-specific and company-specific characteristics that allow the deal to be value-enhancing for acquiring shareholders, it will be possible to assist the managers in the target selection process. In fact, through the proposed results, managers will be able to access a comprehensive set of characteristics, with the respective effect on share price at announcement, that could provide a guidance on the targets that are worthy to be considered, and those that would be value-destroying.
Furthermore, since the resources available to management are limited, and most of the times a company's broader strategy includes multiple objectives (e.g., developing a competitive advantage in the national market, through cost structure enhancements, while undertaking an internationalization plan), through an analysis of the results of this paper it would be possible for managers to have a guidance on resource deployment, and determine which objectives should be obtained by the means of M&A, and which objectives should be obtained through internal developments. For example, if the results suggest that share price reaction is higher at the announcement of a cross-border deal, compared to a synergistic national deal, then it would be more value-accretive for shareholders if resources were deployed on the cross-border deal. The management should then decide to allocate resources accordingly, and try to develop synergies internally, thus maximizing shareholders' value.

In order to answer these questions, the paper firstly analyses whether, overall, M&As have created value for acquirors' shareholders in a timeframe going from 2002 to 2022. Then, following an approach similar to Alexandrinis et al. (2017), a comparison is performed between those deals which took place before the GFC and those which took place after. Furthermore, a specific focus is dedicated to mega-deals and public deals, which in developed countries have historically registered more negative performances compared to private deals. Secondly, to answer the second research question regarding the specific characteristics, a multivariate analysis on multiple characteristics was performed, to determine which of those are value-enhancing and which are value-destroying.

The paper is structured as follows. Section 2 depicts the existing literature regarding M&As, firstly by looking at some of the most prominent research for developed countries, and then moving to those analyses that are specific to emerging markets. Then, Section 3 provides an explanation of the methodology employed, both for the event study and the multivariate analysis. Section 4 explains the data collection process, and provides a summary statistic of the sample, alongside its characteristics. Section 5 reports the results of the two-analysis performed, providing an explanation for the results, and finally Section 6 provides a summary of the paper and the results obtained.

3. Literature Review

Mergers and Acquisitions are among the most important investment decisions of a company's lifecycle. Such decisions can substantially change the business and the structure of the companies involved, in terms of financial structure, business model, and shareholders' base.
These transactions are often very complicated to structure, as the process can be very costly and time consuming. Therefore, given their non-triviality, companies often have to appoint legal and financial advisors, in order to correctly evaluate the terms of the transaction and ensure that the shareholders get the best possible deal.

Despite the popularity of M&As among companies, and the vast amount of time and resources invested to analyse these transactions, it is still not clear whether the decision to undergo a Merger or an Acquisition is value-creating for shareholders.

In order to analyse the impact of M&A deals on bidders and targets, researchers mainly utilize two methodologies: event studies and accounting studies. The former analyses the share price of the companies at the date of deal announcement, and its movements going forward, to understand the reaction of the market based on Cumulative Abnormal Returns (CARs). The latter focuses on reported financial results of acquirers before and after the deal, to understand the impact of the deal on the operating performance of acquiring companies.
The section above will delve into the existing body of literature concerning event studies, involving the examination of key research paper on this subject, aiming to provide an overview of the insights that these empirical results propose.

3.1 Why do companies merge?

With the term Mergers and Acquisitions, both the academic researchers and the professionals, refer to an event that involves two or more companies, that decide to integrate to form one entity. An M&A transaction might take the form of a merger, or an acquisition. In the former, two companies decide to merge, and the shareholders composition of the two entities would be the same with each shareholder holding a pre-determined percentage of the merged entity, as per merger agreement. In the latter, instead, the shareholders composition would be different, as one entity, the acquirer, would buy all of the shares of the other entity, the target. In this scenario the shareholders of the acquirer will own both the shares of the acquirer and of the target.
There are three main categories of M&As: i) vertical: the company moves along its supply chain, integrating its operations either with a supplier or a customer; ii) horizontal: the company remains in its segment of the supply chain, thus buying a direct competitor; iii) conglomerate: the company buys/merges with a company that operates in a different industry.
As to why a firm might decide to undertake a merger or an acquisition, multiple reasons can be found, and not all of them can be considered virtuous. The most common reasons to undertake an M&A can be found in the creation of synergies, which falls under the "Value Creative" reasons. Although, synergies do not always materialize, as managers might overestimate them, or might overestimate their ability to integrate the two entities involved in the transaction. In the latter context fall the "managerial self-interest" reasons.

Value Creative
The first and most important argument to explain how a deal will create value is efficiency enhancement, mainly obtained through synergy generation. Bhide (1993), analyzing the rationale behind a sample of 77 acquisitions between 1985 and 1986, showed that synergy was the primary reason in one-third of them.

Synergy is the additional value that is generated by combining two firms, creating opportunities that would not been available to those firms operating independently (Damodaran, 2005). Thus, it is the value coming from the incremental cash flows generated by the combination of the two businesses, that brings the valuation of the combined entity over and above the sum of the standalone values of the companies.
It is possible to identify two different groups of synergies: operating and financial. The former mainly manifest as higher expected cash flows, while the latter may manifest both as higher cash flows and as lower cost of capital (hence lower risk).
Operating synergies are improvements, mainly related to the core business of the company, that allow the company to increase its profitability or to exploit complementary resources and knowledge, improving the future growth rate of the combined entity.
The most common forms of operating synergies are economies of scale, obtained sharing physical assets or resources, avoiding duplicated effort. Economies of scale can manifest as a reduction in the cost of goods purchased, thanks to higher bargaining power over suppliers and volume discounts.
The improvement in bargaining power of the combined entity will not be limited to suppliers and may apply to customers as well. Thanks to an increased market share and a reduced competition, the firm may be able to command higher selling prices, realizing revenues synergies.
Another common reason to undertake an M&A transaction is to enter a new market or industry by exploiting the better knowledge of the target, or to innovate by acquiring a company with unique technologies (Chen & Pan, 2019).
Financial synergies are mainly related to the characteristics of the combining companies before the transaction. These can show up as an increased debt capacity thanks to more stable and predictable cash flows, tax benefits when a profitable company acquires a company with accumulated net operating losses, and diversification.

Managerial Self-Interest

One of the main reasons why M&As end up being value-destroying for shareholders is related to agency problems. Managers may decide to pursue acquisition with the sole purpose of improving their prestige by quickly increasing the size of the company, as managing a bigger company is seen a sign of strength and is closely related to higher compensation packages.
In addition to compensation, as firstly suggested by Roll (1986), managers might be overconfident in their skills, and this could lead them to believe that they could better manage the target company, thus unlocking a hidden value from it. Malmendier and Tate (2008) discovered that when management is indeed characterized by overconfidence, there is a tendency to misvalue their targets, overpaying for them and thus destroying value for their shareholders.
Furthermore, whenever a company holds excess cash, the management might be pressured to invest this excess cash. This pressure could lead them to undertake projects that are not value-creating, but that have the opposite effect and turn to be value-destroying for shareholders in the long-term. Consequently, the management, that should always have as a priority shareholders' value creation, should carefully consider whether paying a dividend or undertaking a share repurchase program wouldn't be create more value for the shareholders. It is clear here the potential agency problem, as managers who are sitting on excess cash might prefer to increase the size of the company, increasing their prestige, instead of issuing an extraordinary payment of dividends. On this regard are crucial potential corporate governance measures to align management and shareholders' interests, for example tying management's compensation to the long-term performance of the company.
Lastly, managers might undertake M&As to protect their positions. Growing the company through M&A will increase the size of the company, making an hostile takeover from a third

party more expensive. Furthermore, most M&As have a debt component, and leverage might considerably increase in the short-medium term. Additionally, execution and integration risks emerge in the short/medium term, thus making the company less attractive to potential buyers. All these factors can contribute to secure management's job in the foreseeable future, but could be detrimental to shareholders' value creation, especially if leverage becomes too high, or expected synergies do not materialize because managers overvalued their capacity of extracting value from the integration.

3.2 Short-Term effects on shareholders' wealth following M&As

In order to assess the impact that M&As have over shareholders' wealth, together with the expectations that the market places on these transactions, it is common practice in the literature to employ methodologies that aim to assess whether around the announcement of M&As the shares of the target and the acquiror encounter "Abnormal Returns". In order to determine whether a return can be considered "Abnormal", an analysis of the CARs is required, through the mean of an event study.

The literature on event studies unanimously states that there is significant value creation for target shareholders, regardless of size and geography of the sample, historical period and form of payment. Though, based on different merger waves, a difference can be found in the return obtained by target shareholders, with an upward trend.

By analysing a sample of 2,419 European M&A deals from 1993 to 2001 Martynova and Renneboog (2011) found that, on the announcement date, the share price of target companies obtained CAARs[1] of 9.13%, while on a 4-month window, the CAARs amounted to 26.70%.

Consistently with the above results Netter et al. (2011), on a sample of US M&A deals from 1992 to 2009, obtained that target CARs are always significantly bigger than 0, ranging from a minimum of 13.8% in 1997 to a maximum of 33.20% in 2008. This value further increased in the 2010s, where it amounted on average to 29.32% (Alexandrinis et al., 2017).

Therefore, it is clear that the shareholders of target companies obtain significant gains in the M&A process, thanks to the premium they get paid for selling their shares.

As anticipated, regarding bidders' returns, past studies obtained ambiguous results.

Martynova and Renneboog (2011) discovered that CAARs of acquiring firms' share price, over a 4-month window, are significantly negative and equal to -2.83%, suggesting a negative expectation of the market over the value creation capability of the M&A deals. The CAARs are even more negative in the case of a cross-border deal (-3.63%) compared to domestic deals (-2.49%).

In contrast, Netter et al. (2011) show that, over a sample of 67,301 observations between 1992 and 2009, bidders' 3-day CAARs are never negative, but they do show a negative trend, going from a high of 1.8% in 1992 to a low of 0.6% in 2007. Nevertheless, there is no year in which the percentage of negative CAARs over the sample are more than 50%. Therefore, these results show that the bidders' CAARs are more positive than negative in each year, suggesting a positive reaction of investors to M&As announcements. In addition, Netter et al. (2011)'s results show that the only case in which bidders' returns are significantly negative (-1.0%) is in the case of mega[2] deals. This type of deals, despite accounting only for 2% of total number of transactions, accounted for 70.8% of the reported value.

Even though the authors do not find a clear explanation to the downward trend in bidders' CAARs, a plausible explanation may be found in the analysis of Moeller et al. (2005), where it is shown that, over a sample of M&As from 1998 to 2001, acquiring shareholders lost 12 cents for every dollar spent in M&As. Although, the aggregate losses are so large because of a small

number of acquisitions, which represent the bulk of the dollar value, but a small percentage of the total number of acquisitions. Removing these deals by the sample, M&As would have been value creating for acquiring shareholders.

In a more recent study, Alexandrinis et al. (2017) found that public deals taking place after 2009 show a significant improvement in the bidders' CAARs, suggesting a correlation between the Global Financial Crisis (GFC) and the quality and efficacy of bidders' investment decisions. The results of the analysis, over a sample of 4,194 deals, shows that bidders' CAARs between 1990 and 2009 are negative (-1.08%), while those from 2010 to 2015 are significantly positive (+1.05%). These results are a clear turning point for the M&A literature, as they seem to suggest that the market now welcomes M&As. The explanation for this change is that after the shock of the GFC, which brought firms to improve their corporate governance models, bidders are getting better at choosing and integrating their targets, creating more value for their shareholders.

Together with the analysis of CARs, researchers often stress their attention to some key characteristics of the deals, which are believed to impact the results of M&A transactions, and thus the CARs. While there is unanimity in affirming that the private status of the target allows the bidder to create more value, there are differences in the findings related to the effect that the method of payment has on the value creation, and especially on the expectations of the market.

In fact, historically, stock for stock deal were believed to bring lower returns, both to targets' and bidders' shareholders. The reason lies in the asymmetric information between managers and shareholders. According to Myers and Majluf (1984), who were the first to postulate the "pecking order theory"[3], managers are more prone to use equity as form of payment when they believe the shares of their company are overvalued. Hence, in the case of equity transactions, the market adjusts the price of the shares downward, according to the belief that the shares are overvalued.
Martynova and Renneboog (2011), coherently with the pecking order theory, found that during the 1990s, all-cash deals generated higher returns than equity-financed deals, both for bidders' and targets' shareholders. The former, over a period of [-60, +60] days, generated CAARs of -0.9% in the case of all-cash deals and -2.16% in the case of all-equity deals, while the latter generated CAARs of +32.78% for all-cash deals, and 18.16% for all-equity deals.
Studies on more recent transactions, though, tend to shift from the pecking order theory, moving towards the idea that using shares as a form of payments allows overvalued firms to create value for their shareholders (Savor and Lu, 2009). In fact, from 1992 to 2009, the deals associated with the highest CAARs were those in which shares were used in a higher percentage than cash as form of payment (Netter et al., 2011). Alexandrinis et al. (2017) in accordance with Savor and Lu (2009) found that, together with an improvement in value creation for bidders, in the period from 2010 to 2015 the CAARs for all share deals were positive (+0.19%) and significantly higher than those in the period from 1990 to 2009 (-2.11%).

Similarly to stock for stock deals, public deals historically experienced negative returns compared to private deals. In fact, since private companies are not publicly traded, they are expected to trade at a discount, i.e. ("illiquidity discount"), which allows the acquiror to lower the overall cost of the transaction, allowing it to obtain a gain from the transaction, thanks to a

[3] In their study, Myers and Majluf postulated that managers tend to follow a hierarchy when making financing considerations. Their study revolves under the two assumptions that: debt is considered as a risk-free financing instrument and should always be preferred to the issuance of risky assets, like equity; the managers, who have superior information of the value of their company, tend to act in the interest of old stockholders' interest. Hence, whenever the company decides to issue new shares, the market will be led to think that either the company lost the ability issue less-risky assets, and might be undergoing some type of distress, or that the managers believe that the company is overvalued and, acting in the best interest of old shareholders, are trying to maximize their shareholder value, to the expense of the new shareholders. To compensate the asymmetric information arisen, new shareholders will require a higher return, putting downward pressure on the share price.

higher exploitation of synergies, thus generating positive expectations on the market. Differently, when the company is publicly traded, acquiror's experienced negative CAARs, and projected negative expectations on the market. The main reason for that is related to the size of the target, which will imply a more complex post-deal integration, along with an increased attention from the financial community, given the public status of the companies, and the level of disclosure of information. Furthermore, given the narrow level of disclosure surrounding private firms, Capron and Shen (2007) suggest that acquirors tend to prefer a private M&A to a public one when they are more confident in the capability of assessing the value of the target. Factors that increase acquiror's confidence are: past transactions experience, alongside prior knowledge of the business and the geographical markets in which the target operates. Therefore, the higher degree of caution put in place for private deals might inspire more confidence in the shareholders that the target was fairly valued. Consistently, Moeller et al. (2005), in their analysis of a sample of 6,596 transactions which took place from 1980 to 1997, found that the characteristic of public target is negatively correlated with shareholders' wealth, the negative relationship is statistically significant at the 1% significance level. This result is perfectly consistent with the results of Alexandrinis et al. (2017), who found that for the period going from 1990 to 2009 acquirers experienced negative returns equal to -1.08%. Although, this study also suggests that through time companies are considerably improving at M&As, showing that acquirors that were involved in public deals after 2009 encountered a positive return of 1.05%, showing an improvement in returns of 2.13%.

3.3 Emerging Markets

Vissa and Thenmozhi (2022) analysed the determinants of mergers and acquisitions volumes in BRICS countries. Their analysis revolves around the examination of 3 macroeconomics variables, that are: i) liquidity, represented by the ratio of the money supply (M3) to GDP; ii) international competitiveness of exchange rate; iii) innovation, measured as the ratio of R&D spending to GDP. The analysed sample consists of 65,673 M&A deals, spread across the 5 BRICS countries, and including domestic, inbound, and outbound M&As. Overall, the three variables all positively impact the volumes of M&As in the BRICS countries, albeit with some differences. Regarding the liquidity variable, the higher the level of liquidity injected in the country, the higher the confidence of economic growth, bringing domestic deals, thus investments in the home country, to follow this belief. Following, the results suggest that the stronger the exchange rate, the more convenient it is for BRICS' companies to undertake domestic and outbound deals. Finally, the study finds that the higher the innovation in the country, the higher the volume of domestic and outbound M&As, implying that the higher level of innovation reflects the readiness of BRICS countries to participate in the global markets, and that acquiring knowledge and expertise externally might accelerate this process.
Similarly to the above, Kumar et al. (2023) in their analysis made a comparison between the effects of macroeconomic factors and M&As, trying to derive which of these factors can influence the M&A deal flow. Regarding the BRICS countries, the results concerning the effects of the competitiveness of the exchange rate are similar to those obtained by Vissa and Thennmozhi (2022). A stronger exchange rate brings to a greater volume of domestic and outbounds M&As, while to a weakening exchange rate follows a decrease in deal flow. In addition, this more recent study shows that to an increase of 1% in inflation follows an increase of 0.53% in the M&A abandonment rate. Similarly to the effects of the exchange rate, to an increase in interest rates follows a significant increase in domestic and outbounds M&A. This is not surprising, as economic theory suggests that increased interest rates can strengthen the home currency with respect to foreign currencies. Finally, GDP has positive and significant effects on domestic, inbound and outbound M&As, suggesting that the wealthier the home country, the

more resources are available for M&A (domestic and outbound), and the more reliable is the country when it comes to foreign investments (inbound M&A).

Regarding shareholder returns, whether for developed markets the results are clearer, this is not the case for emerging markets, as there are significant differences based on the geography of the sample.
Bertrand and Betschinger (2012) found that in Russia, acquisitions which took place in the period from 1999 to 2008 destroyed value for shareholders, and this is true both for cross-border acquisitions, and for domestic ones. Though, their results also show that acquiring internationally in countries that belonged to the Soviet Union reduces the negative impact of M&As for Russian bidders, suggesting that a better knowledge of targets' culture, and its market, allows a better integration and post-deal performance. Therefore, despite emerging markets' companies may faster acquire knowledge, skills, and an international presence, by acquiring companies from developed countries, these type of transactions are not welcomed by the market, suggesting that the benefits coming from a faster growth do not counterbalance the negative expectations related to geographic distance, cultural differences, and post-deal integration difficulties.

Papadakis and Thanos (2010), analysing a sample of 61 domestic acquisitions by Greek listed companies, obtained negative results as well, through three different methodologies. Their analysis shows that in 52% of the observations CARs were negative for bidders, and in 50% of the observations accounting metrics decreased after 2 years from the acquisition. Furthermore, they involved the top managers of the companies in the sample, to compare their expectations pre-deal and the actual results. In 60% of the cases the managers affirmed that the acquisition did not generate the expected results. Therefore, the main results of the latter study suggest that in an emerging market like Greece, not only M&As do not generate positive expectations at announcement, seen by the negative CARs, but they also negatively affect the profitability of the company, and consequently its competitiveness in the domestic and international markets.
Zhu and Malhotra (2008), analysing a sample of 66 Indian companies acquiring US targets, from 1999 to 2005, found that acquirors in this case too experience negative CARs. Interestingly, they assign the negative effect not to an informational reason, rather to what they define as "Price pressure", which consists in an abnormal return, caused by a sudden change in supply or demand that then reverses its abnormal trend in a short time window. Consequently, they found that around the announcement date (-2, +2) the acquirors experience positive CARs (equal to +3.2%), caused by the overreaction of the market and the shareholders, which believe that the deal will bring higher efficiency, alongside reputational improvements, thanks to the status of the development of the US's target. Although, this trend reverses significantly in the (-5, +20) window, to reach a value of -3.1%, suggesting an initial overreaction of the market.
Even though the pattern seems to suggest that Emerging Market countries are not able to create value through M&A, a big outlier can be found among the BRICs, that is China. In fact, almost unanimously, past research shows that Chinese companies undergoing M&As are able to unlock significant positive abnormal returns for their shareholders, especially when the transactions involve Cross-Border targets. Tao et al. (2016), in their analysis of 165 Chinese Cross-Border M&As, found that significantly positive CARs of + 1.22%, are obtained in in the event window (-1, +1). Therefore suggesting that investments in foreign countries is welcomed for the Chinese market, which sees the Cross-Border deal as an opportunity to quickly acquire new knowledge and skills to exploit to obtain competitive advantages and become global players, thus matching the ambitions of China's government and Chinese economy to become a global financial power. More on this point, they show that CARs are higher for those M&As which involve targets from politically stable countries, while CARs are lower when the transactions involve targets from

more instable countries. Thus showing that, indeed, CARs are higher when acquirors can experience a better and safer learning environment.

Alongside China, Brazil represents a case where M&As do create value, according to past studies.
Bortoluzzo et al. (2012), to determine whether cross-border M&As create value for acquiring companies, analysed a sample of Brazilian cross-border M&As from 1994 to 2008, and reached the conclusion that cross-border indeed are value creative. Their results also show that this practice created more value for those acquirers that had previously undertaken cross-border M&As, suggesting that there is some form of learn-by-doing. In this context cross-border M&As unlock value for shareholders by accessing new resources and new knowledge. The greatest scope of value creation arises when acquiring companies from developed countries, as best-practices and highly valuable information can be obtained. At the same time, acquirers that undertake multiple M&As simultaneously show a lower performance, due to the difficulties in coordinating and integrating all the targets.
Simoes et al. (2012) in their analysis found a strong statistical significance that value is created for acquiring shareholders in the day of the announcement, in the form of abnormal returns. For no other of the remaining days analysed a statistically significant result is found. Their results suggest that Brazilian capital markets are efficient, as the market immediately adjusts the price to reflect the new information added, and then price behavior returns to normality after the announcement. Although, one of the reasons for such results could be found in the small sample, of 28 observations, utilized for the analysis. Despite providing a good starting point of reflection, a more in-depth study with more observations should be performed, to back and strengthen such results.

4. Methodology

The objective of this analysis is to assess whether the shareholders of Brazilian acquiring companies witness value creation or value destruction around the announcement of an M&A transaction. To achieve this, a methodology employing an event study centered on Cumulative Abnormal Returns has been adopted. This approach aligns with the majority of studies referenced in Section 2, as well as with that body of the literature which aims to assess whether M&A creates value or not. The subsequent section elucidates the methodology employed to conduct this analysis.

4.1 Cumulative Abnormal Returns Analysis

The purpose of an event study is to examine the reaction of the market to a corporate announcement, such as dividend announcement, stock repurchase, M&A announcement. When such news is disclosed, it introduces new information to the existing knowledge of the investors. Therefore, it is reasonable to expect that the share price will react in accordance with the investors' expectations, implying that if the prevailing expectation is a value-enhancing announcement, the share price will be expected to rise, while if the prevailing expectation is of a value-destroying announcement, the share price is expected to decline.
The foundational framework for conducting such analyses was established by Fama et al. (1969), and has remained virtually unchanged since then, despite some minor improvements.

Event studies can be categorized into short-term and long-term studies. However, the latter faces significant limitations due to the extended timeframe, making it challenging to isolate the impacts of the event's announcement from broader industry or company structural shifts, as well as macroeconomic influences. Consequently, for the scope of this analysis, a short-term analysis was performed.

The methodology underlying a short-horizon event study is the Cumulative Abnormal Returns (CARs) analysis. The aim of this analysis is to analyse the behaviour of the share prices' returns of multiple firms experiencing the same type of event (in this instance the announcement of an M&A deal), with the intention of determining whether these returns substantially deviate from their expected returns (i.e., the anticipated returns that can be reasonably expected without the announcement taking place), resulting in "abnormal returns", with the latter being defined as the difference between the observed return and the expected return, as follows:

$$e_{it} = R_{it} - K_{it}$$

Where K_{it} represents the expected return, R_{it} the observed return, and e_{it} represents the abnormal return for company i at time t.

Hence, since the observed return is known, the missing component to determine the abnormal return is the expected return. Therefore, it is necessary to choose a model from the economic theory to establish these expected returns. The most common approaches are the constant-mean-return model and the market model. Both the models require the selection of an estimation window, encompassing data prior to the M&A announcement, and that will be essential to estimate the expected returns.
In the constant-mean-return model, the expected return of each share price is expected to be constant, and equal to the average return in the estimation window. The market model, instead, assumes that it exists a linear relation between the market's return and the return of the share. Therefore, by performing an OLS regression of the return of the market and the return of each

share within the event window, it is possible to determine the equation for the linear relationship, and its coefficients: $R_{it} = \alpha + \beta *(Rm)$
Where R_{it} is the return of the market, α and β are respectively the intercept and the slope of the regression, and Rm is the return of the market.

For the purpose of this analysis, consistently with Martynova and Renneboog (2011), Netter et al. (2011) and Alexandrinis et al. (2017), the market model was adopted. Indeed, this model is expected to return a more reliable expected return, by looking not only at the return of each share, but also at the relationship of the latter with the return of the overall market. Furthermore, according to Campbell, Lo, MacKinlay (1997), the market model should increase the efficiency of the event study in determining the abnormal returns.

After determining the expected returns for each observation, it is possible to determine the abnormal returns for each firm. Subsequently, by aggregating the abnormal returns across the two dimensions of time and events, it becomes possible to determine the CARs for each individual firm and the CAARs for the entire dataset.
The CARs are obtained by cumulating the abnormal returns for each specific firm over each day of the historical event window, as follows: $CAR = \Sigma ARit$.

Conversely, the CAARs for the whole sample are obtained by averaging the CARs of each individual observation, as follows: CAAR = $\Sigma CARit$ /N.
Then, a two tailed statistics-test at 1% significance level was performed, in order to determine whether these metrics are statistically significantly different from 0, with the null hypothesis being: HO: CAAR = 0 and the alternative H1: CAAR $\neq$ 0. Hence, a null hypothesis rejection would imply that the announcement of M&As indeed creates abnormal returns.

Lastly, after specifying the model, it was necessary to gather all the data necessary to compute the CARs. First and foremost, it was necessary to choose the market index associated with each firm. Since all the companies of the sample are Brazilian companies publicly traded in the Rio de Janeiro Stock Exchange, the market index chosen as a benchmark was the Bovespa Index. Then, it was necessary to specify the estimation period prior to the event, that was set to begin -240 days prior the announcement, and -40 days prior the announcement date. Once the aforementioned OLS regression was executed, and Abnormal Returns were obtained, the CARs for each firm were calculated in the event windows (-2, +2), (-10, +10), (-40, +40). The reason why in the event windows are included dates which are precedent to the announcement date resides in the analysis of Fama et al. (1969), who discovered that the abnormality of returns starts long before the announcement, probably due to leakages of information. Therefore, it is best practice to include a period prior to the announcement date alongside the period immediately following it, to avoid any bias and any effect in the results due to leakages of information.
The individual CARs were then aggregated across the entire dataset to derive the CAARs across the same event windows.

4.2 Regression Model

The methodology employed for the purpose of the analysis consists of a multivariate regression analysis, in order to investigate more in depth whether some characteristics specific of the M&A deal affect the returns following the announcement. CARs estimated through the Market Model approach were employed as the dependent variable, while deal specific characteristics were employed as independent variables.

The main aim of such an analysis is to provide a first point of reflection for the managements of acquiring companies while structuring their M&A strategy, to be aware of which characteristics are considered to be value-enhancing and which are considered to be value destroying, in order to improve their decision-making, and the shareholders' value creation process.

Following part of the broader analysis of Alexandrinis et al. (2017) and adding the two variables Return on Assets and EBITDA Margin, to analyse whether acquiror's prior operating performance has an impact on the CARs, the following regression equation has been estimated:

$$CAR_i=\beta_0+\beta_1 ASIZE+\beta_2 AROA+\beta_3 AEBITDA+\beta_4 LEV+\beta_5 RELSIZE+\beta_6 PBV+\beta_7 PUBLIC+\beta_8 CROSSBORDER+\beta_9 INDUSTRY+\beta_{11} EQUITY + e_i$$

Table 1 below explains the way independent variables were constructed.

Name	Variable	Definition
ASIZE	Acquiror Size	Logaritmic transformation of the Total Assets of acquirer companies. The value considered is the Total Assets at Fiscal Year t-1 the year of announcement.
AROA	Acquiror ROA	Acquirer's Return on Assets, expressed as EBITDA/Total Assets, to gauge the operating efficiency prior to the deal. Both the accounting values are considered at Fiscal Year t-1.
AEBITDA	EBITDA Margin	Acquirer's EBITDA Margin, expressed as EBITDA/Sales, to analyse the operating performance at the year end of t-1.
LEV	Leverage	Acquirer's Leverage at year t-1, expressed as Total Debt/Book Value of Equity.
RELSIZE	Relative Size	Deal Value divided by acquirer's market capitalization 4 weeks prior to the date of announcement of the M&A
PBV	Price to Book Value ratio	Acquirer's Price to Book ratio, expressed as Market Capitalization/Book Value of Equity at the end of year t-1.
PUBLIC	Public Target	Dummy variable which assumes value 1 if the target is public and 0 if the target is private.
CROSSBORDER	Cross Border	Dummy variable assuming value 1 if the target's nationality is different from acquirer's one.
Industry	Same Industry	Dummy variable that assumes value 1 if the target and the acquiror operate in the same industry, according to their 2-Digit SIC Code.
EQUITY	Equity Deal	Dummy variable which assumes value 1 if the acquisition was finance only through equity, and 0 if it was either a mix or an all-cash payment.

Table 1 – Independent Variables Description

The variables ASIZE and RELSIZE allow to assess the impact of the absolute and relative size effect. In fact, according to the past literature, the deals that destroy value are the mega-deals (Netter et al., 2011), that involve big acquirors and big targets. Therefore, the expected result according to past literature would be that the bigger the acquiror, the lower the return.
By adding the variables AROA and AEBITDA the intent is to assess the relationship between CARs and pre-deal operating performance, to analyse whether superior efficiency prior to the deal creates the expectation that the acquiror will be able to create value through the M&A.
In addition, the relationship between CARs and Price to Book Value (PBV, defined as market value of equity divided by book value of equity) of the acquirer is analysed. In fact, a high value of this ratio suggests an overvalued company, therefore it is expected to have a negative effect over CARs, as in Alexandrinis et al. (2017). Finally, with the variable LEV it is possible to assess whether the level of leverage prior to the deal implies a negative share price response or not.
Furthermore, a series of dummy variables have been included to capture some qualitative characteristics of the deal. The variable PUBLIC, which takes value 1 if the target company is publicly traded and 0 if the target is a private company, allows to analyse the market expected reaction in the case of a public M&A. Past literature shows that public M&As are expected to

destroy value, and one of the main reasons why is that publicly traded companies are bigger in size, thus making post-deal integration more difficult, and require a premium over the current share price, hence making the transaction more expensive.
The variable CROSS-BORDER, which takes value 1 if the target's nation is different from the one of the acquiror, and 0 if the target's nation is the same, allows to test whether geographical diversification is expected to generate more value or not. According to past literature (Bertrand and Betschinger, 2011), (Grigorieva and Petrunina, 2015), cross-border deals in emerging markets are expected to have a negative effect on the acquiror, mainly because of cultural differences that make post-deal integration more difficult.
The variable INDUSTRY tests whether acquiror company and target company operate in the same industry, taking value 1 if so and 0 if the industries are different.
Finally, the dummy EQUITY is used to assess whether the form of payment was all Equity. In fact, according to the pecking order theory (Myers and Majluf, 1984), to an equity issuance should follow negative expectations. Though, as highlighted in Section 2, studies on more recent transactions found that the form of payment does not have any significant effect on bidders' CAARs (Savor and Lu, 2009), (Netter et al., 2011), (Alexandrinis et al., 2017). Therefore, this variable will allow to test whether in Brazil the method of payment has any effect on CAARs or not.
After obtaining all the variables for each deal of the sample, a multiple regression analysis was performed, to gauge each independent variable's explanatory power over the variation of the dependent variable (CARs). Conducting a multivariate analysis implies to test the significance of each independent variable, with the null hypothesis of the test being: HO: $\beta_i = 0$, and the alternative: H1: $\beta_i \neq 0$. Consequently, if the null
hypothesis is rejected, the variable can be considered statistically significant. In order to estimate the coefficient an OLS regression with robust standard errors has been performed. The reason why robust standard errors were used comes from the necessity to solve the heteroskedasticity issue, detected through the Breusch and Pagan (1980) test, that rejects the null hypothesis of constant standard errors (homoskedasticity) for every significance levels. After adjusting the standard errors, it is possible to perform a two-sided test of significance for each variable.

5. Data Selection

The data set used for the purpose of conducting the event study analysis was collected from Refinitiv Eikon Database and includes 461 Brazilian M&A deals, in the period between 2002 and 2022.

First and foremost, it was necessary to identify all the transactions which were completed in the above-mentioned time window. Therefore, in order to include a deal in the sample, the following restrictions were applied:

1. The value of the deal is disclosed and available;
2. The acquiror firm is a public company listed in the Rio de Janeiro Stock Exchange;
3. Neither the acquiror nor the target are financial services companies or operate in the public sector;
4. The transaction is defined as a Merger, a full Acquisition or an Acquisition of Majority Interest (i.e. purchase of a stake higher than 50%);
5. The method of payment involves cash, equity, or a mix of them.

After accounting for these restrictions, a sample of 461 M&A transactions was obtained. Then, after collecting further data specific to each deal, and necessary to construct the independent variables of the regression, the sample was slightly reduced to 418, because accounting data was not available for all the firms in the sample. Furthermore, for the purpose of the calculation of the CARs, it was required that the acquiror's share price was available not only at the announcement date, but also 240 days before the announcement date, in order to estimate the expected return.

4.1 SAMPLE DESCRIPTION

Table 2 below depicts the sample statistics on deal volume, expressed as number of deals, and value across the analysed period.

Year	Deal Number	Total Deal Value	Average Deal Value	Public Deals	Public Deals Value	Private Deals	Private Deals Value	N. Mega Deals	Mega Deals Value
2002	6	3,440	573	2	1,604	4	1,836	3	3,096
2003	8	3,855	482	3	1,579	5	2,276	3	2,873
2004	5	8,025	1,605	0	0	5	8,025	1	7,766
2005	8	753	94	1	687	7	67	1	687
2006	21	26,514	1,263	7	21,144	14	5,370	4	24,057
2007	36	8,123	226	6	4,731	30	3,392	4	5,511
2008	33	6,964	211	5	4,806	28	2,157	3	4,744
2009	17	15,516	913	7	7,297	10	8,219	6	14,064
2010	35	18,543	530	1	2,213	34	16,330	7	16,024
2011	44	12,960	295	3	7,594	41	5,366	5	9,721
2012	18	2,265	126	1	1,139	17	1,127	1	1,139
2013	16	6,698	419	1	1,144	15	5,554	3	5,395
2014	12	16,662	1,389	1	5,528	11	11,134	3	15,914
2015	9	1,679	187	0	0	9	1,679	1	1,507
2016	9	1,169	130	1	50	8	1,119	1	505
2017	20	22,740	1,137	1	178	19	22,562	2	21,567
2018	23	17,870	777	4	15,310	19	2,560	4	16,743
2019	18	4,926	274	2	3,742	16	1,184	1	3,506
2020	18	4,945	275	4	4,262	14	683	2	3,674
2021	37	4,674	126	2	1,295	35	3,379	2	2,660
2022	25	6,815	273	3	2,947	22	3,868	4	5,703
Tot	**418**	**195,137**	**467**	**55**	**87,249**	**363**	**107,888**	**61**	**166,857**

Table 2 – Summary Statistics, presenting the sample composition in terms of yearly distribution, highlighting for each year the Total Deal Value. Public Deals and Private Deals shows the composition regarding the target's public status, showing that public deals are considerably less, but have a significantly higher average deal value. Finally Mega Deals relevance in the whole sample is shown, since they account for 85% of the total deal value, despite being a small number.

The sample encompasses 418 Brazilian M&A deals, with an average value of $538mn. Though, it is necessary to point out that this value is extremely skewed, due to the presence of a small number of deals that account for most of the deal value, in accordance with Netter et al. (2011). By looking at the Median value, instead, it becomes evident that it is considerably lower, and equal to $45mn. What emerges is that just 61 megadeals (i.e., with value bigger than $500mn) account for 85% percent of the total deal value, despite accounting only for 14% of deal volume. This is not surprising, if Brazil's status of emerging market and its characteristics are taken into account. As a consequence, the Brazilian market is mostly characterised by a multitude of Small and Medium Enterprises (SMEs), that will predominantly shape the M&A activity and its volumes, but not the aggregate deal value.

Furthermore, it is worthy to notice the increase in deal volume throughout the period. As previously mentioned, the relevance of Emerging Markets in global M&A activity has significantly increased starting in 2001, and this is evident from the sample analysed, where in 2002 only 6 deals involved public acquirors, while in 2007 36 public acquirors announced an M&A transaction. Despite the Global Financial Crisis (GFC) of 2008, deal volume remained high, while it is possible to see a decrease in the average deal value, clearly driven by higher uncertainty and lower valuation multiples. One possible explanation for the steady deal volume might be the decrease in interest rates that followed the GFC, which brought the Brazilian interest rate from around 15%, before, 2007 to 8% in 2008, thus making deal financing easier.

Deal value then remained consistently at high levels, with the exception of the years from 2014 to 2016. The reason why there was a significant decrease both in deal volume and value is the Brazilian economic and political crisis of 2014, which was followed by 2 years of recession. This time, due to higher and prolonged political uncertainty, the M&A market was negatively impacted. As a matter of fact, in 2015, the only megadeal that took place accounted for 90% of the deal value of the year.

With regard to deal specific characteristics, table 3 below displays the statistics for the sample.

Year	Full Acquisition	Majority Stake	Cash Only Deal	Industry Related	Cross-Border Deals
2002	3	3	1	5	2
2003	5	3	6	7	2
2004	3	2	5	4	1
2005	5	3	5	6	2
2006	11	10	13	19	4
2007	18	18	24	34	7
2008	16	17	22	24	4
2009	13	4	3	14	2
2010	18	17	20	27	4
2011	20	24	23	36	7
2012	8	10	15	16	1
2013	9	7	11	7	1
2014	8	4	5	10	2
2015	4	5	8	7	5
2016	5	4	7	5	1
2017	15	5	13	17	1
2018	9	14	16	19	3
2019	13	5	14	16	2
2020	15	3	10	14	1
2021	29	8	24	22	1
2022	21	4	19	20	1
Tot	**248**	**170**	**264**	**329**	**54**

Table 3 – Sample's deal-characteristics

More than half of the sample (248 observations) involves the acquisition of 100% of the shares, either through a merger or an acquisition, while the remainder involves the acquisition of a majority stake. Both events are relevant as they assign to the acquiror company full control over the target. With regard to public deals (i.e., deal involving a public acquiror and a public target), they represent a small portion of the whole sample, and this is consistent with what stated above. Brazil's financial markets are not developed, and as such transactions involving public companies are rarer, given that the number of companies publicly traded is small, if compared to more mature countries that rely more on financial markets (e.g., USA, UK). Furthermore, it is

worthy to point out that most of the deals (63%) are Cash Only Deal, showing a propensity of Brazilian public acquirors to finance their M&As either through excess cash or debt, rather than using equity as a mean of payment. Cross-Border deals, just like public deals, are not that common, and one main reason may be that Brazilian companies prefer to invest domestically, to obtain a competitive advantage in a market that they know. In fact, cultural differences are among the most common reasons for failure of cross-border transactions, especially in emerging markets, (Bertrand and Betschinger, 2011), (Grigorieva and Petrunina, 2015), moreover these deals tend to be more expensive compared to domestic ones, both in terms of consideration paid, and in terms of time-consuming activities for post-integration activities. Therefore, it makes complete sense for Brazilian companies to focus on their domestic market, rather than focusing on complexing their business internationally.

5. Empirical Results

5.1 CARs analysis and Event Studies

As previously mentioned in Section 3, the aim of this study is to analyse whether the announcement of an M&A transaction has a positive or negative effect on the share price of acquirors listed in the Brazilian stock exchange. In order to do so, a CARs analysis has been performed for each acquiror of the sample, and the chosen model to compute the CARs was the market approach, which requires to run a regression between the returns of each stock and its associated market index, to determine the coefficients and estimate the expected return.
The first step of the analysis was to select an estimation period, that was set to begin 240 days before the announcement date and end 40 days before. Then, for each of the 430 acquiring firms the coefficients of the regression were obtained, namely αi and βi.
After obtaining the parameters, the expected returns were computed through the following formula: were αi and βi represent the estimated parameters of the above-mentioned regression.
Then, the abnormal returns were computed as the difference between the fitted value and the observed value. Following the computation of CARs for each company through the aggregation of abnormal returns, the Cumulative Average Abnormal Returns (CAARs) were obtained, and a significance two-sided test was performed, in order to determine whether the returns are statistically significantly different from 0.
Table 4 shows the results of the event study of the Cumulative Average Abnormal Returns (CAARs) for the sample of 430 Brazilian public acquirers that undertook M&A from 2002 to 2022. The difference with the sample of the multivariate analysis comes from the fact that this analysis was performed only on the share price, which was an information available for each company.

Total Sample

Interval	Number of Acquirers			Percentage		Acquirer's CAARs	T-Test
(-40;+40)	430	Positive	203	47.2%	CAAR	3.93%***	3.51
		Negative	227	52.8%			
(-10;+10)	430	Positive	233	54.2%	CAAR	1.55%***	5.57
		Negative	197	45.8%			
(-2;+2)	430	Positive	232	54.0%	CAAR	4.88%***	11.85
		Negative	198	46.0%			

Table 4 – Overall sample Cumulative Average Abnormal Returns. The indicator *** correspond to significance level of 1%.

The results suggest that bidders' CAARs are considerably different from 0, and statistically significant at the 1% significance level. Further, it is possible to notice that in two of the three event windows the CARs are positive for more than 50% of the observations. Though, it is worthy to point out that the percentage of deals that have negative CARs is still quite relevant, being always higher than 45%. Nevertheless, the CAARs are positive and strongly statistically significant in all the event windows. Therefore, on average, the companies that experience positive CARs generate more value for their shareholders than the value that is destroyed by those companies that experience negative CARs. As previously explained in Section 2, Alexandrinis et al. (2017) pointed out that the M&A deals which took place after 2010 experienced returns that were substantially higher than those pre-2010. Table 5 below shows that Brazilian companies undergoing M&As on average did not perform better after 2010. Though, the average is significantly affected by some outliers. For the period prior 2010, in 2009 the average CARs amounted to 11.18% for the window (-2, +2) and +21.79% for the window (-40, +40). For the period which follows 2010, instead, Brazil fell into an economic crisis from 2014 to 2016, and the CARs were substantially negative in those years. By looking at the median

CARs it is possible to offset the effect of these outliers, and it is possible to see that M&As have indeed improved in creating value for their shareholders, consistently with Alexandrinis et al. (2017). However, it is worthy to point out that, even though it is true that median CAARs of Brazilian companies improved just like in developed countries, the same cannot be said for the magnitude of the improvement. In fact, median CAARs increased by 2.39% post-2010, compared to an increase of 0.21% for developed countries.

Average Values	(1) 2002-2009	(2) 2010-2022	(2)-(1)
(-2,+2)	2.00%	1.33%	-0.67%
(-10,+10)	1.43%	1.81%	0.38%
(-40,+40)	1.89%	0.39%	-1.50%

Median Values	(1) 2002-2009	(2) 2010-2022	(2)-(1)
(-2,+2)	1.49%	1.52%	0.03%
(-10,+10)	0.97%	2.21%	1.24%
(-40,+40)	-0.73%	1.66%	2.39%

Table 5 – Comparison between pre-GFC and post-GFC acquirors' CAARs

As pointed out by Netter et al. (2011), megadeals and public deals, given their size, are those that destroy the most value, and that downwardly drive the overall CAARs. Therefore, for the purpose of the study, an analysis of the CAARs of the subsamples of megadeals and public deals has been performed to check if, differently from past studies, these deals create value. Table 6 depicts the results for the megadeals sub-sample, while Table 7 reflects the sub-sample for the public deals.

5.2 Mega Deals

Regarding the megadeals subsample, it is noticeable that the pattern is the same as for the whole sample. Except for the window (-40, +40), the percentage of deals that register positive CARs are higher than those that register negative CARs, although this value is always higher than 40%, thus relatively high. Nevertheless, once more, the CAARs for the whole sample of megadeals is positive and statistically significant in 2 of the 3 event windows. Therefore, unlike in developed countries, results suggest that megadeals can unlock an alpha for the shareholders of acquiring companies, creating positive returns. One of the reasons why may be found in an expectation of a significant increase in market power following the transaction. In fact, 80% of the megadeals are domestic deals, that will allow these companies to dramatically increase their size and their market share in the Brazilian market, leading them to obtain a competitive advantage with regards to their competitors. The domestic factor is crucial, as it should allow a smoother post-deal integration, and the knowledge of the market should allow a full exploitation of the potential synergies generated from the M&A. Furthermore, as previously stated, Brazil is an emerging market, characterised by SMEs, and the effect of the competitive advantage coming from the increase in market share may be even more accentuated, especially regarding purchase power against suppliers and pricing power against customers. These results are in clear contrast with the results of Netter et al. (2011), but consistent with Alexandrinis et al. (2017), and the reason can be found in the different historical period of the samples, and in the change in market's reaction around M&As. Netter et al. (2011) analysed a sample of M&As from 1992 to 2009, and these results are consistent with the results of Alexandrinis et al. (2017) for that period. Once more, the results show that the CAARs around the announcement of Mega-Deals are significantly higher for Brazilian companies, as in the window (-1, +1) Alexandrinis et al. (2017) found that CAARs amounted to 2.54% for developed countries, while for Brazil amounted to +4.20% in the shortest event window (-2, +2).

Mega Deals

Interval	Number of Acquirers			Percentage		Acquirer's CAARs	T-Test
(-40;+40)	61	Positive	29	47.5%	CAAR	1.97%	0.78
		Negative	32	52.5%			
(-10;+10)	61	Positive	34	55.7%	CAAR	4.61%***	7.29
		Negative	27	44.3%			
(-2;+2)	61	Positive	35	57.4%	CAAR	4.20%***	4.48
		Negative	26	42.6%			

Table 6 – Mega Deals Cumulative Average Abnormal Returns. The indicator *** correspond to significance level of 1%.

5.3 Public Deals

With regard to public deals, once more, the results suggest that CAARs are significantly positive, and in contrast with past studies that analysed public M&As in developed countries. First and foremost, this is consistent with the results obtained for the megadeals subsample. In fact, if the size of the target is not a driver of negative performance, this should translate in a positive performance of public deals too, since the latter usually have higher deal values compared to private deals. Another plausible explanation may be found in the small size of the Brazilian stock exchange. The size of the average company may be smaller compared to the size of the average company of a mature financial market like the ones of the United States or the United Kingdom. Furthermore, it is plausible to expect that the Brazilian market will trade at a discount compared to more mature markets, due to higher risk related to the emerging market status, and higher political and economic uncertainties. Therefore, lower multiples will lead to lower valuations, which may allow bidder firms to create more value for their shareholders, thanks to the lower purchase price. These results are in contrast with most of the results of past academic literature, but consistent with the results of Alexandrinis et al. (2017), that show that post-2009 public deals shifted from being value-destroying to value creating. Again, comparing the results of the table above with those of Alexandrinis et al. (2017), it is possible to notice a considerable overperformance of the share price of Brazilian companies around M&A announcements, with a +4.07% in the (-2, +2) event window, compared to the +1.05% of developed countries' firms in the (-1, +1) event window.

Public Deals

Interval	Number of Acquirers			Percentage		Acquirer's CAARs	T-Test
(-40;+40)	55	Positive	34	61.8%	CAAR	1.70%	0.55
		Negative	21	38.2%			
(-10;+10)	55	Positive	32	58.2%	CAAR	3.56%***	4.67
		Negative	23	41.8%			
(-2;+2)	55	Positive	31	56.4%	CAAR	4.07%***	3.59
		Negative	24	43.6%			

Table 7 – Public Deals Cumulative Average Abnormal Returns. The indicator *** correspond to significance level of 1%.

Lastly, table 8 reports all the above-mentioned results.

CAAR	Total Sample	2002-2009	2010-2022	Mega Deals	Public Deals
(-40,+40)	3.93%***	-0.73%	1.66%	1.97%	1.70%
(-10,+10)	1.55%***	0.97%	2.21%	4.61%***	3.56%***
(-2,+2)	4.88%***	1.49%	1.52%	4.20%***	4.07%***

Table 8 – All sub-sample's results comparison

5.4 Multivariate Regression Analysis

After conducting the event study, a multivariate analysis was carried out to ascertain whether there are some firm and deal specific characteristics that drive the CARs, and establish whether these characteristics result in positive or negative effects. The event windows analysed are the same as in Section 5.1. In this way, it is possible to account for further negotiation developments and for a greater level of information disclosure related to the deal. For each event window CARs are expressed as the dependent variable, while firm and deal specific characteristics are employed as independent variables. Table 9 below outlines the results of the multivariate regression.

The sample for which all the independent variables were available is composed of 419 observations, each observation representing a distinct M&A deal. The analysis results are generally aligned with previous research in outlining the effects that firm and deal-specific variables have over CARs, along with their statistical significance.

Table 9– Results of the Multivariate Regression Analysis

VARIABLES	(1) CAARs (-2, +2)	(2) CAARs (-10, +10)	(3) CAARs (-40, +40)
Acquiror Size	-0.427**	-1.110***	-1.680**
	(0.00192)	(0.00386)	(0.00797)
Acquiror ROA	0.636	14.500*	37.500**
	(0.0445)	(0.0798)	(0.180)
EBITDA Margin	-0.068	-2.260*	-0.764
	(0.00943)	(0.0125)	(0.0251)
Leverage	0.962**	-0.349	-1.230
	(0.00461)	(0.00670)	(0.0133)
Relative Size	4.720**	6.100**	8.140*
	(0.0208)	(0.0279)	(0.0489)
Price to Book ratio	-0.003	-1.340**	-2.810**
	(0.00349)	(0.00605)	(0.0135)
Public Target Dummy	1.010	0.685	-0.475
	(0.0128)	(0.0186)	(0.0325)
Cross Border	-2.260**	-4.090**	-8.670***
	(0.00930)	(0.0165)	(0.0301)
Same Industry Dummy	0.104	0.502	-2.400
	(0.00788)	(0.0128)	(0.0291)
Equity Deal Dummy	0.145	0.221	-2.250
	(0.00715)	(0.0114)	(0.0237)
Constant	5.880*	16.600***	26.000**
	(0.0303)	(0.0590)	(0.124)
Observations	419	419	419
R-squared	0.100	0.112	0.086

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

First and foremost, the presence of the size effect is confirmed, which can be observed through the acquirer size variable. Models (1), (2) and (3), suggest that larger acquirers exhibit lower Cumulative Abnormal Returns subsequent the M&A announcement. This is perfectly consistent with the results of Alexandrinis et al. (2017) and Moeller et al. (2005), lending support to the

theories of hubris and empire-building. These theories assert that firms, rather than pursuing M&As to enhance shareholders' value, engage in such transactions either to fulfil management's desire to manage a bigger company, thereby boosting the prestige associated with their role (empire-building), or due to bidders' conviction that their management is better suited to oversee the target company (hubris). Furthermore, when excess cash on balance sheet is available, managers could be tempted to utilise that cash at all costs, undertaking investments that are not profitable, or lower than the company's cost of capital, thus destroying value for the shareholders. In the latter case, more shareholder value would be created if a dividend is paid, or if the management undertakes a stock repurchase program, Additionally, the market may have pessimistic expectations regarding deals involving big acquirers due to potential post-deal conflicts and redundancies. In fact, the complexity of management processes increases with the size of the company.
Consequently, introducing further complexities related to the integration of the target's operations into those of the acquirer, could be disruptive to the acquirer's operational efficiency. This further complexity might divert the management's focus from their routine duties, potentially interfering with the effective integration between the two businesses. This scenario could result in redundancies and the inability to generate any synergies from the M&A process, thus generating concern for shareholders that might disfavour the transaction.

Continuing the discussion on the size effect, the outcome of the Relative Size variable may appear somewhat divergent with the aforementioned statement, given that the results of all the models indicate a positive correlation between relative size and CAARs, implying that the market favours the integration between companies of similar size. However, this is not unexpected, and harmonizes with Alexandrinis et al. (2017). Indeed, even though the absolute size effect adversely impacts larger acquirers, this does not necessarily translate into a negative relative size effect. As previously noted, 85% of the observations involves deals of small size (once mega-deals are excluded, the average deal value is equal to $79mn), and, on average, the target's value represents 25% of the acquirer's value. Hence, the parties involved belong to the small and middle market of M&As, and the integration of these two companies should give rise to a larger entity, that still remains within the spectrum of the small and middle market. This entity could then be able to better compete in its industry thanks to its larger size and increased market share. In light of these observations, it can be concluded that such transactions are favourably received by the market, as they stand to boost company's growth and enhance its relative size in the domestic market.

Following, aligning with the observations of Dong et al. (2006), who suggest that the price to book value offer a gauge for potential firm mispricing (indicating overvaluation when PBV is greater than 1 and undervaluation when PBV is less than 1), and further in line with the findings of Alexandrinis et al. (2017), demonstrating that high PBV leads to negative CARs, regardless of the historical period analysed, models (2) and (3) indicate that increased PBV does correlate with diminished CARs. These findings carry robust statistical significance at the 10% and 5% levels, providing the basis to conclude that heightened PBV indeed prompts the market to hold pessimistic expectations concerning a firm's valuation. By examining a subset of the dataset, encompassing deals featuring PBV above the average, it is found that the (-40, +40) CAARs demonstrate a notably negative trend, amounting to -2.7%.

Regarding Cross-Border M&As, model (1), (2) and (3) consistently present evidence of a negative correlation between CARs and the announcement of a Cross-Broder deal, with a robust statistical significance of 5% in model (1) and (2) and 1% in model (3). These results are not surprising and are consistent with Bertrand and Betschinger (2011) and Papadakis and Thanos

(2010), who analysed the performance of cross-border deals in emerging markets. The inference that can be drawn is that the announcement of a Cross-Border M&A induces the market to anticipate adverse expectations over the deal's value creation. In fact, as previously stated in Section 2, these deals create negative expectations because overcoming cultural differences and geographical distance can become a real challenge in post-deal integration, thus making a cross-border deal less attractive for shareholders, who could prefer their company's focus to remain on the domestic market rather than venturing into international diversification. This is especially pertinent in the context of Brazil being an emerging market, where companies might lack the necessary know-how and experience to effectively integrate more complex and mature businesses. Furthermore, it is widely recognized in the financial markets that it is cheaper for investors to effectively diversify their portfolio's exposure to particular industries or regions on their own, by acquiring different stocks on the markets, rather than by diversify by acquiring new firms with the companies they already own through M&A.

Further, an examination of the variable Return on Assets, which was not featured in the previously referenced studies, can shed light on the significant influence of pre-deal operating performance on CAARs. Model (2) and (3) indeed illustrate that the relationship between ROA and CAARs is positive, and statistically significant at the 10% in model (2) and at the 5% in model (3). This could be reasonably attributed to the fact that ROA serves as a proxy for operating efficiency and can be considered as an indicator of competitive advantage. Firms that managed to secure a competitive advantage prior to the deal are more likely to possess an in-depth comprehension of the industry and a defendable leadership position in their industry. Therefore, in this context, M&As take on a favourable connotation, as leveraging on deeper knowledge of the market and on pre-existing competitive advantage should allow the acquirer to strengthen its competitive position in the industry even more.
Finally, in discordance with the pecking order theory postulated by Myers and Majluf (1984), and with the results of Martynova and Renneboog (2011), the variable Stock does not show any statistical significance of the effect of the method of payment on CAARs. According to the two abovementioned studies, in fact, all Stock deals should be associated with negative CAARs, given that using equity as a currency should imply an overvalued share price, but this was not the case in any of the three models above. Therefore, consistently with Savor and Lu, (2009), Netter et al. (2010) and Alexandrinis et al. (2017), it is possible to assert that the method of payment does not have any significant effect on CAARs of Brazilian companies, thus suggesting that Brazilian companies with an overvalued share price can create value for their shareholders by taking advantage of this condition and purchasing companies by issuing new shares.

6. Conclusions and Managerial Implications

Due to the huge growth that Emerging Markets Countries (EMC) have experienced from the beginning of the century, especially regarding the BRICS countries, the global relevance in all fields of economy has considerably improved. This can be clearly shown by the increase in the share of global GDP that the BRICS countries had in 2000 (16.4%) to the share in 2023 (32.1%), and from the forecasts over these countries' growth, which are expected to weight for 50% of global GDP by 2050.
As a consequence of the growth of GDP, which led the EMC to become more mature markets than they were before, these countries have started to invest more, thus increasing also their market share for the global M&A market, both in terms of deal value and in terms of deal number.

Although, despite the constant growth of these countries, past academic research on M&A performance show that China is the only country which is capable of generating value through M&A. Furthermore, the vast majority of empirical evidence is on China, which was the fastest growing economy of the BRICS. Therefore, despite academic interest for these countries has increased over the years, it was limited to some countries. The aim of this paper was thus to contribute to the scarce existing M&A literature around Brazil, which represents one of the most mature emerging countries, to provide an overview of the overall M&A market, alongside some deal-specific characteristics and company-specific characteristics (both for the target and the acquiror).

The paper has taken into consideration a sample of 418 M&A transactions, announced in Brazil between 2002 and 2022. The sample encompasses only publicly listed acquirors from the Rio de Janeiro Stock Exchange, since the share price was necessary to perform the analysis. The methodology employed was an event study, which allows to determine whether an event creates or destroys value for its shareholders, with that specific event being value-creating if it experiences positive Cumulative Abnormal Returns around the announcement, and negative if it experiences negative CARs.
Therefore, following the past literature on this topic, a first hypothesis was built to determine whether the acquiror's' share price experiences an increase or a decrease around the announcement of the M&A transaction. For a long time, companies have experienced negative returns around M&A, thus suggesting that the market, and the shareholders of acquiror companies, did not favor such operations. This was especially true for Emerging Markets, where empirical evidence showed that M&As are significantly value-destroying activities for acquirors' shareholders, with China being the only outlier experiencing positive returns. Furthermore, two sub-samples of acquirors were selected, based on two deal-specific characteristics: megadeals and public deals. In fact, historically, these deals destroyed value not only in emerging markets, but in developed market as well.
Secondly, after assessing whether Brazilian companies experience positive or negative returns around the announcements of M&As, this paper aimed to assess whether there exists some relationship between deal-specific characteristics and company-specific characteristics, to provide a clearer picture of the factors that may affect the returns, and check whether the behavior of the returns to these characteristics differentiate from developed countries or not. In order to do so a second analysis, taking into account multiple characteristics, was performed.

Overall, the results appear to be in contrast with the body of the literature which affirms that M&As do not create value for the shareholders of acquiring companies. In fact, the analysis of CAARs for the whole sample shows that M&As in Brazil are followed by positive abnormal returns in each of the three event windows analysed. Furthermore, in a net contrast with past

empirical results, also the analysis of CAARs for the subsamples of public-deals and megadeals returned positive results, with past studies suggesting that these types of deals are those that destroy the more value for shareholders, given their size and their complexity. For what concerns company-specific characteristics, it is confirmed that the greater the size of the acquirer the lower the returns, thus the expectations that the M&A transaction will be value-creative.
The opposite is true for the relative size of the deal, suggesting that the greater the value of the deal, compared to the value of the acquiror, the greater the value that can be created. In other terms, a deal that is too small compared to the size of the acquiror is expected to be value not as value creative as a bigger deal, given the small portion of synergies that can be generated. However, as explained above, this is only true for small and medium sized acquirers.
Furthermore, regarding acquirors' performance pre-deal, the study suggests that to a higher ROA correspond higher returns. Thus, a higher operating profitability imparts the idea that a company has a competitive advantage which will allow an easier and more efficient integration of the target, exploiting synergies. Finally, M&As experience a negative connotation when a cross-border deal takes place, due to cultural and geographical distances, which bring the post-deal integration to be more difficult and challenging.

These results imply that M&As are a welcomed practice in Brazil, capable of creating value for acquirors' shareholders, and showing a similar attitude to the recent empirical evidence on developed countries and China. As expected, the results suggest that Brazil may be considered a more mature country among the BRICS group, where companies can exploit external growth to speed up their growth, obtaining a significant size advantage in the domestic market, which is mainly characterized by Small and Medium Enterprises.
The results of this paper are somehow aligned with past studies regarding Brazilian companies, Bortoluzzo et al. (2012) and Simoes et al. (2012), but provide stronger statistical results, given the bigger sample utilized, that takes into consideration most of the M&A deals for which data was available from 2002 to 2022.

The relevance of this paper is not limited to proving that the Brazilian stock market is efficient in incorporating new information, unlike other EMs, but can be expanded to provide a framework for the management of Brazilian companies, assisting them during the decision-making process and the development of their M&A strategy. In fact, the sample selected allows to draw some conclusions that are valid from a statistical standpoint, and that can be applied while selecting a potential target of an M&A transaction, especially for the considerations that managers should consider, and their order. Three crucial points of reflection emerge, in the structuring of the company's business plan:

1) Assess the company's size and decide whether M&A is the most value creating strategy.
2) Determine the desirable size of the target.
3) Decide whether to acquire international or nationally.

First and foremost, before making any decisions, and while structuring the business plan of the company, the management should take into account the size of its company. In fact, the results show that while acquiror's size increases, the returns for the shareholders decrease. Hence, in the case of a big corporation, managers should be more thoughtful in analyzing the alternative investments available, including internal development, valuing them carefully, and then deciding the ones that create the greater shareholder value. If the company can already be considered big in its industry, already holding a competitive advantage, then an M&A transaction might not represent the most value-accretive activity to unlock an alpha, and there might be other alternative

investments that could create value for its shareholders. Then, in the absence of any other investments with a greater net present value, managers should consider whether redistribute its resources to the shareholders or undertake the M&A path.
If the decision of undertaking the M&A strategy is taken, managers should then take into consideration the desirable size of the target. In fact, as above mentioned, small and medium enterprises can unlock a greater value when the target relative size is high. Hence, while choosing a potential target, the managers should focus on companies that are similar to theirs in terms of size, as a greater level of synergies is expected, due to an optimization of the cost structure, both for fixed costs (through layoffs, and sharing of plant and equipment) and for variable costs (economies of scale achieved through a greater size).
Finally, in the third point of reflection, after the desired target size has been decided, the management should decide whether to acquire a direct competitor in its market or implement an international transaction. As above mentioned, the results of this paper suggest that in this phase managers should always prefer a national deal to an international one. Although, it is necessary to point out that other factors might play a role in this decision, and that it might not be always possible for a company to undertake M&As in the domestic market. A big company that in phase 1) did not find any value-creative investment and decided to undertake an M&A might find regulatory issues when acquiring on a national basis. Hence, at this point, before making any decision, management's attention should fall again on whether it is better to distribute resources to shareholders or undertake the international path.

In conclusion, this paper represents an expansion of past studies on the Brazilian M&A market. By deploying a methodology used on developed markets, and comparing the results with other emerging markets, it is found that Brazil can be considered a more mature and efficient market among the EMs, albeit still representing a less competitive market compared to the developed markets, in terms of weight over the global markets. Then, after analyzing the results for a large sample of M&As, conclusions are drawn so that some managerial implications can be found, trying to outline a framework that can provide managers with some guidance in their decision-making processes.

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