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Unwrapping the Success Factors in Consumer Goods Industry Acquisitions: An Empirical Analysis of Firm Characteristics and Post-Merger Performance

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Abstract

In this study, the effects of firm characteristics on the success of M&A deals in the consumer goods industry are studied. M&A deals conducted by public consumer goods companies are used in an event study to examine these effects. The collected firm characteristics and other variables are regressed against the excess return of the acquiring company around the announcement date. The primary findings are the significant effect of the relative size and accounting ratios on the success of M&A deals, despite differing in relation from what was hypothesized. Additionally, it is found that firm characteristics only predict a small part of M&A success. This thus means that although this study has created insights into the effect of specific determinants of M&A success, this success is most likely more reliant on other factors.

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1. Introduction

In 2015, HJ Heinz and Kraft merged to create the fifth-largest Food & Beverage company in the world. The total deal value was around 45 billion USD, and the new, combined firm had annual sales of more than 28 billion USD (Kumar, 2019). The merger was expected to lead to positive synergies in terms of revenue increase and cost reduction. And although it might have reduced overall costs and improved the presence of Kraft Heinz brands globally, the merger has not been an overwhelming success. During the six years following the merger, the net revenue has not changed, the EBIT decreased significantly, and the market cap decreased by 53 percent (Fernandez, 2023). It is, however, typical for a merger or acquisition to harm the financial performance of the merging companies or acquirers (Schneider and Spalt, 2017). Large and dominant consumer goods companies are always looking for ways to increase their exposure to consumers, enter new geographical markets, or improve their products with the technology of smaller firms. However, the success of these acquisitions seems to differ significantly and is hard to predict (Fernandez, 2023). Various types of acquisition exist, such as horizontal or vertical acquisition, and within these types, multiple characteristics define each acquisition. This research aims to study the effect of firm characteristics on the success of M&A deals in the consumer goods industry.

The effect of an acquisition on both the target as well as the acquirer has been studied extensively during the past centuries. The review article by Tuch & O'Sullivan (2007) presents a comprehensive review of empirical studies on the effect of acquisitions on acquiring companies. Within this field of study, financial or accounting performance is the most established metric for finding the impact of an acquisition. The pre- and post-acquisition performance is the most straightforward and transparent way of establishing an effect. The studies in this review article confirm what has been described in the paragraph above: acquisitions or mergers, on average, have a slight negative effect, but significant differences exist between acquisitions. Studies have been conducted on all sorts of acquisition characteristics, such as the geography of the sample, payment method, pre-bid performance, or the difference between horizontal, vertical, or conglomerate acquisition (Renneboog & Vansteenkiste, 2019). It has been found that specific characteristics may predict a positive effect of the acquisition. However, this may depend on the particular sample that has been studied, making it hard to create a clear conclusion. What is clear, based on the current body of research, is that the effect of an acquisition is highly dependent on specific characteristics of the acquisition, such as the place it is set in - market, geography, economic state - and the way it is conducted - payment method, horizontal, vertical, or conglomerate.

An industry that has been underexposed to this field of study is the consumer goods industry. 1872 M&A deals were conducted in this industry in 2023 alone, worth 129 billion USD (Global Data, 2024). Research has also found that the Consumer Goods industry was the 4th largest in terms of M&A deal value out of 48 Fama-French industries between 1992 – 2009 (Netter et al., 2011). This thus illustrates how important this industry is for the broader scheme of M&A research. It is, therefore, interesting to see that the effects of M&A deals in the consumer goods industry have not been specifically studied. Some companies have been part of the research samples, but a study focusing solely on the consumer goods industry has not yet been conducted. This study aims to uncover the dynamics of acquisitions in the consumer goods industry to better understand what type becomes successful and what does not. The consumer goods industry can be categorized in terms of the goods the companies produce, such as food and beverages or cosmetics, and each category is dominated by multiple companies. Many large players are thus active in the industry, all

with various acquisition strategies. As has been described above, acquisitions are characterized by many distinct factors, and the additional layer of what geographical location or market the acquisition takes place in adds on top of this. The aim of this study will thus be to find out in what way specific factors or variables affect the success of acquisitions within the consumer goods industry.
Research question: "*What is the effect of firm characteristics of acquiring consumer goods companies on the success of M&A deals?"*

As this type of research has yet to be conducted in this industry, no direct study can pose as a paper to reflect on. However, this type of research has been used before to research other industries or, for example, periods. The article by Tuch and O'Sullivan (2007) explains how, with the use of an event study, one can study the effect of acquisitions on the value of a company. The effects may be found by studying public companies' share price data around an M&A deal announcement. This share price data has been collected through the Refinitiv Eikon database. The share price data of the iShares Global Consumer Staples ETF, which is also collected from Refinitiv Eikon, is used to determine the excess returns.
Regarding firm and deal characteristics that may affect M&A success, variables in four categories will be studied: *relative size, industry relatedness, difference in geography*, and *accounting ratios.* The firm and deal characteristics data have also been collected through the Refinitiv Eikon database. Once all data has been collected, the effect of the acquisition announcement will be studied by looking at the pre- and post-announcement market movements relative to the benchmark.
It is hypothesized that significant differences will be found between the relation of each characteristic on the success of M&A deals. As investors tend to focus on accounting ratios when making their investment decisions, this category of firm characteristics is expected to have a significant positively related impact (Mutswenje, 2009). Industry-relatedness is also expected to have a considerable impact, although it is unclear in what manner. Overall, the short-term success of M&A deals in the consumer goods industry is expected to be close to zero or negative.

The main findings of this research paper are that the overall effect of firm characteristics on the success of an M&A deal is relatively small and highly variable between different time frames. The R-squared values of the various models range between 6.1% and 13.2%, indicating that a large part of M&A success in the consumer goods industry is determined by other important factors. Out of the studied variables, it is discovered that the relative size and pre-M&A accounting ratios play the most significant role in this research. The relative size has a negative effect on the studied excess return, which is opposite to what has been found in previous literature. The pre-M&A accounting ratios, Current Ratio, and Earnings-per-Share are both relatively strong and significant determinants of M&A success. Again, it is found that not all results are in line with the hypothesis, as in this case, the Earnings-per-Share variable is completely different from what had been hypothesized.

The paper is organized as follows. The following chapter discusses the relevant literature and previous research, and the hypotheses are set out. Next, the sample selection, the various variables, and the study's methodology will be described. This section also contains an overview of summary statistics of the data sample and a discussion of the variables' correlation and multicollinearity. Chapter 4 presents the study's results and how these relate to the hypotheses from chapter 2. In chapter 5, the findings will be discussed and compared to those of the previous literature. Lastly, a conclusion will be drawn, and the study's limitations will be considered.

2. Literature Review

Research on M&A has been conducted for over fifty years and is widespread. Various predictors and outcomes have been studied in several ways and in many different areas of the corporate world. The existing literature has created a broad scientific framework for this study. First, the broader scheme of scientific studies on M&A will be discussed, after which the existing literature around one specific side of M&A research, M&A success, will be addressed. Next, the existing literature on potential determinants of M&A success will be reviewed. This section will also form hypotheses around the studied determinants and their effect on M&A success.

2.1 M&A

2.1.1 Background and Theories

Since the 1970s, the amount of research conducted in the field of M&A has increased rapidly. The body of literature will be divided into several schools of thought to create a clear overview of the state of research in M&A. These schools of thought will show from which perspectives or with which goals M&A research is conducted. During the 2000s, the idea of dividing M&A research in such a way already arose (Schmidt et al., 2005; Haleblian et al., 2009). This paper will use a more recent division based on the research by Bauer and Matzler (2014). Their study aims to understand the antecedents of M&A and integrate the schools of thought in their research on it.

The four different schools of thought are divided by different kinds of academic disciplines. Firstly, there is the discipline from a strategic management perspective. Scholars in this discipline have focused on the complementarity of the two parties involved in an M&A deal. Amongst others, the effect of relatedness and complementary on M&A success is studied.
Secondly, the school of organizational behavior researches the effects M&A deals have on both individuals as well as the company and its culture. On top of this, this school also studies the importance of organizational-related variables or firm characteristics. This school does not only focus on the human and cultural aspects of M&A but also the more quantitative and theoretical topic of firm characteristics and M&A success. It also covers the M&A studies focused on international, cross-border deals, as the companies involved often will have to put a lot of focus on managing the cultural distance between the two organizations.
Thirdly, the process school focuses on the argument that the success of M&A lies in the process that precedes it. This school has come forth from the research and conclusions of the school of strategic management and the organizational behavior school.
Lastly, the most prominent school in M&A literature, the school of financial economics, is discussed. This school primarily looks at the performance or success of M&A based on stock-price performance. It thus studies the monetary effect in deals where at least one of the parties is a public company. This type of research is mainly conducted by performing an event study. Here, an event, such as the announcement of an M&A deal, is used to study the market reaction to M&A deals. The efficient market theory plays an essential role in this school of thought, as it is assumed that the stock market reaction or value should reflect the actual change or value of the public company in an M&A deal.
The four schools of thought of M&A research subdivide the academic field in a way that is not mutually exclusive. Researchers frequently take one school as their focus and add smaller factors from other schools to their research. In this study, the same is done, as the methods and topics from the organizational behavior

as well as the financial economics school of thought are combined. This will become apparent in the following chapters.
In the following section, a deeper dive into one of the main topics of this study, M&A success will be done. Consequently, literature on the specific measure of M&A success in this study, short-term stock price performance, will be reviewed.

2.1.3 M&A Success

Whether conducting M&A deals should be considered a financially desirable activity has been discussed for centuries in the corporate world. Companies frequently analyze and consider M&A opportunities, which is most likely why much academic research has also been conducted on this topic. However, research has not yet been able to present a clear consensus on the profitability of M&A and what factors affect its success (Renneboog & Vansteenkiste, 2019).
Previous literature on M&A success generally looks at it through either a quantitative or a qualitative lens (Das & Kapil, 2012). Success has often been measured by capital gains, operational improvements, strategic achievements, or the smoothness of the integration process. However, many studies have also highlighted the complexity of M&A processes and the high risk of failure due to various internal and external factors.

One of the most common ways to assess M&A success is by looking at financial performance metrics. Researchers often study the impact of M&A deals on the economic health of the acquiring or target firm by examining key accounting ratios such as return on assets (ROA) or earnings per share (EPS) and stock price performance (Asiri, 2015). In M&A research, researchers have distinguished between studying the short-term effects and the long-term success (Tuch & O'Sullivan, 2007). Short-term stock price performance after M&A announcements is generally studied by conducting an event study. This type of study focuses on abnormal returns near the deal announcement date to analyze the market reaction to the M&A deal. Additionally, the long-term analysis includes the changes in profitability and revenue growth next to studying the long-term stock price performance. Post-M&A accounting ratios such as the ROA or EPS are analyzed to determine the sustained impact of the M&A deal. These studies have found that while some M&As lead to significant financial gains, others fail to meet expectations, highlighting the unpredictable nature of M&A outcomes (Tuch & O'Sullivan, 2007).

Another essential dimension of studies on M&A success is operational performance (Renneboog & Vansteenkiste, 2019). This involves assessing improvements in efficiency, cost reductions, economies of scale, and synergies achieved through the merger or acquisition. Researchers analyze metrics such as operating margins, cost synergies, and integration efficiency to understand how well the combined entity leverages the operational strengths of the involved firms. Studies often investigate whether the expected operational benefits, such as enhanced production capabilities or streamlined processes, are realized post-merger. Operational performance improvements are crucial for achieving long-term success and sustaining competitive advantage.

Finally, comparative studies look at M&A success across different contexts, such as industries, regions, and types of mergers (horizontal, vertical, conglomerate). Researchers compare M&A success in developed versus emerging markets or across different regulatory environments to find specific factors influencing success (Das & Kapil, 2012).

As described above, the kinds of measures of M&A success are manifold. However, most studies on the success of M&A focus on the short-term stock price performance of acquiring companies as a measure of success (Högholm, 2016; Doukas & Lang, 2003; Drymbetas & Kyriazopoulos, 2014). Therefore, this measure will be further discussed in the following section.

2.1.4 Short-term Stock Price Performance

Short-term stock price performance has become an essential metric in M&A research to assess mergers or acquisitions' immediate success. The use of the metric is, among others, based on the efficient market hypothesis (EMH), which assumes that stock markets have access to all information to determine the actual value of an underlying asset or company (Timmermann & Granger, 2004). Based on this theory, the immediate short-term stock price movement after an M&A announcement is seen as an initial assessment of the potential value captured in the deal.

According to EMH, any new information, such as an M&A announcement, is quickly reflected in stock prices. This makes short-term stock price reactions a reliable indicator of how the market perceives the potential success or failure of the M&A deal. If the market has a favorable view of the merger or acquisition, stock prices of the acquiring or target firm (or both) will typically increase; if viewed unfavorably, stock prices will decline.

Apart from the EMH, the use of short-term stock price performance is also supported by another theory: the signaling theory. This theory states that corporate actions, including M&A announcements, send signals to the stock market about the firm's future. Investors interpret these signals to update their expectations about the company's value. A positive market reaction to an M&A announcement may indicate that investors believe the M&A deal will lead to significant synergies, an improved competitive position, or better financial performance. Conversely, an adverse reaction may signal concerns about integration challenges, overvaluation, or strategic misalignment (King et al., 2004).

It must be noted that using short-term price performance as a determinant of M&A success has limitations. This method might not capture the long-term strategic value of an M&A transaction, as investors might not directly understand the goal a company has for a specific M&A event. Despite this shortcoming of the method, the short-term price performance and, specifically, the excess return remain an important indicator of market consensus about the M&A transaction.

2.2 Determinants of M&A Success

Firm characteristics are distinguishing attributes that describe a firm's physical, functional, and operational dimensions (Nkundabanyanga et al., 2019). The characteristics describe the firm's physical and inherent identity while also reflecting the environment in which it operates. Dogan (2013) defines firm characteristics as all factors that are under the influence of management. In this description, it is thus assumed that management shapes the firm characteristics and plays a crucial role in how a firm constitutes itself. While this study will not explore who or what determines what a company's characteristics are, Dogan's explanation does create a straightforward way of looking at firm characteristics, namely as factors that are influenced from within the company.

Based on the abovementioned, the specific characteristics of a firm to be studied have yet to be decided on. Different firm characteristics are studied within each sector, as not all characteristics are hypothesized to

affect the same research subjects. An example of this is a study by Nyabaga and Matanda (2020), who decided on size, liquidity, leverage, sales growth, and firm age as their firm characteristics in a study on commercial banks. These are all firm characteristics, but they do not cover all dimensions of firm characteristics and are not all relevant to this study. As this study aims to determine the effect of firm characteristics on the success of M&A in the consumer goods industry, specific dimensions influential in M&A deals must also be covered.

To obtain a complete overview of all the independent variables in M&A research, review papers such as the one by Mulherin et al. (2017) are valuable sources. The authors go even further in their paper, as the history of M&A research is also studied. An important note from their historical review is that the methodology of M&A research has changed heavily since it was studied for the first time. According to these researchers, the methodology usually changes based on the state of the economy or standard procedures that change over time. Sample and the period that is covered are thus of great importance in M&A research, something that Netter et al. (2011) also found.

The firm characteristics that will be the research topic should thus be relevant to the current time and ideally also known to be of interest in M&A deals in the industry. In terms of this it must be noted that the consumer goods industry, as the unit of analysis, has been understudied in M&A research. Therefore, previous literature on M&A success that has been conducted on different industries will also be considered.
Next to Mulherin et al. (2017), Renneboog and Vansteenkiste (2019) and Das and Kapil (2012) also conducted extensive review studies on M&A performance and its influential factors. The three studies use different methods to categorize the characteristics that are the predictors in M&A research. Based on the three review studies, the firm characteristics of this study will be chosen. The reason for selecting each firm characteristic will be discussed below in a separate section on the characteristics.

2.2.1 Relative Size

In the academic research covering M&A deals, the size of the acquiring firm relative to the deal value has emerged as a critical variable influencing the success of these transactions (Moeller et al., 2004). Even though deal value does not always equal target company size, it gives two important insights.

Firstly, the variable, framed as *relative size*, is used to understand the impact of differences in company sizes in an M&A transaction. It is seen as an essential determinant of how complex it will be to integrate the two companies involved and indicates what the potential added value will be (Alexandridis et al., 2013). Larger companies acquiring significantly smaller companies will find it less complex to do so, as potential problems, such as culture clashes or integrating different teams into one, will be much smaller. Several theoretical frameworks and empirical findings support the relevance of relative size in M&A success. From a theoretical standpoint, the resource-based view suggests that larger firms have more strategic resources that can be leveraged to manage the complexities of M&A processes more effectively (Popli et al., 2017). The resource-based view argues that companies with access to more assets have stronger competitive positioning and, thus, tend to be more capable of allocating assets toward the integration process. This perspective aligns with the notion that a significant difference in size might help with a smoother integration and more synergy realization, leading to improved post-M&A performance.

Second, using deal value as part of the *relative size* measure shows the impact the M&A deal will have on the acquiring company's financial health. Research has found a significant positive relationship between deal value and the acquirer's value (Högholm, 2016). It is argued that the larger deal value relative to the acquirer will lead to a more careful evaluation of the deal, as it will have a larger impact on the company in a financial and organizational way.

Company size as a variable has been used in various ways in academic research. The first study to include firm size as a predictor in M&A research, Palepu (1986), measured size as the value of the total assets of a firm. Total assets as a measure is widely used in M&A research, both if the research does not focus on stock market response, as Tunyi (2019) and Özer et al. (2022) did, and if it does look at market response (Dixon Wilcox et al., 2001). Other studies, such as Högholm (2016), studied the same relation as this study by using the market value of a firm. However, as using the value of total assets is the most widely used measurement method in M&A research, this will also be used in this study.

As mentioned above, the relative size of the acquirer and target has been widely studied in M&A research. A clear conclusion on the relation, however, has yet to be determined. Fuller et al. (2002) have studied this relationship as well and found that the success of M&A deals also depends on whether the acquirer and target are public companies. Still, they are not able to settle on one clear conclusion. Moeller et al. (2004) argue that a relatively large target results in more value creation as a more considerable potential synergy gain exists, albeit at the risk of higher integration complexity. Others have found that an increase in the target's relative size negatively impacts the stock price performance (Al-Sharkas, 2003; Bradley & Sundaram, 2006). This is argued to be caused by a less straightforward integration process and higher chance of a cultural clash.

So, mixed results have been found regarding relative size's effect on stock price performance. Still, a positive correlation between these variables is expected to be found in this research. Short-term stock price performance is susceptible to the benefits and costs of the M&A deal as perceived by the investors. A higher relative size may influence investors' expectations about the complexity of integration, synergy potential, and overall risk, thus positively affecting the stock performance post-announcement.
In conclusion, the acquirer's size relative to the target is key in shaping M&A outcomes. How it is measured, and its effects can differ depending on the specific characteristics of each deal and methodology used. Understanding this variable thoroughly is essential for academics and practitioners engaged in studying and executing mergers and acquisitions.

Hypothesis 1: For M&A deals in the consumer goods industry, the relative size of the acquirer to target is positively related to the short-term stock price performance of the acquirer.

2.2.2 Industry Relatedness

Industry relatedness describes the similarity between the industries in which two companies operate. A higher relatedness is expected to increase operational synergies and reduce costs (Homberg et al., 2009; Singh & Montgomery, 1987). Kim et al. (2021) come to a similar conclusion, as they find that acquirers are less able to exploit synergy if the acquiring company has no experience in the target company's industry.

The *industry relatedness* is another variable that may indicate the integration complexity and the potential amount of synergy post-M&A. The concept is thus relatively similar to the relative size of the two companies, as discussed above. Companies with a high similarity between their core operations will find it less complex to integrate with each other, making the entire post-M&A process much smoother.

One of the first studies to dive into the different levels of relatedness was that of Rumelt (1974). His study found that diversifying companies, focusing on unrelated industries and target companies, generally have better economic performance than non-diversifying companies. The study by Rumelt meant the start of more research into this relatedness-performance relationship. During the 20th century, the most common practice of measuring company relatedness significantly differed from the current method. Salter and Weinhold's (1978) criterion was whether the "key success factor" of the acquiring and acquired company was the same, while Rumelt (1974) loosely assessed whether distribution channels and production technologies were similar.

As research on company relatedness developed, more standardized measurements have arose in the form of standardized classification systems, such as the SIC or GICS system. Although some of these systems originated in the early 20th century, they were not used in industry-related research from the beginning. Currently, studies on company relatedness, such as Lim and Lee (2016) and Kim et al. (2021), use these standardized systems to determine industry relatedness.

After the study on the relationship between relatedness and economic performance by Rumelt (1974), more research was conducted on this specific relation. During the following decades, studies that focused on different kinds of variables but with relatedness as its primary focus found a positive effect between the profitability of an acquisition and the relatedness of the acquirer and the target (Miller, 2006; Pennings et al., 1994; Gugler et al., 2003). However, other studies have also found a negative relation depending on the chosen factors, such as Lim and Lee (2016) and Homberg et al. (2009). It is interesting to discover that both studies still assume a positive relatedness-performance relation, even though it is not always proven that this is, in fact, the case. The former research explains that this may be the case because the acquisition is already affected by the fact that the two organizations are related. Lim and Lee (2016) relate this to the reasoning behind diversification, where the expected return level is higher if the relatedness is higher. Based on the literature review on the relationship between the two companies' industry relatedness and performance, this study is expected to find a positive relationship.

Hypothesis 2: For M&A deals in the consumer goods industry, the relatedness of the acquirer and the target positively relates to the acquirer's short-term stock price performance.

2.2.3 Difference in Geography

A firm's geographic location plays a significant role in the context of M&A research. The firm characteristic is used as a factor in multiple kinds of M&A studies. For example, it is used to assess how acquiring companies select targets and whether distance is related to this in any way (Chakrabarti & Mitchell, 2013). This study explains how location and spatial distance affect organizational decision-making in many ways, including acquiring resources.

The relevance of a firm's geographical location in M&A transactions is manifold. From a theoretical perspective, the Institutional Theory suggests that firms embedded in different institutional frameworks face varied challenges and opportunities during post-M&A integration (Mtar, 2010). For example, cross-border M&As may expose firms to institutional misalignments that could complicate post-M&A integration but also offer access to new markets and resources.

The location of the acquirer or target does not solely indicate its physical location but also gives information about the regulatory, economic, and cultural systems in which it operates (Ragozzino, 2009). As the location of a company is thus an indication of a whole pallet of firm characteristics, it may thus be influential on the success of M&A as well. In terms of studying predictors of the success of M&A, making a distinction between domestic and cross-border M&A is the most common practice (Liu & Qiu, 2013; Drymbetas & Kyriazopoulos, 2014) . However, one clear conclusion on this relation has not been determined. While the former finds that cross-border M&A is more successful in influencing the acquirer's stock price performance, the latter finds this is not the case.

Empirically, research has shown mixed results concerning the impact of cross-border transactions on M&A success (Dewenter, 1995). Cross-border M&As often face skepticism from investors if they believe integration challenges and cross-cultural differences are expected to outweigh the merger's potential benefits. However, potential synergies and opportunities might be perceived more positively than domestic M&As if the risk seems manageable. Conversely, domestic M&As might be viewed more favorably due to cultural and regulatory alignment, often reflected in positive short-term stock reactions (Renneboog & Vansteenkiste, 2019).

In conclusion, the location of the acquiring and target firm is a critical variable in studying M&A outcomes. Its impact is complex and multifaceted, affecting everything from strategic alignment and market access to regulatory compliance and cultural integration. Understanding how to measure and interpret location effects is essential for researchers aiming to comprehend the complexities of M&A successfully.
Based on past research on the relationship between cross-border or domestic M&A and short-term stock price performance, domestic M&A is expected to be perceived more positively in the short term than cross-border M&A.

Hypothesis 3: In the consumer goods industry, domestic M&A will have a more positive effect on the short-term stock price performance than cross-border M&A.

2.2.4 Acquirer Accounting Ratios

Various types of determinants of M&A success have been studied since the first-ever studies on this topic were conducted. Many of these studied factors focus on how the acquirer or target situates itself in its environment. They focus on how one company relates to the other in the same deal, such as the preceding determinants in this study. The acquirer's accounting ratios, however, focus on a different important factor: the financial state of the acquiring company. A company's accounting ratios give an insight into the fundament and economic health of a company (McLaney & Atrill, 2008).

Despite accounting ratios being an important measure for companies, little to no research has been conducted on pre-M&A acquirer accounting ratios and their effects on M&A success. This is surprising, as Nagy and Obenberger (1994) found that almost 40% of investors see the 'condition of a company's financial statements' as a significant influence on their investment decision, while the most considerable influence is 'expected corporate earnings' at 46.6%. More recent research came to a similar conclusion, as it was found that 'accounting ratios' was one of the most important factors out of 28 studied factors determining investment behavior (Mutswenje, 2009). A company's accounting ratios thus seem to greatly influence investors' decision-making, affecting the acquirer's stock price performance.

The following accounting ratios categories have been chosen to study: profitability, liquidity, and leverage. The Return-on-Assets (ROA) ratio, Current ratio, Debt-to-Equity (D/E) ratio, and Earnings-per-Share (EPS) ratio are determined to represent these categories best.

Return on Assets. The relationship between pre-M&A ROA and M&A success is two-fold. Some studies underscore the positive impact of high ROA on M&A outcomes, as this indicates a strong financial position (Asiri, 2015). Others, however, suggest that excessively high ROA levels pre-M&A might lead to overconfidence and subsequent overpayment for target firms, which could lead to a negative reaction from shareholders (Reyes et al., 2022). This dichotomy highlights the complexity of using pre-M&A accounting ratios to predict M&A success and shows the importance of understanding the specific reasoning and idea behind an M&A deal.
Based on the classic view that a high ROA indicates a financially healthy and robust company, it is assumed that this would also suggest that an M&A deal will generally be successful, as evidenced by an increased stock price.

Hypothesis 4a: A higher pre-M&A Return-on-Assets of an acquirer from the consumer goods industry is positively related to post-M&A short-term stock price performance.

Debt-to-Equity. A balanced D/E ratio pre-M&A can equip acquirers with the necessary leverage for acquisitions without compromising their financial stability. Companies with moderate leverage are able to secure debt financing at lower costs, potentially increasing the value creation of the M&A deal. However, excessively high D/E ratios may lead to higher debt repayments, which affects the post-M&A integration process and company performance.
Empirical studies further explore how the D/E ratio impacts investor confidence and market reactions to the announcement of an M&A (Barros & Di Miceli da Silveira, 2007). A well-managed debt level pre-M&A reassures investors about the acquiring firm's risk management capabilities, positively influencing stock price performance in the short term. Therefore, the pre-M&A D/E ratio is crucial for its influence on post-merger performance.

Hypothesis 4b: A higher pre-M&A D/E ratio of an acquirer from the consumer goods industry is negatively related to post-M&A short-term stock price performance.

Current ratio. Firms with higher current ratios have better buffers to absorb the financial shocks and immediate cash requirements that are often needed during the post-M&A integration phase. The capacity

to deal with economic shocks reduces the risks associated with unexpected expenses that may arise during the integration process.
Conversely, an excessively high current ratio may signal inefficient use of assets. Therefore, while a solid current ratio generally suggests a strong liquidity position, the optimal level of this ratio depends on the specific phase a company finds itself in. This interpretation of the current ratio underscores its importance as a financial metric in M&A research. Again, it is important that the current ratio is assessed considering the company's current situation. It is hypothesized that a high current ratio will generally lead to a higher short-term performance, as the ratio still indicates a strong short-term financial position, which investors will take into consideration.

Hypothesis 4c: A higher pre-M&A current ratio of an acquirer from the consumer goods industry is positively related to post-M&A short-term stock price performance.

Earnings-per-Share. As with the ROA ratio, the EPS ratio is an indicator of a company's profitability. On top of this, it also is an indicator of the financial strength, which is important during an M&A deal. The reasoning for the potential effect of the pre-M&A EPS ratio is also like that of the ROA ratio. A higher EPS ratio is an indicator of strong profitability, which is helpful during the integration process after an M&A deal.
A strong EPS ratio also benefits from higher investor confidence, which may lead to a more favorable market reaction to the deal announcement. A high pre-M&A EPS ratio is thus expected to lead to a more successful M&A deal, as the acquirer has a better financial position, which increases the confidence of investors in the company's actions.

Hypothesis 4d: A higher pre-M&A EPS ratio positively relates to post-M&A short-term stock price performance in the case of an acquirer from the consumer goods industry.

3. Data and Methodology

The following chapter presents the data and methodology used to study the effect of firm characteristics on M&A success. First, the data sample and the data collection process will be described. Next, the various dependent, independent, and control variables will be discussed. This will include an overview of the descriptive statistics of input data and the variables. Lastly, the study's methodology will be described, and various tests on the data will be conducted to ensure that it fits this methodology.

3.1 Data Sample

For this study, data has been collected on M&A deals in the consumer goods industry after the start of the 2008 financial crisis. The 2008 financial crisis has been chosen as a natural economic cut-off point, as this was the last large global financial crisis long enough ago to provide this study with a long enough period to collect data. The exact date that was taken was July 1, 2008, which is the first day of the quarter the financial crisis occurred. The data has been collected until the end of Q1 2024, as this is the last full quarter at the moment of research. All M&A data has been collected through LSEG Workspace, formerly known as Refinitiv Eikon. On this platform, the 'M&A deals' function in the 'Screener' space was used to collect data on all M&A deals between a public acquiring company and a (public) target company.

The M&A deals were filtered to solely include data of public companies listed in one of five Western exchange markets: the United States, the United Kingdom, France, Germany, and the Netherlands. Some deals had to be removed from the sample, as it was an acquisition where a holding company made a deal with another legal entity that was part of the same company. Next, the data was filtered to solely include acquiring companies active in the non-cyclical consumer products industry, according to the Reference data Business Classification (TRBC) system from LSEG Workspace. This classification system is implemented in LSEG's platform and is similar to the GICS classification system. Next, the data is filtered to solely include deals with a completed deal status with a disclosed deal value of at least 1 million USD. The data sample contains 427 M&A deals with an average deal value of 1,005 million USD. Table 1 summarizes the collected deal data and categorizes it by one of the major subgroups of the 'Consumer Non-Cyclical' class of the TRBC system.

Table 1 illustrates that significant differences exist between the five subgroups. Based on the LSEG Workspace database, it seems that the Food & Tobacco subindustry is the most active regarding M&A deals. During the studied period, 239 M&A deals were conducted by acquiring companies in this sub-industry. According to this database, the Consumer Goods Conglomerates participated in a noticeably low number of M&A deals. The remaining three sub-industries all saw relatively similar amounts of M&A deals occur. In terms of the average deal value per sub-industry, it is interesting to find that the Food & Drug Retailing subgroup has a significantly lower average deal value of 368.98 million USD in comparison to the other subgroups. The Consumer Goods Conglomerates has the highest average deal value, at 1,586.07, which may be explained by the fact that conglomerates tend to have more financial resources, which enables them to execute larger M&A deals.
Concerning the average acquirer value, the large differences between all subgroups and the respective deal value are remarkable. The average acquirer value differs a lot between all subgroups. As expected, the M&A deals by companies in the Consumer Goods Conglomerates TRBC group have the highest average acquirer value. The average acquirer value of the Beverages and Food & Drug Retailing subindustries, 26,588.04 and 18,901.10, respectively, is interesting to find, especially compared to their average deal value.

Table 1: Descriptive Statistics of M&A deals by TRBC Major Groups

The table reports the number of deals, average deal value, and average value of the acquiring company in the dataset. The TRBC activity category 'Consumer Non-Cyclicals' is depicted, as well as a summary of the five subgroups that make up this TRBC category. The average deal value and acquirer value are measured in millions of USD.

TRBC Activity Major Group	*# of deals*	*Avg. deal value*	*Avg. acquirer value*
Beverages	45	870.85	26,588.04
Food & Tobacco	239	1,181.89	14,164.11
Personal & Household Products	72	1,063.98	10,736.59
Food & Drug Retailing	67	368.98	18,901.10
Consumer Goods Conglomerates	4	1,586.07	45,603.89
Consumer Non-Cyclicals	427	1,005.46	15,933.27

3.2 Variables

Various dependent, independent and control variables have been constituted based on the financial data collected from the LSEG Workspace database. The financial data used as input for the independent variables have been summarized in table 2. In the following two sections, the dependent, independent and control variables will be further described. The summary statistics of all the variables are depicted in table 3.

3.2.1 Dependent Variable

The sole dependent variable of this study is the excess return of the acquiring company after the announcement of an M&A deal. This performance is measured by the short-term stock price performance of the acquiring company in comparison to the iShares Global Consumer Staples ETF from Blackrock during three different windows. The different factors used to determine the excess returns will be discussed below.

Acquiring company performance. The LSEG Workspace database provides the closing prices of different days around the announcement date. With an eye on studying short-term performance, the closing price at the announcement date and 1, 7, and 28 days before and after the announcement date are used. With these closing prices at these dates, three time periods have been created: [-1;+1], [-7;+7], and [-28;+28]. The acquiring stock price performance has been calculated for these three periods.

Index performance. An index that is used to measure the performance of a company in comparison to an industry, should be an index that is closely related to all the studied companies. As this paper studies consumer goods companies listed in the US and four stock exchanges in Europe, it is important that this index tracks similar companies. Many different indexes cover the consumer goods industry but most solely do so for U.S.-based companies. After thorough research, the iShares Global Consumer Staples ETF was chosen as the index for this study. This ETF is made up out of consumer goods companies and has companies in its portfolio from primarily the U.S. and Western Europe, and a small percentage from Australia and Japan. The iShares ETF is the largest global consumer goods ETF, and its stock price performance will be used to calculate the excess return of acquiring companies returns.

The performance of the iShares Global Consumer Staples ETF was measured in the same manner as the company's performance. The complete historical data of the index from the beginning of Q3 2008 to the end of Q1 2024 has been used, so the close price of the index may be matched to the announcement date of the M&A deal. Microsoft Excel was used to match the announcement date to the date in the historical data and found the closing prices for the same periods described above. Again, the index performance over these three periods was found after obtaining the specific closing prices.

Excess returns. The excess returns of the acquiring company stock compared to the index are used as a measure of short-term performance and, thus, a measure of whether the M&A deal is a success, according to investors. Again, for all three time periods, this variable is measured. The excess return during a specific period around the deal announcement is calculated by subtracting the index performance from the acquiring company's stock performance.

The *excess return* as the dependent variable was chosen over other methods of measuring M&A success because of the availability of data and the way currency exchange rates fluctuate. The LSEG Workspace readily has available the closing stock prices on the specific dates before, on, and after the announcement of an M&A deal. On top of this, this data was already measured in USD, even if the company's stock was not traded in that currency. The database has thus already taken the specific exchange rates of each day into account. To use other methods of measuring M&A success, one would need all closing prices of all acquiring companies of at least the past year, all measured in one currency.

There are two problems that come with this need. Firstly, most databases do not measure company stock prices in USD if the stock is traded in another currency. And secondly, on top of this, these databases do not provide the closing prices of companies that have since become delisted.

Because this study focuses on companies listed on stock exchanges in different countries and traded in different currencies, not all databases are able to provide the necessary data for this study. The LSEG Workspace is able to provide data that suffices in applying the market-adjusted return method. The way these returns are calculated using this method is explained in the *Methodology* section of this chapter.

Table 2: Summary Statistics of Input Variables

The table summarizes the most important statistics for all the input data used in this paper. All variables are used to calculate the independent variables, apart from the EPS ratio, which is readily provided by the database. Apart from the EPS, all variables are measured in millions of USD.

	N	*Mean*	*SD*	*Min*	*p25*	*Median*	*p75*	*Max*
Current assets	427	4,748.07	8,492.77	7.21	343.00	1,259.03	4,401.00	84,164.00
Total assets	427	15,933.27	27,028.02	27.07	1,029.60	4,323.67	18,561.02	247,199.00
Current liabilities	427	4,494.43	8,863.05	3.06	148.43	763.00	4,515.00	99,899.00
Total liabilities	427	10,001.32	17,470.22	3.06	462.57	2,343.14	11,833.86	161,612.00
Total equity	427	5,931.95	10,354.39	13.96	419.67	1,620.65	6,711.21	86,078.18
Net income	427	1,196.59	2,307.52	0.23	42.7	229.89	1231.00	21,190.00
EPS	427	2.03	2.06	0.02	0.60	1.58	2.64	11.86

3.2.2 Independent Variables

***Relative Size*.** This variable will be calculated as a factor value of the relative size of the acquiring company in comparison to the target company. For the size of the acquiring company, the total amount of assets is taken, and for the target company, the deal value is used. Although the deal value will not always be the same as the total assets of a target company, this value will still be used. This is because this variable aims to show the financial impact of an M&A deal on the acquirer, which is why the deal value is a better indicator than the total asset value of the target.

$$Size = \frac{total\ assets_{acq}}{deal\ value}$$

***Difference in Geography*.** As discussed in the literature review, the location of a company's headquarters can be an important factor in M&A deals, as it also potentially indicates a lot about the company's culture. This variable is measured by the location of the acquirer's or target's headquarters at the time of the M&A deal, according to the LSEG Workspace database. Based on whether the country of the headquarters is the same, a value of 0 or 1 is given to that specific M&A deal. An additional binary variable will thus be created

to study this concept. In the case the two involved parties have their headquarters in the same country, this binary variable is given the value of '1'.

Industry Relatedness. This variable is measured at a macro- and a mid-level of industry-relatedness and measured by using the TRBC classification system. This system categorizes a company into five levels of granularity. The macro-level of industry relatedness is measured by the lowest level of granularity, meaning that only the first two digits of the 10-digit TRBC number are looked at. The third level of granularity determines the mid-level relatedness, which means that the first six digits of the acquiring and target company are compared. Other studies use a similar method of measuring industry relatedness. Most studies, however, use the GICS classification system, which works similarly as the TRBC system, and only study industry relatedness at one specific level of relatedness instead of two (Kim et al., 2021; Lim & Lee, 2016). In case the first two or first six digits are the same, depending on which of the two levels is covered, the variable is given the value of '1'. This thus means that if the two companies have the same first six digits in their TRBC classification number, they operate in the same industry at the mid-level.

Return-on-assets (ROA) ratio. In M&A research, the acquiring firm's ROA ratio is a key variable to indicate its profitability. The ratio measures a firm's ability to generate profits from its assets and quantifies managerial efficiency and financial effectiveness. Research suggests that a higher pre-M&A ROA may signal strong managerial capabilities and a healthy financial structure, potentially leading to more successful post-merger performance (Abor, 2005).
The ROA is calculated by dividing the acquirer's net income over the last 12 months by the acquirer's assets over the last 12 months on the day of the announcement. The data used for this calculation was obtained through the LSEG Workspace M&A deals portal.

$$ROA = \frac{net\ income_{acq}}{total\ assets_{acq}}$$

Debt-to-Equity (D/E) ratio. The pre-M&A D/E ratio of the acquiring firm measures a firm's financial leverage by comparing its total liabilities to its shareholder equity. It offers insights into how a company finances its operations and growth (Arhinful & Radmehr, 2023). Additionally, it shows the leverage of a company and how much risk is being taken. High leverage, indicated by a higher D/E ratio, may signal aggressive growth strategies but also represents a more significant risk.
The D/E ratio is calculated by dividing the company's total liabilities by its shareholder's equity. Both are measured as their level over the past 12 months in millions of USD. It is an indication of how much external capital a company has obtained to fund its operations and, thus, how much it relies on non-internal capital.

$$D/E\ ratio = \frac{total\ liabilities_{acq}}{total\ equity_{acq}}$$

Current Ratio. The liquidity of the acquiring firm, as measured by the current ratio, is an interesting variable to consider when predicting the outcome of M&A activities. The current ratio is a primary indicator of a company's short-term liquidity. This ratio reflects a firm's ability to cover its short-term obligations and is a vital indicator of financial health before engaging in M&A (Leepsa & Mishra, 2017). The current ratio is calculated with the following formula:

$$Current\ ratio = \frac{current\ assets_{acq}}{current\ liabilities_{acq}}$$

The current assets and liabilities have been obtained through LSEG Workspace and depict the current assets and liabilities over the last 12 months at the announcement date.

***Earnings-per-share (EPS) ratio*.** In M&A research, the acquiring company's pre-M&A EPS ratio is a pivotal indicator of its profitability and financial health (de Wet, 2013). The ratio is found by dividing the company's net income by its outstanding shares. A higher EPS indicates that a firm is in a better financial position and will thus be able to better manage the financial burdens that come with an M&A deal. A better financial position enables a company to integrate with the acquired company effectively and profit from the following synergies, as it likely has more resources it may put towards the post-M&A process.
As described above, the EPS ratio grants insight into the company's pre-M&A profitability and financial health. This measure is directly taken from the LSEG Workspace database.

Table 3: Summary statistics of independent and dependent variables

Table 3 depicts the most important statistics for the dependent and independent variables that are not measured as a binary variable. The independent variables are all a form of a ratio, while the dependent variables are price-performance indicators during the specified period.

Variable	*N*	*Mean*	*SD*	*Min*	*p25*	*Median*	*p75*	*Max*
Dependent variables:								
Excess return [-1;+1]	427	.014	0.119	-.864	-.015	.008	.037	1.466
Excess return [-7;+7]	427	.027	0.151	-.898	-.023	.018	.069	1.86
Excess return [-28;+28]	427	.039	0.196	-.925	-.046	.041	.127	1.565
Independent variables:								
Relative size	427	150.268	511.819	.641	6.835	18.904	66.216	3759.791
ROA ratio	427	.070	.042	.002	.041	.062	.094	.199
Current ratio	427	1.688	1.281	.159	.875	1.324	2.068	10.283
D/E ratio	427	1.733	1.072	.498	1.035	1.459	2.063	6.402
EPS	427	2.027	2.061	.022	.605	1.584	2.640	11.861

3.2.3 Control Variables

To ensure the regression analyses of the various models are robust, several control variables will be added to the study. The control variables will help isolate the effect of the independent variables on the dependent variables. By including the control variables, other factors that might affect the studied relations will be controlled for.

Acquirer Exchange. To control the regression for differences between excess returns on different stock exchanges the *acquirer exchange* control variable is used. This variable helps to control for market-specific factors that potentially affect the relation between the studied variables. The variable is a categorical

variable that includes five countries, where the acquiring companies are listed, as described in chapter 2 of this paper.

TRBC Acquirer Major Group. This control variable is included to account for industry-specific effects that might affect the stock returns. Due to different regulatory frameworks or competitive environments, rather significant differences may exist between the sub-industries in the consumer goods industry. The five subgroups identified in the TRBC classification system are used for this categorization.

Deal value. The deal value may significantly affect the relation between the independent and dependent variables, which is why it is used as a control variable in this study. Factors such as financial risk, complexity of the integration process, or market perception all affect an M&A deal. This control variable has four categories, which are divided by 25^{th}, 50^{th} and 75^{th} percentiles. Including the deal value control variable allows a more accurate estimate of the relations studied in this research.

Total Assets. To refine the accuracy of the regression models, *total assets* is incorporated as a control variable. This variable can control for differences in the size and influence of a company. The total assets are related to the financial stability and economies of scale of a company. Larger companies, in terms of total assets, experience different market dynamics or operational flexibility compared to smaller companies, which could influence the price performance. Again, this control variable has four categories, divided by the 25^{th}, 50^{th} and 75^{th} percentiles.

3.3 Correlation and Multicollinearity

In this section, the correlation between all the studied variables and the multicollinearity is discussed. The correlation coefficient indicates the percentage of variation that is shared between two variables. The coefficient is measured from -1 to +1. The further away from zero, the stronger the correlation is. The correlation matrix may be found in the appendix, table 5.

To discuss the strength of the correlation, three categories are used. A weak correlation is a correlation between 0 and |0.3|, a moderate correlation between |0.3| and |0.7|, and a strong correlation between |0.7| and |1.0| (Ratner, 2009). The highest correlation found in this matrix, and the only strong correlation, is the one between the variables for the *excess return* for the 3-day and 15-day window. Next to this, all other correlations between the dependent variables are moderate but on the upper end and highly significant at the 0.01 level. These high correlations and significance are not surprising, as the excess returns over the different windows are all related to the same market momentum, the impact of an event (the M&A deal), and investor behavior. These and other factors make sure that returns over very short periods of time are correlated to returns over a slightly more extended period.

Regarding the independent variables, most are negatively and weakly correlated with the excess return variables. The variables *Log(Relative Size), Log(Current Ratio),* and *Log(EPS)* are all significantly correlated at the 0.01- or 0.05-level to these dependent variables, while the other variables are non-significant. In the *Methodology* section the reason for the use of the logarithm of the variables is given.

The correlation between the different dependent variables is generally weak and negative. The four variables that reflect the pre-M&A financial ratios are correlated a little stronger overall, with some correlations being moderate. On top of that, the correlation between the two *industry-relatedness* variables at the macro- and mid-level is at a high, and moderate level. This is not surprising as both variables describe the industry of the acquirer and target at different levels, and it is not uncommon for M&A deals to occur within the same specific sector of an industry.

Looking at the control variables, it is found that all are weakly correlated with the dependent variables. The two non-financial control variables, *Acquirer Exchange* and *Major Group,* are mostly weakly correlated with all other independent and control variables. The only two slightly moderate correlations are between the *Major Group* control variable and the two variables on industry relatedness.
The two control variables that are somewhat more related to the financial side of M&A deals, have a stronger correlation to some of the dependent variables than the other control variables. The *Deal Value* and *Total Assets* are both moderately correlated to the *Log(Relative Size)* and *Log(EPS)* and to each other. On top of that, the latter is also moderately correlated to the *Log(DE)* and *Log(Current Ratio)*. These two control variables are relatively strongly correlated to a specific set of variables compared to other sets of variables and their correlations.

3.3.1 Multicollinearity

Apart from checking the correlations between all variables, the sample is tested for multicollinearity. Multicollinearity potentially makes a study's results less reliable, as it means that a strong relation exists between two independent variables. Based on visual inspection of the correlation matrix, it can already be assumed that there is no issue of multicollinearity, as no independent variables are strongly correlated to each other.
The dataset is also tested for multicollinearity by conducting a Variance Inflation Factor (VIF) test. This test will have to be undertaken for all six regression models. Table 6 in the appendix depicts all the outcomes of the VIF tests on the six different models. The VIF score is calculated in the following way:

$$VIF = \frac{1}{1 - R^2}$$

Previous literature within M&A research describes that when the VIF of predicting variables is higher than 5, multicollinearity potentially exists in the regression model (Daoud, 2017). After performing VIF tests on the six models, it was found that only in the tests that include the control variables was a VIF above 5 found. In the three models, the control variables *Deal Value* and *Total Assets* score above 6, while the predicting variable *Log(Relative Size)* has a VIF of 5.13. Multicollinearity issues in control variables do not have to be addressed, as these do not have any predicting power on the dependent variable. The fact that the VIF of *Log(Relative Size)* is above 5 can be explained by the fact that it is closely related to the control variable of *Total Assets*, as it is directly calculated from this input variable. As the VIF score of *Log(Relative Size)* is 1.21 in all other models without control variables, it can be concluded that multicollinearity is not an issue between predicting variables that must be addressed.

3.4 Methodology

The effect of firm characteristics on the success of an M&A deal in the consumer goods industry is studied using the event study methodology. An event study determines the reaction of a factor, in M&A studies oftentimes the stock price performance, to specific news or events. In this study, the excess return measures stock price performance, as discussed in section 3.2.1. The event study methodology is a common research method in the literature on finance.

In the event study method, the day an event occurs is set as the event day or 'day 0'. An event can, for example, be the announcement of an M&A deal or the publication of an annual report of a company. To study the effect of an event, the difference between the price of a stock prior to the event has to be compared to the price after the event. This is done by setting an event window, which covers a certain amount of days before and a similar or different amount of days after the event day. In this study, three event windows are used so that the difference between the length of the event windows can also be studied.

During three windows, M&A success is measured by the excess return of the acquiring company's stock price over the iShares Global Consumer Staples ETF. The three event windows are one day, seven days, and 28 days before and after the announcement date, making the total event window 57 days. The excess return is calculated for each window:

$$ER_{it} = R_{it} - IR_{it}$$

where ER_{it} is the excess return, R_{it} is the return of the acquiring company during an event window, and IR_{it} is the return of the ETF during the same window.

After all sample data has been collected from LSEG Workspace, data preparation is conducted using the statistical software program Stata. Numerous steps must be taken before any statistical analysis can be conducted. Several variables based on financial or other general data from acquiring companies must be created.

Next, the sample data is cleaned, and missing values are dropped. One of the most important steps here is to investigate M&A deals from the sample where the acquiring and target companies seem to be part of one organization. In this study's sample, M&A deals were removed from the sample, as there was no indication that this deal was a strategic M&A deal but more likely to be a deal for legal or tax purposes. After winsorizing the data sample, to limit the impact of outliers, the summary statistics are created. These statistics may be found in tables 1, 2, and 3.

To investigate the success of the M&A deals in the sample and to test the hypotheses described in section 2.3, a non-robust Ordinary Least Squares (OLS) regression is conducted. The dependent variable ER_{it} is regressed on the selected explanatory variables that have been discussed in section 3.2.2. This type of regression was chosen because it is standard practice in event studies in this kind of M&A research (Högholm, 2016; Moeller et al., 2004). OLS regression is a widely used method for estimating the linear relationships between a dependent variable and one or more independent variables. The primary goal of OLS is to find the best-fitting line through the data points by minimizing the sum of the squared differences (residuals) between the observed values and the values predicted by the linear model. This approach ensures that the estimated regression line has the smallest possible sum of squared residuals, making it the most accurate predictor of the dependent variable given the independent variables. The formula below is the OLS regression model of this study:

$$Y = \beta_0 + \beta_1 * Log(Relative\ Size) + \beta_2 * Relatedness + \beta_3 * Diff\ in\ Geography + \beta_4 * Log(ROE) + \beta_5 * Log(DE) + \beta_6 * Log(Current\ Ratio) + \beta_7 * Log(EPS) + \beta_8 * Control\ Variables + \varepsilon$$

In this formula, Y represents the dependent variable M&A success, measured in short-term stock price performance. The βs are the coefficient, which indicate how much the independent variable affects Y. All the variables each have an own coefficient, as well as the control variables. The control variables are four variables that are here noted as one for a better overview.

To find correct results from an OLS regression, the sample data has to adhere to the Gauss-Markov theory to ensure that the OLS estimator has the best linear estimator, and thus, a few assumptions have to be tested. One of the most important assumptions is that the error term has a normal distribution. In previous literature, continuous variables oftentimes are studied as the logarithm of the variable, as the normal variable is has a non-normal distribution. For this study, histograms and two-way scatterplots are created to see whether the continuous variables have a more normal distribution as a normal variable or as a logarithmic variable. Based on visual inspection of the histograms and two-way scatterplots, it is decided to turn all continuous independent variables into logarithmic variables.
To ensure these logarithmic variables have a normal distribution, a Shapiro-Wilk test is conducted on all continuous independent variables, and the histograms are again studied. Based on the Shapiro-Wilk test, the hypothesis for each tested variable it is normally distributed, had to be rejected. While the W values for all variables are very close to 1, indicating normality, the p-values are all below the 0.05 level. A p-value below this level should lead to the conclusion that the error term is non-normal distributed. However, after visual inspection of the histograms, it is concluded that all the variables are, in fact, normally distributed.

Another assumption for performing an OLS regression is that the error term has to be homoscedastic. To test for homoscedasticity, a White test is performed. This test is able to indicate whether or not a regression model is heteroscedasticity. As with the Shapiro-Wilk test, it assumes a null hypothesis that the independent variables are homoscedastic. If the p-value is higher than 0.05, this hypothesis is considered to be correct. After performing the White test in Stata, it is found that for all six regression models, the p-value is above 0.05. It is thus assumed that the regression models are homoscedastic.

Lastly, the dependent variable and independent variables must be linear. The coefficients found in the correlation matrix are a first indicator whether linear relations exist between the variables. A low – close to 0 – coefficient is seen as an indicator that a relationship is potentially non-linear. This is the case for this study, as can be seen in the table 5 in the Appendix, and in section 3.3. However, the strength of the correlation coefficients is not a conclusive test for linearity. Two-way scatterplots are created and inspected to visually check the correlation. The scatterplots illustrate that the relationships between the several dependent and independent variables are, in fact, linear.

As all assumptions of the Gauss-Markov theory are adhered to, the six regression models can be conducted. In the following chapters, the results of the OLS regression will be reported and discussed.

4. Results

4.1 Description of Results

The goal of this study is to uncover how firm characteristics determine the success of M&A deals in the consumer goods industry. As described above, this research is conducted as an event study with an OLS regression. The results of this OLS regression are presented in Table 4. The dependent variables in this regression are all continuous. The independent variables are log-transformed, apart from the binary variables *Macro-level Relatedness*, *Mid-level Relatedness*, and *Difference in Geography*. For each level-log relation in this study, the result should be interpreted by the following formula:

$$\Delta y = \left(\frac{\beta}{100}\right) * \%\ \Delta x\ .$$

A one percent increase in the independent variable *X* thus leads to a $\frac{\beta}{100}$ increase in the dependent variable *Y*. More practical examples will be provided in the following section, discussing the various hypotheses and their outcomes. Regarding the regression table, the number in the brackets below each coefficient depicts the standard error, and the asterisks show the significance of coefficients according to the corresponding p-value as described in the table description.
Three binary variables are studied besides the logarithmic variables used in this study. The coefficients of these variables should be interpreted as the effect on the excess return if this variable is '1'. For example, if the acquiring and targeted company are headquartered in the same country, the average excess return in model 1 increases by 0.007.

Table 4 depicts the regression results of three different windows, namely one day, one week, and four weeks before and after the announcement date, without and with control variables. The F-statistic tests the overall fit of each regression model for the sample data. All regressions are significant, as the F-statistic p-value in all six models is below 0.01. The null hypothesis that all the coefficients are equal to zero is rejected. The applied model has thus significant explanatory power and is statistically significant overall.

The R-squared of the model for the three different windows differs a lot from each other. Models 1 and 2, which describe the 3-day window model without and with control variables, respectively, found a R-squared of 0.091 and 0.101. This indicates that the variables included in the model explain 9.1% and 10.1% of the variance in the excess return in these respective models. For the 15-day window models, it is found that these explain 12.5% and 13.2%, respectively. Lastly, models 5 and 6, covering the 57-day window, find drastically lower R-squared values of 4.3% and 4.6%, respectively.
Already, it is interesting to see the significant differences between the R-squared of each window. The values between the models that cover the same window of time are relatively similar, indicating that the control variables have a moderate effect. The difference between the three windows, however, is notably large. For example, the R-squared values from models 3 and 4 are 37.4% and 30.7% higher than those of models 1 and 2. These differences will be further discussed in the *Discussion* section of this paper.

Another notable finding from these regressions is the considerably large effect of the current ratio's logarithmic on the excess return. The largest coefficient found in all the regression models is that of this variable in model 3, the 15-day window without control variables. The size of the coefficient is 0.032, and

it is significant at the 0.01 level. This indicates that a 1 percent increase in the current ratio leads to a 0.00032 increase in the excess return during this period, which is a 15-day period.

4.2 Hypothesis Analysis

In section 2.2 of this study, several hypotheses have been constructed that should demonstrate the way in which specific firm characteristics determine the success of M&A deals. All three windows will be used to compare the results to the hypotheses. Additionally, regression models have been created that include the various control variables.

4.2.1 Hypothesis 1: Relative Size

The first hypothesis studied in this paper is the hypothesis testing the effect of the relative size of the acquirer compared to the target on the short-term stock price movement. As the three different models without control variables all find a significant coefficient at the 0.05 level, the null hypothesis is rejected. This thus entails that the effect of the relative size of an acquirer in an M&A deal is different from zero. Models 1, 3, and 5 all find a significant negative relation between the logarithmic of the relative size of the two involved companies and the excess return of the acquiring company. Models 2, 4, and 6, which include the control variables, all find insignificant results, which also have a lower coefficient than the same model without control variables. In chapter 2 it was hypothesized that this relation would be positive. However, this study finds that the relative size of the acquirer to the target is negatively related to the success of the M&A deal.

4.2.2 Hypothesis 2: Industry Relatedness

It was hypothesized that a higher company relatedness would result in a positive effect on the success of an M&A deal between two companies. This hypothesis was tested at two levels of relatedness: the macro- and mid-level. Overall, it must be stated that the null hypothesis cannot be rejected, as all the coefficients have been found to be non-significant. Based on these regression models, the industry relatedness of two companies in an M&A deal thus does not affect the short-term M&A success. The models find that being present in the same industry has a negative effect on the M&A success of a deal.

4.2.3 Hypothesis 3: Difference in Geography

In terms of the effect of the difference in the location of the headquarters of the two involved parties, the null hypothesis cannot be rejected. In all six models, it has been found that the difference in geography variable is not significant, and the conclusion should thus be that this firm characteristic does not affect the success of M&A in the consumer goods industry.

4.2.4 Hypothesis 4: Financial Ratios

The research on the effect of pre-M&A financial ratios on the success of M&A in the consumer goods industry has led to hypotheses on the following four metrics: Return-on-Assets, Debt-to-Equity, Current Ratio, and Earnings-per-Share. Apart from the *current ratio*, it was hypothesized that all pre-M&A ratios would be positively related to the short-term stock price performance. The hypotheses testing the effect of these financial ratios on the excess returns were conducted across all models and windows.

Table 4 shows that the null hypothesis for the 57-day window for all pre-M&A financial ratios, apart from the *Log(ROA*), cannot be rejected. All other results from that specific window are insignificant, regardless

of whether control variables are included. So, for the other three independent variables concerning financial ratios, the null hypothesis cannot be rejected for the 57-day window.

The coefficients for the logarithmic ROA ratio are significant at the 0.10 level for models 5 and 6. The coefficients in these models are -0.22 and -0.23, respectively. The effect of this variable on the excess return is thus negative when measured over the 57-day window. The coefficients for the 3-day and 15-day window are all insignificant and slightly positive but close to zero. For these windows, the null hypothesis cannot be rejected. Given these results, no support for hypothesis 4a concerning the effect of the pre-M&A ROA ratio on the excess return is found.

In terms of the *DE ratio*, only the coefficients of the 3-day window are significant. Model 1 finds a coefficient of 0.011, significant at the 0.1 level, while model 2 finds a coefficient of 0.012 that is significant at the 0.05 level. All other models thus cannot reject the null hypothesis, which illustrates that this whole variable, the logarithmic of the D/E ratio, is not significantly different from zero. The only two models that can reject the null hypothesis find a different outcome than the hypothesis predicted in chapter 2.

The logarithmic *current ratio* variable has a positive effect on the short-term excess return as well. The models without control variables, 1 and 3, have a coefficient significant at the 0.01 level, while models 2 and 4 are significant at the 0.05 level. The coefficients of models 5 and 6 are non-significant, again leading to partial support for the hypothesis. The models for the 3-day and 15-day windows all reject the null hypothesis and find relatively large positive coefficients.

Finally, the logarithmic *EPS* variable is significant at the 0.01 level, apart from the 57-day window models and model 2. The 57-day window models, as discussed at the start of this subsection, are both insignificant and thus do not reject the null hypothesis. Model 2 is slightly less significant than the other significant models at the 0.05 level. The coefficients for the 3-day window are -0,010 and -0,008. The coefficients for models 3 and 4 are -0,017 and -0,013, respectively. This indicates that the pre-M&A EPS ratio has a more substantial negative effect on the 15-day window than the 3-day window.

4.3 Control Variables

The control variables all have the expected impact on the regression and, thus, M&A success. It must be noted that all control variables are insignificant at the 0.10 level. The coefficients of the control variables for *Acquirer Exchange*, *Deal Value*, and *TRBC Major Group* all lie around the 0.00 level, indicating that these three have little impact on M&A success in this study. The control variable *Total Assets* does find a more impactful effect, especially for the 3-day and 57-day model, with -0.011 and -0.027 respectively. This indicates that larger acquiring companies generally are part of less successful M&A deals. M&A deals are oftentimes seen as value-destructive, especially in the short term (Harford et al., 2012). As larger companies generally get more attention from investors and analysts, their stock price performance will also be more impacted by a deal announcement. This would explain why a negative relation is found for this control variable.

Table 4: OLS Regression Results

Table 4 shows the excess return OLS regression results of all six models on the data sample. The dependent variables are the excess return of the company's stock price over the iShares Global Consumer Staples ETF over three event windows around the announcement data ([-1;+1], [-7;+7], and [-28;+28]). The t-statistics are shown in the parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
	[-1;+1]	[-1;+1]	[-7;+7]	[-7;+7]	[-28;+28]	[-28;+28]
Log (Relative Size)	-.007***	-.003	-.009***	-.008	-.013***	-.005
	(.002)	(.004)	(.003)	(.006)	(.005)	(.01)
Macro-level relatedness	-.017	-.017	-.011	-.01	-.02	-.017
	(.01)	(.011)	(.014)	(.015)	(.024)	(.025)
Mid-level relatedness	0	.003	-.009	-.006	.003	.011
	(.009)	(.01)	(.013)	(.013)	(.022)	(.022)
Difference in Geography	.007	.005	.012	.008	.012	.002
	(.007)	(.008)	(.01)	(.011)	(.017)	(.018)
Log (ROA)	.005	.005	.01	.01	-.022*	-.023*
	(.005)	(.005)	(.007)	(.007)	(.011)	(.012)
Log (DE)	.011*	.012**	.003	.005	-.011	-.008
	(.006)	(.006)	(.008)	(.008)	(.014)	(.014)
Log (Current ratio)	.021***	.019**	.032***	.027**	.026	.018
	(.008)	(.009)	(.011)	(.012)	(.019)	(.02)
Log (EPS)	-.010***	-.008**	-.017***	-.013***	-.005	0
	(.003)	(.004)	(.004)	(.005)	(.007)	(.009)
Acquirer Exchange		-.003		-.001		.003
		(.004)		(.006)		(.009)
Deal Value		.005		.001		.011
		(.008)		(.011)		(.019)
TRBC Major Group		.001		.003		.009
		(.003)		(.004)		(.007)
Total Assets		-.011		-.01		-.027
		(.007)		(.01)		(.017)
Constant	.047***	.063**	.078***	.092**	.016	-.002
	(.017)	(.028)	(.023)	(.038)	(.04)	(.066)
Observations	427	427	427	427	427	427
R-squared	.091	.101	.125	.132	.061	.073
Adj. R-squared	.074	.075	.108	.106	.043	.046
F (8, 418)	5.25	3.86	7.46	5.23	3.40	2.71
Prob > F	.000	.000	.000	.000	.001	.002

Standard errors (non-robust) are reported in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

5. Discussion

The results that have been found in this event study are not always in line with the findings of previous literature, nor is it not always possible to reject the null hypothesis based on these results. In this section, the findings and how they compare to previous literature will be discussed. On top of this, the differences between the several R-squared values will be reviewed.

The results presented in the section above show a negative relationship between the logarithmic **relative size** and the short-term M&A success. It was hypothesized that this relation is positive, based on previous literature (Dixon Wilcox et al., 2001; Högholm, 2016). It must be noted that both negative as well as positive relations between these two factors have been found in M&A literature. A straightforward conclusion has yet to be reached regarding the relative size of the acquirer relative to the target (Moeller et al., 2004). The results in this study are significant at the 0.01 level and hold for all three models without control variables. These results thus do not confirm the positive relation that is seen as the main hypothesis on the relation between relative size and M&A success but confirm that it is not possible to make a clear conclusion on this relation, as described by Moeller et al. (2004).

For another determining variable, it is again found that a negative relation exists between itself and M&A success. It has been found that **industry relatedness** at the macro level has a relatively strong negative coefficient. In terms of the mid-level relatedness, the coefficients are around 0.00. It must be noted that all coefficients are insignificant. The findings are not in line with what previous literature has found. Both Homberg et al. (2009) as well as Singh and Montgomery (1987) have found that announcements about M&A deals between two firms operating in the same industry are generally received positively on the stock market.

One of the most studied factors in M&A research is the **difference in geography** of the two involved parties. Although it is a much-studied factor, the findings in the previous literature do not paint one clear conclusion (Dewenter, 1995; Renneboog & Vansteenkiste, 2019). In the review article by Renneboog and Vansteenkiste, it was found that most studies find a slight positive effect of domestic M&A deals over cross-border deals. However, other studies have also found negative coefficients for this kind of variable, such as Drymbetas and Kyriazopoulos (2014). It must be noted that in that study, the coefficients for this variable were insignificant.
The hypothesis posed in this paper predicted a positive effect on the relationship between the two involved parties headquartered in the same country and the M&A success. This study has found that domestic M&A deals are indeed positively related to short-term excess returns for all three studied windows. However, it must be noted that all the coefficients are non-significant.

The findings in this study are rather different from the hypothesis and, thus, the findings from previous literature regarding the effect of the **return-on-assets** on M&A success. The posed hypothesis and previous literature found that the relationship studied should be positive (Asiri, 2015). The results in this study find that for the 3-day and 15-day window, the effect on the excess return is small but slightly positive and non-significant. Due to this insignificance, the null hypothesis cannot be rejected for these two windows. In terms of the 57-day window, the results are that a relatively strong negative relationship exists between the pre-M&A ROA and the excess return, which is significant at the 0.10 level. Overall, the results of this study are not in line with what previous research has found.

The relation between the **D/E ratio** and M&A success has not widely been studied. Based on research on investor behavior and behavioral finance, the hypothesis was formed that these two variables would have a negative relation (Barros & Di Miceli da Silveira, 2007). The idea behind this is that investors will have a negative reaction toward acquiring companies that already have a relatively large amount of debt, which will thus negatively affect the company's stock price in the short term. The results of this study are somewhat different from this theory. For the shortest window, a positive relation is found, while for the other two windows coefficients close to zero are found, both negative as well as positive. It must be noted that only the coefficients of models 1 and 2 are significant. The hypothesis for this variable was based on the finding that a high D/E ratio is seen as a negative indicator to investors, who accordingly will have a negative view of the acquiring company's stock price. It is possible that this theory on investor behavior does not translate to M&A research and the potential success of M&A.

In terms of the pre-M&A **current ratio's** effect on short-term M&A success, the hypothesis was again based on classical economic theories and investor behavior. It is theorized that investors will perceive companies with strong liquidity positions as more robust investment opportunities. The hypothesis was, therefore, that the pre-M&A current ratio is positively related to the post-M&A stock price performance. The results from this study are in line with this hypothesis, as across all six models a positive coefficient was found. It must be noted that only the coefficients from the models covering the 15-day window and model 1 were significant. The coefficients are the strongest that have been found throughout this study, as was described in the *Results* chapter.

The OLS regression results show relatively large and significant negative coefficients on the relationship between the logarithmic **earnings-per-share** and excess return, specifically for the 3-day and 15-day window. This would indicate that a high earnings-per-share, which is directly related to a company's profitability, is not an indicator of M&A success but more likely of M&A failure. According to these results, after the announcement of an M&A deal by a relatively profitable company, the excess return of the company will decrease. This finding is different from the hypothesis, which is based on classic economic theory that profitability is seen as something positive by investors.

As mentioned in the *Results* section of this paper, the differences between the found R-squared values will be discussed. It is found that these values vary significantly from each other, especially when you compare the different windows of time to each other. Within each window, the R-squared values do not differ a lot, and the difference can be explained by the presence of the control variables.
However, as mentioned above, large differences exist between the three window of time and their R-squared variables. Models 3 and 4, covering the 15-day window find the highest R-squared. This thus indicates that the studied firm characteristics have the most significant effect on the value of the excess return when this is measured over this 15-day period. The models that cover the 57-day period, models 5 and 6, have lowest R-squared. This window thus explains the value of the excess return the least. The R-squared of models 1 and 2 are in between the other R-squared values.
These findings thus indicate that the firm characteristics have different levels of effect on the height of the excess return. During the shortest window, it may be explained by the fact that other, more readily available determining factors, such as specific deal characteristics play a larger role. Over the 15-day period, these characteristics, for example, may not have as large of an influence on the excess return, which makes the

effect of the firm characteristics larger. Over the longest window of time, other specific determining characteristics again may be of more influence than the firm characteristics, or the firm characteristics simply become less important of a factor.

After the results of the six models have extensively been discussed in this section, a conclusion is drawn about the findings of this study.

6. Conclusions

This study has aimed to investigate the impact firm characteristics have on the success of M&A deals in the consumer goods industry. Given the size of M&A activities in this industry, it was important to study which firm-specific factors lead to a deal becoming successful. The inspiration for this article has been to fill a gap in the previous literature, as the consumer goods industry has not been studied extensively in M&A research despite the economic importance of the industry. By examining firm characteristics of acquiring companies, such as their pre-M&A accounting ratios, this paper has aimed to provide a comprehensive understanding of what drives M&A success in this sector. The research question guiding this study was: "*What is the effect of firm characteristics of acquiring consumer goods companies on the success of M&A deals?"*

To address this research question, an empirical analysis was conducted using data from the LSEG Workspace database involving 427 M&A deals by public companies in the consumer goods industry. The analysis focused on acquiring companies' short-term stock price performance, measured through the excess returns relative to the iShares Global Consumer Staples ETF. Four main independent variables were studied: *relative size, industry relatedness, geographic difference*, and pre-M&A accounting ratios (*ROA, D/E ratio, current ratio*, and *EPS*). An OLS regression over three different periods, with and without control variables, was conducted to find the impact of these variables on the excess return.

The regressions revealed mixed results across different variables. *Relative size* exhibited a significant negative relationship with M&A success, contradicting the previous literature and the hypothesis of a positive relationship. *Industry relatedness* showed no significant impact, while *geographic difference* did not significantly influence M&A success either, according to this study. Among the accounting ratios, the *current ratio* had a positive effect on excess returns, indicating that liquidity is an essential factor for successful M&A deals. However, *ROA* and *EPS* had unexpected negative impacts on short-term performance. It is important to note that the R-squared value of the regression models was relatively low, indicating that the included independent variables only explain a small portion of the variability in M&A success. This suggests that other factors not captured in this study may play a significant role in determining M&A outcomes.

This paper has contributed to understanding the success factors in M&A deals within the consumer goods industry, providing insights for both researchers and business professionals in the industry. It has highlighted the variability of M&A deal outcomes, showing that certain factors are crucial in its success. The findings suggest that a larger relative size may lead to integration problems that negatively impact

short-term success. At the same time, strong liquidity positions help mitigate financial risks during the post-M&A integration phase. The results also indicate that traditional assumptions about the positive impact of profitability ratios (ROA and EPS) on M&A success may not always hold in the consumer goods industry. Additionally, the low R-squared values indicate that M&A success is influenced by a multitude of factors, many of which have not been included in the study. This illustrates the need for a more comprehensive approach in future research to capture the full spectrum of variables that affect M&A outcomes. Future research should continue to explore these dynamics, potentially incorporating investor behavior measures to provide a more comprehensive understanding of M&A success.

7. Limitations

This study has several limitations that are important to note in case of future research on this topic.
Firstly, the model with the highest explanatory value only explains 13.2% of the variation in the excess return. This thus means that 86.8% of the variation is unexplained. Naturally, the firm characteristics of the acquiring company will not explain the total variation. However, it is expected that the firm characteristics should predict more than the currently found 13.2%. Thus, this study could have included more relevant firm characteristics to create a more insightful picture of what factors affect M&A success.

Another limitation of this study is the translation of the results to the real world, from theory to practice, and its ability to cover the complete world of M&A deals in this industry. In a large share of the M&A deals in this industry, the acquiring company is a private company. For methodological reasons, this study has only included public acquiring companies, as for these companies the stock price data is available. With the effective market hypothesis in mind, the value of a public company may be determined at any time. As for private companies, the process of determining the value of a company and the effect of the M&A deal on this value is almost impossible to determine precisely. As M&A deals where the acquirer is a private company were not involved in this study, it is not possible to know whether the results also hold for those M&A deals and the private acquiring companies.

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9. Appendix

Table 5: Correlation Matrix

Variables	[-1 ; +1]	[-7 ; +7]	[-28 ; +28]	Log (Size)	Relat-macro	Relat-mid	Diff-Geo	Log (ROE)	Log (DE)	Log (Current)	Log (EPS)	Acquirer-Exchange	Deal-Value	Major-Group	Tot-Assets
[-1 ; +1]	1.000														
[-7 ; +7]	0.832	1.000													
[-28 ; +28]	0.583	0.668	1.000												
Log(Size)	-0.152	-0.181	-0.146	1.000											
Relat-macro	-0.086	-0.065	-0.040	-0.120	1.000										
Relat-mid	-0.039	-0.062	-0.011	-0.135	0.654	1.000									
Diff-Geo	0.104	0.118	0.089	-0.183	-0.094	0.040	1.000								
Log(ROE)	-0.030	-0.034	-0.126	-0.021	-0.084	-0.072	-0.088	1.000							
Log(DE)	-0.020	-0.112	-0.080	0.129	-0.053	0.004	-0.086	0.320	1.000						
Log(Current)	0.112	0.172	0.132	-0.328	0.139	0.027	0.069	-0.284	-0.490	1.000					
Log(EPS)	-0.150	-0.195	-0.116	0.079	-0.082	0.002	-0.116	0.473	0.214	-0.123	1.000				
Exchange	0.020	0.045	0.048	-0.214	0.104	0.143	0.187	0.023	-0.050	0.207	0.034	1.000			
Deal-Value	-0.060	-0.100	-0.054	-0.448	0.104	0.144	-0.119	0.227	0.257	-0.139	0.445	0.160	1.000		
Major-Group	0.005	0.018	0.053	-0.016	-0.384	-0.365	0.103	0.067	0.012	-0.094	0.040	-0.137	-0.004	1.000	
Tot-Assets	-0.199	-0.248	-0.195	0.366	-0.034	0.030	-0.292	0.265	0.382	-0.453	0.499	-0.036	0.577	-0.022	1.000

Table 6: Multicollinearity Table

Variable	*VIF*	*1/VIF*
Without control variables:		
Relat-macro	1.88	0.532969
Relat-mid	1.84	0.542207
Log(Current)	1.56	0.641492
Log(DE)	1.51	0.663600
Log(ROA)	1.37	0.731645
Log(EPS)	1.36	0.733300
Log(Size)	1.21	0.825459
Diff-Geo	1.09	0.919742
Mean VIF	*1.48*	
With control variables:		
Deal-Value	6.74	0.148393
Tot-Assets	5.99	0.167049
Log(Size)	5.10	0.196245
Relat-macro	1.98	0.505709
Relat-mid	1.93	0.517289
Log(EPS)	1.90	0.526037
Log(Current)	1.81	0.552717
Log(DE)	1.53	0.652430
Log(ROA)	1.42	0.702041
Major-Group	1.26	0.796517
Diff-Geo	1.21	0.824524
Acq-Exchange	1.17	0.854244
Mean VIF	*2.67*	

Table 7: Table of Articles

Authors	Sample Period	Countries	Main Independent Variables	Main Dependent Variables	Relation
Moeller et al. 2004	1980-2001	USA	Firm size, Relative size	Abnormal announcement returns	—
Alexandritis et al. 2013	1981-2007	USA	Deal size, Acquisition premia	Shareholder gains	—
Högholm 2016	2000-2013	Finland	Deal size, Relative size of the deal	Abnormal returns	—
Tunyi 2019	1987-2016	UK	Firm size	Takeover likelihood	+ / —
Wilcox Dixon et al. 2001	1985-1998	Various	Firm size	M&A valuation	+
Fuller et al. 2002	1990-2000	USA	Relative size	Abnormal returns	+ / —
Homberg et al. 2009	1980-2005	Various	Industry relatedness	Acquisition success and synergies	—
Singh & Montgomery 1987	1970-1985	USA	Industry relatedness	Economic performance	+
Salter & Weinhold 1978	1950-1975	USA	Industry relatedness	Firm performance	+
Gugler et al. 2003	1981-1998	Global	Industry relatedness	Post-merger performance	+
Lim & Lee 2016	1985-2008	Global	Industry relatedness	Cross-border acquisition completion	—
Miller 2006	1990-2000	USA	Industry relatedness	Firm performance	+
Pennings et al. 1994	1966-1988	Netherlands	Industry relatedness	Expansion project success (longevity)	+
Chakrabarti & Mitchell 2013	1980-2003	USA	Difference in Geography	Acquisition target selection	—
Mtar 2010	1980-2000	France, UK	Institutional distance	Post-acquisition integration outcomes	—
Ragozzino 2009	1993-2004	USA	Geographic distance	Foreign acquisition activity	—

Liu & Qiu 2013	1991-2007	USA	Geographic distance	Post-merger performance	—
Drymbetas & Kyriazopoulos 2014	1998-2009	Western Europe	Geographic distance	Stock price reaction	+
Dewenter 1995	1978-1989	USA	Geographic distance	Shareholder wealth gains (takeover premia)	+ / —
Asiri 2015	2000-2013	UK	Profitability	Market value (MB ratio, PE ratio, Q-ratio)	+
Reyes et al. 2020	1992-2015	USA	Profitability	Firm performance (ROE)	+
Barros & Di Miceli da Silveira 2007	1998-2003	Brazil	Leverage	Leverage ratios	—