

SCHOOL OF ECONOMICS AND FINANCE

FACULTY OF COMMERCE, LAW AND MANAGEMENT



**THE SHORT AND LONG-TERM PERFORMANCE OF
TERMINATED MERGER AND ACQUISITION DEALS
LISTED ON THE JOHANNESBURG STOCK
EXCHANGE**

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Abstract

This study examines the short and long-term performance of companies that experienced terminated Merger and Acquisition (M&A) deals on the Johannesburg Stock Exchange (JSE). The empirical evaluation is conducted over a 24-year period, from 1997 to 2020. It develops short and long-term testable hypotheses for the JSE-listed companies. In the short-term, the standard event study methodology is used to evaluate if there is wealth creation for the acquiring shareholders after the announcement and termination announcement of the M&A deal. The results indicate that the M&A announcement created wealth for shareholders over the sampled period whereas the termination announcement did not. Furthermore, when the sample was split, there was a significant amount of wealth created for the announcements during the 2009 to 2020 period whereas the announcements depleted shareholder value for the period spanning from 1997 to 2008. In the long-term, the performance of companies that experienced terminated and completed M&A deals is assessed by evaluating the operating performance using accounting measures. The results suggest that not participating in M&As is more beneficial to companies as they perform at a higher level than companies that completed M&A deals. Moreover, this study demonstrates that the different deal characteristics that would have been used in the completion of the M&A deal contribute to the acquiring companies' long-term performance.

Declaration

I, Bradyn Ward, declare that this research paper is my work and that I have correctly acknowledged the work of others. It is submitted to fulfil the requirements for the degree of Master of Commerce in Finance at the University of the Witwatersrand, Johannesburg. I declare that this research paper has not been submitted for any other degree or examination in this or any other institution.

A handwritten signature in black ink, reading "Bradyn Ward", with a horizontal line extending from the end of the signature.

Bradyn Ward

February 2022

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Definition of Key Terms

Acquirer's and Target's Industry Group: This refers to the line of business a company is in. It categorises similar companies and this results in 24 industry groups (Bloomberg, 2021).

Acquirer's and Target's Industry Sector: This is the categorisation of companies based on their industry group. Overall, there are 11 industry sectors (Bloomberg, 2021).

Bloomberg Global Database: A data-gathering terminal that has real time data on every market, the latest news, in-depth research, powerful analytics, communications tools and world-class execution capabilities (Bloomberg, 2021).

Completed Deal: M&A deals, which have been completed (Bloomberg, 2021).

Current Market Capitalisation: The total current market value of all of a company's outstanding shares stated in the pricing currency. This is defined as a measure of size (Bloomberg, 2021).

Friendly Bid: A bid made by the acquiring firm to purchase the target firm where the management or board of directors of the target firm recommends the acquisition (Bloomberg, 2021).

Hostile Bid: A bid made by the acquiring firm to purchase a target firm in which the target firm's management or board of directors objects to the acquisition (Bloomberg, 2021).

Investment Deal: A deal with minority purchases, private equity, investments or venture capital rounds of financing (Bloomberg, 2021).

Johannesburg Stock Exchange: The largest stock exchange in Africa. It is in Sandton, South Africa and has a market capitalisation of 1.82 billion US Dollars (Johannesburg Stock Exchange, 2022).

Joint Venture Deal: Deals with transactions undertaken jointly by two or more parties that otherwise retain their distinct identities (Bloomberg, 2021).

JSE All Share Index: The All-Share Index is a market capitalisation weighted index consisting of all eligible securities listed on the Main Board of the JSE (Johannesburg Stock Exchange, 2022).

Merger and Acquisition Deal: A deal that involves the acquisition or sale of control in a company or asset for strategic purposes (Bloomberg, 2021).

Pending Deal: M&A deals, which have been announced but are pending closure (Bloomberg, 2021).

Proposed Deal: M&A deals that have not been signed or announced (Bloomberg, 2021).

Return on Assets: An indicator of how profitable a company is relative to its total assets. This demonstrates how efficient management is at using the company's assets to generate earnings (Bloomberg, 2021).

Return on Equity: A measure of the corporation's profitability by revealing how much profit a company generates with the money shareholders have invested (Bloomberg, 2021).

Terminated Deal: M&A deals, which were pending but have since been terminated (Bloomberg, 2021).

Unsolicited bid: A bid made by an acquiring firm to purchase a company that is not actively seeking a buyer (Bloomberg, 2021).

Withdrawn Deal: M&A deals, which were signed and pending but have since been withdrawn (Bloomberg, 2021).

CHAPTER 1

INTRODUCTION

1.1 Background

In recent years, there has been substantial development in Mergers and Acquisitions (M&As) on a global scale. This surge in popularity can be accredited to the fact that M&As are a mechanism used for capital restructuring and are efficient in producing inorganic growth for the company. An M&A is defined as the acquisition or sale of control in a company or asset for strategic purposes (Bloomberg, 2021). As a result, two independent firms combine to become one company. The main motivation for participating in an M&A deal is to generate synergies because the shared resources would enable companies to maximise their economic gains. This suggests that completing an M&A deal can help a company acquire new resources, expand its customer base, participate in different markets, enhance the growth in market share and improve the firm's competitiveness through economies of scale (Harrison, Hitt & Ireland, 2001). Although M&As present many advantages, some firms do not successfully complete an M&A deal. Brock, Calipha and Tarba (2010) state that numerous phases require completion before an M&A deal is successfully closed. The process is as follows: create an M&A strategy; identify the acquisition criteria; search for a target firm; plan the acquisition; value the target firm and evaluate the synergies; negotiate the deal; run due diligence checks; finalise the purchase and sales contract; identify the financing method and implement the M&A deal. This is an extremely complex process and M&A deals can terminate at any of the above-mentioned stages. In this study, a terminated deal refers to a deal that was announced but has since been terminated (Bloomberg, 2021). A termination could result because of several reasons. Firstly, there is a price disagreement between the acquiring and target companies. Secondly, the deal presents regulatory concerns because the market may be too saturated and lastly, the investigative audit during the due diligence test presents evidence of inaccurate expectations. Because of this, the termination of an M&A deal could have a profound impact on the short and long-term performance of the acquiring company.

1.2 Research Problem

M&A strategies have been empirically studied for several decades. Therefore, arguably, there is substantial evidence evaluating the performance of completed M&A deals in developed and emerging economies (Alagidede & Amewu, 2018; Goergen & Renneboog, 2004; Martynova & Renneboog, 2006). However, the research about the termination of M&A deals subsequent to the announcement

is contestably limited. Luo (2005), Masulis, Swan and Tobiansky (2011) and Liu (2018) evaluated the short-term shareholder wealth effects of terminated M&A deals in developed economies. But, debatably, there is no research regarding the wealth effects of companies that experienced terminated M&As in an emerging economy such as South Africa. Additionally, the long-term performance of companies that completed deals has been widely researched in both emerging and developed economies (Bertrand & Betschinger, 2012; Boubaker & Hamza, 2014; Grigorieva & Petrunina, 2015; Manasakis, 2009). The empirical results are inconclusive as to whether M&As create value. However, there is no empirical evidence evaluating the performance of companies that do not complete M&A deals. Therefore, the examination of companies that experienced terminated M&A deals lacks empirical support and it is uncertain whether the acquiring firm will experience deterioration or improvement in its long-term performance. It is also unclear whether the termination announcement will create or destroy value for the acquiring shareholders. Hence, this study acts as an addition to the existing body of knowledge and will improve the literature appertaining to terminating M&A deals.

1.3 Research Objectives

The primary objective of this study is to evaluate the short and long-term performance of companies that experienced a termination in M&A deals. To do so, the following sub-objectives are examined:

- An analysis of the average abnormal returns (AAR) at the announcement of the M&A deal and at the announcement of the termination of the M&A deal.
- An analysis of the cumulative average abnormal returns (CAAR) around the announcement and termination announcement of the M&A deal.
- An analysis of the operating performance of companies that experienced a termination in M&A deals.
- An analysis of the operating performance of companies that experienced terminated M&A deals in comparison to those that completed M&A deals.
- An analysis of the impact of the deal characteristics on the performance of companies that experienced terminated M&A deals.

1.4 Hypotheses Testing

The following hypotheses have been formulated in line with the research objectives:

Hypothesis I:

H₀: There are no statistically significant shareholder wealth effects at and around the announcement and termination announcement of the M&A deal.

H_A: There are statistically significant shareholder wealth effects at and around the announcement and termination announcement of the M&A deal.

Hypothesis II:

H₀: There is no statistically significant operating performance for the acquiring firm after the announcement that the M&A deal will be terminated.

H_A: There is a statistically significant operating performance for the acquiring firm after the announcement that the M&A deal will be terminated.

Hypothesis III:

H₀: There is no statistically significant difference between the long-term performance of companies that experienced terminated and completed M&A deals.

H_A: There is a statistically significant difference between the long-term performance of companies that experienced terminated and completed M&A deals.

Hypothesis IV:

H₀: The deal characteristics that would have been used for the M&A deal have no statistically significant impact on the long-term performance of companies that experienced terminated M&A deals.

H_A: The deal characteristics that would have been used for the M&A deal have a statistically significant impact on the long-term performance of companies that experienced terminated M&A deals.

1.5 Importance and Benefits of this Study

The contents of this study will have a profound impact on the literature surrounding M&As. Preceding this study, there has been an abundance of literature evaluating the short and long-term performance of completed M&As. However, disputably, minimal research has evaluated the impact of M&As failing to close after the announcement. Therefore, shareholders and managers of companies participating in M&As would benefit from the valuable knowledge gained from research into this field. This topic will elucidate the effects of terminated M&A deals as it will look at a dynamic perspective that has not been explored in emerging markets such as South Africa.

1.6 Structure of this Study

This study has five chapters and is organised as follows: **Chapter 2** evaluates the literature regarding completed and terminated M&A deals, and **Chapter 3** outlines the methodology used to study the short-term wealth effects and long-term firm performance of companies that experienced terminated M&As. Then, **Chapter 4** presents the empirical results as **Chapter 5** summarises the content of this study.

CHAPTER 2

LITERATURE REVIEW

This chapter evaluates important academic theories for M&A strategies. The theory identifies the potential motivations for participating in M&As and assesses the empirical literature for the short-term wealth effects and the long-term impact of completed M&A deals. Furthermore, the effect of the deal characteristics is evaluated. By doing so, this study provides a comprehensive understanding of the benefits of M&As in emerging and developed economies. Lastly, the limited literature for terminated M&A deals is critically reviewed. This extensive evaluation of M&A strategies provides an important basis for this study.

2.1 Motivations to Participate in M&A Deals

The main aim of a company is to maximise shareholder wealth. This aim can be achieved by investing in profitable organic and/or inorganic growth options. Organic growth is the growth that results from an increase in sales and expansion from utilising the companies' resources. This growth can be achieved by optimising a company's key commercial capabilities by reducing costs, pricing their products strategically and increasing marketing, or the company could reallocate capital to operations that perform well or, lastly, the company could use research and development to produce new and improved products (McKinsey & Company, 2017). A survey conducted by McKinsey and Company (2017) indicates that companies that are outperforming the markets are using all three growth strategies, with their primary focus being the creation of new products, services or business models. On the contrary, inorganic growth refers to growth that is accomplished by opportunities outside of the company. The primary inorganic growth mechanism is M&As, which can provide exponential growth abilities if utilised correctly.

There is a plethora of literature exploring the main incentives for participating in M&A deals (Berkovitch & Narayanan, 1993; Campbell & Goold, 1998; Mueller & Sirower, 2003; Pettit, Seth & Song, 2000; Trautwein, 1990). Berkovitch and Narayanan (1993) hypothesise that firms participate in M&As for synergy, agency and hubris reasons. The synergy hypothesis states that two firms merge to maximise the economic gains that result from shared resources. The growth from synergies can result from combined negotiating power and creativity, economies of scale, shared knowledge and resources, elimination of inefficiencies, vertical and horizontal integration, industry consolidation as well as harmonised strategies (Allen, Brealey & Myers, 2011; Campbell & Goold, 1998). Trautwein (1990) states that this type of growth can increase market power and provide certain expertise that

could benefit the acquiring company. Baker, Kiymaz and Mukherjee (2004) and Pettit et al. (2000) state that synergy is the main motivation for M&As. The agency hypothesis states that managers participate in M&A deals because of personal objectives rather than to maximise the wealth of the firm's shareholders. Lastly, M&As could occur because of the hubris hypothesis. This hypothesis states that the managers or board of directors will participate in M&As because they think they have valuable information that is unavailable to the market. In this case, the managers are optimistic and believe that the M&A deal will provide important benefits. Overall, it is evident that several motivating factors lead companies to participate in M&As.

2.2 Short-Term Wealth Effects

The announcement of an M&A deal results in new information being presented to the market. In the seminal paper by Fama (1970), the author states that prices should reflect all the information that is available to the market. This includes historical data, all public information as well as private company information. Since there is new information in the market, prices should adjust to reflect this. Therefore, the announcement of an M&A deal and the announcement that the deal will be terminated should cause investors to revise their confidence in the firms' forecasts and thus, the share prices should change to adequately reflect these reactions. The results from the event study provide valuable information regarding the investors' expectations and perspectives of the deal, which, in turn, can indicate the M&As profitability and ultimately the success of the deal. This study focuses on the South African market, which is referred to as an emerging market. An event study in an emerging market may provide different results to studies conducted in developed markets. This could result from the efficiency of the financial markets, the quality of the companies as well as the rate at which information is distributed to the participants in the market (Arik & Kutan, 2015). The existing literature evaluates emerging and developed economies to determine whether completed M&A deals create value for shareholders.

2.2.1 Short-Term Wealth Effects in Emerging Economies

There is a growing body of literature exploring the short-term wealth effects of M&A deals in an emerging economy. The empirical findings in these studies differ depending on the country that is being analysed. Alagidede and Amewu (2018) explore whether M&A announcements create value for acquiring shareholders in the African markets. The results in this study indicate that both the African (including South Africa) and South African markets experience significant and positive AARs on the day of the announcement, 0.009% and 0.007% respectively. When analysing the Indian market, Jain, Rani and Yadav (2015) provide similar evidence as there was an immediate positive

reaction to the public M&A announcement. This causes the share price to increase in value, with the acquiring firms experiencing positive and statistically significant AARs of 1.32% on the day. Furthermore, Chu, Ma and Pagán's (2009) evidence indicates that there is a 0.43% AAR on the announcement day in 10 Asian stock markets. On the contrary, Fabich, Kinatader and Wagner (2017) provide evidence of a slightly negative and statistically insignificant market reaction to the M&A announcements in the BRICKS (Brazil, Russia, India, China, South Korea and South Africa) markets where the acquiring firms experience AARs of -0.12%.

To assess the total magnitude of the returns, one must consider the cumulated AARs. When analysing the returns over a 51-day event window, Alagidede and Amewu (2018) find that the African (excluding South Africa) and South African markets experienced CAARs of 9.5% and 1.01%, respectively. The authors find evidence that a wider event window leads to more significant CAARs. Jain et al. (2015) present evidence indicating that if the investors were to buy the stock 20 days before the announcement and hold it for 20 days after, they would make a cumulative gain of 0.56%. This suggests that the short-term impact of the announcement is beneficial for investors. These findings confirm the evidence presented by Banerjee, Deisting and Sehgal (2012) in the BRICKS markets, Jain, Rani and Yadav (2013) in the Indian market and Fabich et al. (2017) in the BRICS markets.

2.2.2 Short-Term Wealth Effects in Developed Economies

The announcement effect of M&As has been substantially researched in developed markets. However, the empirical evidence indicates varied results. Goergen and Renneboog (2004) evaluate the short-term wealth effects of European M&As. The results indicate that the acquiring firms experience small gains of 0.7% on the announcement day. In line with these findings, evidence from Martynova and Renneboog (2006) indicates that acquiring firms in Continental Europe and the United Kingdom (UK) earn 0.5% returns on the announcement day.

The announcement returns indicate the market reaction on the day. However, the cumulated returns around the event day indicate the total magnitude of the returns. Otto, Sampaio and Silva (2021) conducted a study on 336 announcements from acquirers listed in countries classified as developed markets. Their evidence indicates that developed countries experience significant positive cumulated returns of 1% over a 5-day event window. Goergen and Renneboog (2004) and Martynova and Renneboog (2006) provide evidence to support the findings of Otto et al. (2021). The results indicate that the UK outperforms those in Continental Europe. In contrast, Alexandridis, Petmezasm and Travlos (2010) provide evidence that M&As in the United States (US), UK and Canada experience

negative CAARs, between -1.34% and -1.58%, over a five-day event window. Therefore, the empirical evidence presents contradicting results in developed economies.

2.3 Long-Term Wealth Effects

Since the 2000s, there has been almost triple the number of M&As per quarter and this indicates the rise in popularity of M&As (Bloomberg, 2021). This popularity directly results from the capital restructuring capabilities and the potential growth from the investment. As stated in Section 2.1, there are numerous motivations to participate in M&A deals. Sometimes, these motivations are undisclosed. However, they determine whether the M&A will add or destroy value in the subsequent years. Therefore, if the M&A occurs because of the possible synergies, it could result in an improvement in the long-term performance. But, it must be noted that there is the possibility that the company overestimates the benefits of the synergies. In this case, the cost of the M&A could outweigh the benefits (Campbell & Goold, 1998). Hence, the performance of the company after the completion of the M&A deal could deteriorate. Further deterioration in the company's performance could be the result of participating in the M&A deal for incorrect reasons. These include the pursuit of the managers' objectives as well as over-optimistic beliefs about the target firms. Consequently, the choice to participate in an M&A can affect the long-term performance of the firm. Numerous techniques have been used to evaluate the performance of M&As. Despite the use of these different methodologies, the literature is evaluated in emerging and developed economies to evaluate the long-term impact of participating in M&As.

2.3.1 Long-Term Wealth Effects in Emerging Economies

The empirical literature on the long-term wealth effects of M&As in an emerging economy is continuously growing. This is because M&As are becoming progressively popular in these markets. Grigorieva and Petrunina (2015) studied the long-term performance of M&A deals in 23 developing countries; South Africa was included in this analysis. The results indicate that there was a deterioration in the combined performance of the target and acquiring firm after the M&A deal was completed. The long-term performance deterioration is confirmed by Mantravadi and Reddy (2008) in the Indian market, Bertrand and Betschinger (2012) in the Russian market and Narayan and Thenmozhi (2014) in numerous other emerging markets. A possible explanation for this deterioration could be poor corporate governance, inadequate information disclosure, cultural clashes resulting from the inability to integrate successfully and inefficient monitoring in the acquirer's country. However, it is important to note that there is evidence of improved performance after the successful completion of the M&A deal which likely resulted from the attainment of expected synergies (Andre,

Chou & Yen, 2013; Leepsa & Mishra, 2012). Therefore, the evidence from the emerging market does not lead to a homogeneous result.

2.3.2 Long-Term Wealth Effects in Developed Economies

The combined firm performance after the completed M&A deal has been widely researched in developed markets. However, there is no consensus as to whether M&A deals are beneficial for the acquiring firm. Martynova and Renneboog (2008) compiled the empirical findings of the long-term performance of M&As over the five merger waves for developed countries. The results accumulated from the 19th century indicate varying results. There was substantial evidence indicating that M&As are not beneficial as performance is seen to deteriorate for several years after the completion of the M&A deal. These findings are confirmed by more recent studies in the US, UK, and other developed markets (Devos, Kadapakkam & Krishnamurthy, 2009; Manasakis, 2009). However, there is also substantial evidence indicating that some M&A deals integrate successfully and create synergies because the post-M&A performance improves for a number of years after the completion of the M&A deal. These findings are confirmed by Humphery-Jenner and Powell (2011) in the Australian market, Boubaker and Hamza (2014) in the UK market and Glamboosky, Jory and Ngo (2020) in the US market. Therefore, the empirical evidence indicates contradicting results when determining whether M&A deals are beneficial for long-term firm performance.

2.4 Deal Characteristics

M&A deals all have their distinctive characteristics. However, certain deal characteristics remain consistent for all the deals. These include the method of payment used by the acquirer, the industry relatedness of the M&A and the nature of the bid. This information is public and signals valuable information regarding the potential benefit of the M&A deal on the acquiring company. The literature regarding each characteristic is investigated in both developed and emerging economies as well as in the short and long-term.

2.4.1 Method of Payment

The acquiring company has a variety of payment methods to choose from when acquiring a target firm¹. The method chosen is of the utmost importance as it impacts the long-term performance of the firm. Jensen (1986) postulates that a cash payment is more beneficial for the long-term performance

¹ The different payment methods include cash only, stock only, a combination of cash and stock, debt, and a combination of stock and debt.

of a company because it reduces the amount of unbonded funds, thus reducing the agency costs of free cash flow. However, Myers and Majluf (1984) suggest that an equity payment is more valuable because the acquiring company can convert overpriced equity into real assets. As a result, market participants perceive the type of payment method as a signal, which impacts the acquirer's performance around the announcement of the M&A.

In the short-term, the type of financing strategy may create value for the acquiring shareholders. When evaluating the M&A announcement effects in an emerging market, it is possible that equity-financed deals could be treated favourably by investors. Banerjee et al. (2012) state that this is because of the 'Investment Opportunity' Hypothesis and 'Risk Sharing' Hypothesis. The former hypothesis is linked to growth opportunities because a company would aim to save cash to invest in high growth opportunities. This means that equity would fund their inorganic growth through M&As. The latter hypothesis assumes that emerging markets are not fully information efficient, resulting in unfair corporate evaluations. Consequently, the acquiring company can share the risk of the M&A with the target shareholders. In addition, the acquiring company may be afraid of overpaying when financing the deals with cash because of competitive bidding. This overpayment could cause an erosion of the value created by the M&As. Alagidede and Amewu (2018) and Banerjee et al. (2012) provide evidence to support the claim that equity-financed deals outperform those financed by cash in the South African and BRICKS markets. However, there is empirical evidence that indicates that cash outperforms equity in the short-term (Jain et al., 2015; Smit & Ward, 2007). In developed markets, Martynova and Renneboog (2008) evaluated a compilation of the announcement affects, categorised by financing strategy, over five M&A waves in the US, UK, Continental Europe and Asia. The authors' findings indicate that the acquiring firms that finance the deals with equity in the US, consistently experience negative abnormal returns around the announcement date. These M&A deals substantially underperform when compared to all-cash bids. Jager (2018) provides evidence from the Western European market to support this evidence. It is important to acknowledge that there are studies that indicate that deals financed solely by equity result in wealth creation for the shareholders of the acquiring firm (Martynova & Renneboog, 2008; Wulandari & Wang, 2015).

As stated above, the payment method used to finance the M&A deal can significantly impact the long-term performance of the firm. Grigorieva and Petrunina (2015) evaluate the long-term performance of M&A deals in countries classified as developing by the International Monetary Fund. The results indicate that deals financed by cash outperform those funded by equity. However, Guariglia, Guo and Yang (2019) provide evidence that Chinese firms that fund their M&As with equity outperform those funded by cash. In the study, the authors found that the firms that finance

their deals with cash perform better than the equity-financed deals before the M&A took place. Therefore, the managers may participate in M&As for their private interests or because of a lack of investment opportunities. There is empirical evidence in line with post-M&A findings that equity-financed deals are more beneficial (Bi & Boateng, 2013; Cao, Rao-Nicholson & Salaber, 2016). When evaluating the empirical evidence from developed economies, the results are varied. Mager and Meyer-Fackler (2017) support the notion that deals financed by cash outperform those financed by equity. Whereas there is contradictory evidence from several empirical papers (Heron & Lie, 2002; Martynova & Renneboog, 2008). Overall, it is evident that in the short and long-term, there are contradicting opinions concerning which financing strategy creates value.

2.4.2 Industry Relatedness

An M&A can occur in the same industry as the acquirer or it could occur across different industries. However, it is believed that M&As that occur within the same industry are more beneficial in the long-term (Malmendier, Moretti & Peters, 2018). This is because an M&A in a related industry would significantly reduce integration costs as well as help the company gain additional industry knowledge, expertise, clients and complementary resources. Overall, the related M&A would increase the competitive advantage and profitability of the firm which would create value for shareholders and improve the long-term performance of the acquiring firm.

In the short-term, the relatedness of the M&A makes an impact on how the investors react to the M&A deal announcement. In the emerging markets, Alagidede and Amewu (2018) provide evidence from Africa as well as South Africa to support the notion that related industry M&A announcements create value for the shareholders whereas no value is created for shareholders in cross-industry M&As. These findings are supported by Barai and Mohanty (2010) in the Indian market. It is possible that these findings result from monotonicity of firms and the inexperience of managers who often only have an industry-specific skill set. Therefore, the ease of skill transferability in the same industry is preferable regarding M&As. In addition, emerging markets are becoming saturated with multinational firms, which leads to a more competitive environment. As a direct consequence, related M&As could act as an approach to survive these competition effects as the firm can increase its size as well as obtain additional market share. In the developed economies, there is evidence to support the findings that suggest that industry related M&As create value for the shareholders (Alexandridis et al., 2010; Goergen & Renneboog, 2004; Martynova & Renneboog, 2006). Therefore, related M&As are more beneficial in creating shareholder value.

In the long-term, the empirical evidence documenting the effects of industry related and diversifying M&As in developed and emerging economies is continuously growing. Because of the nature of developed and emerging economies, a diversifying M&A may be more beneficial in an emerging economy. A reason for this could be that emerging markets have less organised capital markets, uncompetitive product and labour markets and a low level of contract enforcement (Cao et al., 2016). Thus, the acquiring firms can benefit from the different market rules. There is empirical evidence in line with these findings as the acquiring firms experience gains after participating in diversifying M&As (Cao et al., 2016; Guariglia et al., 2019; Kruse, Park, Park & Suzuki, 2007). Additionally, unrelated M&A deals could be related to higher post-M&A firm value because a firm may be seeking higher growth opportunities in other well performing industries. However, there is also evidence indicating that related M&As are beneficial for long-term performance (Ghosh, 2001; Heron & Lie, 2002). Hence, the evidence from both types of economies does not provide a definitive answer.

2.4.3 Nature of the Bid

An M&A bid can be classified as friendly, hostile or unsolicited. These categories are driven by the management or board of directors of the target firm's support of or objection to the deal. A friendly bid refers to a bid made by the acquiring firm to purchase the target firm where the management or board of directors of the target firm recommends the M&A. This type of bid is the most common and represents 95% of all M&A bids (Bloomberg, 2021). Jensen (1988) states that managers or board of directors will oppose an acquisition because of their sentiment towards the companies they have built. Therefore, by overtaking the company, the new managers are more inclined to abandon main projects, change the managerial assignment as well as close or sell facilities and divisions. By doing so, it would cause key restructuring in the company. The previous management would be less inclined to make these changes and this would cause inferior performance for the firm. This indicates that these firms are undervalued and management will likely be replaced after the acquisition. It must be noted that there is limited empirical evidence solely on hostile acquisitions. The literature primarily focuses on the other deal characteristics because of the limited number of hostile bids.

The announcement of the M&A deal reveals information regarding the nature of the bid. This information invokes certain perceptions regarding the prospects of the impact of the M&A deal on the acquiring firm in the long-term. In developed economies, Goergen and Renneboog (2002) conducted a study in the European market. The authors' results indicate that the announcement of a hostile (friendly) M&A results in a negative (positive) AAR of -2.5% (2.5%). This reaction could be because the opposition from the target firm will ultimately lead to the acquiring firm reviewing their

offer, which could cause a higher bid premium. In doing so, there would be an erosion of the synergy value accumulated by the acquiring shareholders. These results are in line with studies conducted in developed and emerging economies (Alexandridis et al., 2010; Fabich et al., 2017; Martynova & Renneboog, 2006). Therefore, the announcement that the nature of the bid is hostile will likely destroy value for acquiring shareholders.

In the long-term, participating in an M&A deal that is hostile impacts the long-term performance of the acquiring firm. As stated by Jensen (1988), a hostile bid is used to overthrow the management and restructure the firm. This could be an extremely complex process that requires lots of time and capital. However, it could be a valuable growth opportunity as the target company may possess a strong position in the market. In the developed markets, Mahate and Sudarsanam (2006) present evidence that hostile acquisitions outperform friendly bids. However, it is important to note that all returns were negative, indicating that companies participating in hostile M&As performed poorly in the long-term. The deterioration in long-term performance is confirmed by empirical evidence from emerging and developed markets (Devos et al., 2009; Glambosky et al., 2020; Mager & Meyer-Fackler, 2017). O'Sullivan and Tuch (2007) state that the increased premiums paid for the acquisition can erode the prospective wealth that the M&A would have created and this would cause a negative impact on long-term performance.

2.5 Deal Status

An M&A deal can be classified into five different statuses. These statuses refer to the level of completion of the M&A deal. The M&A could be proposed, pending, completed, terminated or withdrawn. Literature concerning completed M&As is exhaustive. However, there is limited literature examining the termination of an M&A deal. The following section evaluates the valuable literature available regarding terminated M&A deals.

2.5.1 What Causes M&A Deals to be Terminated?

Over the last 20 years, 78% of M&A deals were completed and 8% of deals over the same period failed to close (Bloomberg, 2021). Each deal is unique and failure to close results from various circumstances revealing that there is an abundance of reasons for each termination. Bahreini, Bansal, Finck and Firouzgar (2019) conducted an empirical study to ascertain why M&As would not close after the announcement. Their results indicate that out of 2500 M&A deals, only 265 deals failed to close over a five-year period. Out of the 265 deals, the main reasons for the termination of deals were

the consequence of a price disagreements between the acquiring and target firms (42%), regulatory or antitrust concerns (14%), post due diligence (6%) and organic growth focuses (6%).

An alternative reason for the termination of the M&A deal is the type of market response experienced after the M&A announcement. Jennings and Mazzeo (1993) and Liu (2018) state that this impacts the completion of the deal. For example, if the management and Chief Executive Officer (CEO) of the acquiring firm observe a favourable reaction to the announcement, there will be a higher incentive to complete the deal. This increased incentive could cause a negotiation of the deal structure and deal terms to a better agreement for the target firm (Luo, 2005). On the contrary, the decision to terminate the M&A deal could be enhanced if there are unfavourable returns after the announcement. This finding is confirmed in a study conducted by Chira, Garcí'a-Feijó' and Madura (2017) who demonstrate that the market's response to the announcement affects the acquirer's decision regarding the termination of the M&A deal. Hence, the announcement is a crucial aspect of a successful M&A deal.

2.5.2 The Effect of Terminated M&A Deals

Often, investors perceive the termination of an M&A deal as a waste of valuable time and resources by senior managers. In addition, the company will sustain failure costs such as advisory and termination fees following a terminated deal (Davidson, Glascock & Neahauser, 2011). For these reasons, companies face consequences, other than failing to complete a deal, which impact the reputation and share price of both the target and acquiring firms.

In the short-term, Liu (2018) evaluates the shareholder wealth effects of terminated M&As in the US market. The results indicate that around the announcement of the termination, the mean of the CAAR over a three-day event window was 1%. In addition, Masulis et al. (2011) provide evidence that the acquiring firms experience a mean AAR of 0.31% over a five-day event window around the termination announcement. This evidence was gathered from the Australian, Canadian, UK and US markets. Therefore, the evidence indicates that the market favours deal termination announcements. A possible explanation for the favourable returns around the termination announcement could be that market participants perceive the M&A deal as detrimental to the long-term performance of the acquiring firm. Thus, the investors were pleased with the termination as the acquiring company does not have to waste valuable resources on a fruitless M&A. Furthermore, the authors move on to evaluate whether there is a reversal in the returns between the announcement and termination announcement of the M&A deal. Liu (2018) provides evidence of a negative relationship between the two announcements. This is evident as the mean of the CAARs over a three-day event window

around the announcement (termination announcement) returns were -1.5% (1%). When looking at the mean of the AARs in a five-day event window, Masulis et al. (2011) confirm the findings by Liu (2018). This evidence indicates that if the market reacts negatively to the M&A announcement, there will be a reversal in the reaction when the market discovers that the deal has been terminated. However, evidence of this exists only in developed markets.

2.5.3 Measures to Prevent Terminated M&A Deals

Numerous measures can be put in place to prevent an M&A deal from failing. For example, acquiring and target termination fees can be implemented as these provide an incentive to complete the M&A deals. A termination fee is a contingent payment to one party, which is required to be settled if the management of the counter party terminates the agreement (Butler & Sauska, 2014). Butler and Sauska (2014) conclude that there is a greater probability of finalisation and fulfilment of the M&A deal when there are termination fees within a contract. However, if the termination fees are too low (less than 2.8% of the deal amount), the probability of termination increases. If there are no termination fees, the likelihood of termination increases substantially. Therefore, if the target management is serious about completing the M&A deal, having a rational termination fee signals an increased interest in the acquiring firm. In addition, if the firms want to strive for completed deals, Bahreini et al. (2019) state that the acquiring and target firms should communicate effectively, keep abreast of the regulators' concerns and actively monitor political and government affairs.

2.6 Summary of Literature Review

This chapter evaluated important academic theories for M&A strategies. The theory indicates that the main reason companies participate in M&As is to generate synergies. If these synergies are realised, there probably will be an improvement in the long-term performance of the company. However, if the managers participate in the M&A deal because of their objectives or optimistic beliefs about the target firm, it may lead to a deterioration in the company's performance. With these studies in mind, it is apparent that the evidence of the overall effects in the short-term and the long-term performance of completed M&A deals is inconclusive. Further empirical evidence indicates that the different deal characteristics significantly contribute to overall performance. Market participants react differently depending on the method of payment, relatedness of the industry and the nature of the bid. In the long-term, these characteristics determine the success of the M&A as they indicate the possible synergies that could be achieved. Lastly, the termination of an M&A deal can be accredited to a number of reasons including a price disagreement, regulatory or antitrust concerns, post-due diligence,

organic growth focuses and the market reaction to the M&A announcement. The empirical literature for terminated M&A deals is scarce and arguably pertains predominantly to developed markets. Overall, the literature review provides a relevant basis for this study. The next chapter discusses the methodology.

CHAPTER 3

DATA AND METHODOLOGY

This chapter outlines the sample selection criteria, a sample overview and the methodologies applied for the analysis of the short and long-term. The short-term methodology is used to assess whether there is value creation around the announcement and termination announcement of the M&A deals. The long-term methodology is used to compare the performance of companies that experienced terminated M&A deals to those that completed M&A deals as well as to evaluate the long-term impact that different deal characteristics have on the performance of companies that experienced terminated M&A deals.

3.1 Sampling and Data Collection

This study examines publicly traded South African companies that experienced a terminated M&A deal from 1997 to 2020. The 24-year period is used to generate a significant and adequate sample for the analysis. In addition, the evaluation of these companies in the short and long-term covers different macroeconomic conditions, which paints a realistic image of the performance of the M&As. The secondary data is gathered from the Bloomberg Global Database (BGD). The information obtained from BGD displays data on the acquirer's name, the target's name, the announcement date, the termination date and additional information that is required for the analysis. The sample for the short and long-term analysis is selected based on the following criteria:

1. The deal status of each M&A transaction is terminated.
2. The acquirer is a public firm listed on the Johannesburg Stock Exchange (JSE). Delisted firms are excluded to avoid results being biased downwards.
3. The acquiring company is located in South Africa.
4. The transaction's deal type is an M&A.
5. For the short-term analysis, it is important that the acquirer is active and has daily stock price data on BGD. There is a minimum of 250 observations of daily stock price data before and after each event date². The decision to conduct the empirical study as mentioned is because

² The event dates refer to the announcement and the termination announcement of the M&A deal, which will now on be referred to as "events".

of the beta estimates which require sufficient data points. If there is data for only one event, the company is removed from the sample.

6. For the long-term analysis, the acquiring firms are required to have financial statement data for at least three years before and after the termination of the M&A deal. Due to this criterion, deals are selected from 1997 to 2017 and performance measures are collected from 1997 to 2020. The deals are selected until 2017 because it allows each transaction to have three years of financial statement data after the announcement of the termination. The BGD database is used to collect accounting data for each transaction.

As previously mentioned, this study aims to compare the operating performance of companies that experienced terminated M&A deals to those that completed deals. Hence, data for companies that completed M&A deals is required for this study. The selection criteria for the completed deals are akin to those for the terminated deals. Since there are a considerable number of companies that completed deals, it is essential to filter out the deals based on certain criteria. The criteria are as follows: each completed deal requires information regarding the method of payment (cash, stock and a combination of cash and stock), nature of the bid as well as the industry group of the acquiring and target firms. In addition, the acquirer's current market capitalisation at the time of the M&A is required to be between 7.5 and 300 billion. This range is chosen because of the upper and lower limit of the market capitalisations for companies that experienced terminated M&A deals. By doing so, this ensures a fair comparison between the companies.

3.1.1 Sample Overview

The sample criteria stated above is applied on the BGD to identify the M&A deals applicable for this study. Table 3.1 illustrates the filters applied for the short-term deals. It is evident that the final sample consists of 103 terminated M&A deals. It is interesting to note that 21 M&A deals delisted within 250 days of the termination announcement. This is a substantial figure compared to the total number of terminated deals.

Table 3.1: Sample Overview of Terminated M&A Deals in the Short-Term

Description	Number of Transactions
<i>Filters Applied on Bloomberg</i>	
Acquirer is located in South Africa	5882
Deal Status: Terminated	211
Deal Type: M&A	189
Acquirer is public	146
Date: 1 January 1997 to 1 October 2020	145
<i>Cleaning of Data</i>	
Removal of delisted firms	124
Removal of firms with insufficient or no data	103

Note: The number of transactions refers to the number of acquiring firms left after applying the filter or cleaning the data. Therefore, the final number refers to the final sample size in the short-term.

The long-term analysis considers companies that experienced terminated M&A deals as well as those that completed deals. Table 3.2 outlines the filters applied for these companies over the period. Based on the filters applied, 75 companies experienced terminated M&A deals and 168 companies completed deals. As stated above, there are numerous companies that delisted within 250 days of the announcements. Attributable to the extended period in the long-term, there are significantly more delistings for companies that experienced terminated deals. Interestingly, there are 11 firms that were involved in terminated deals that delisted after the event period. Overall, 44 firms that terminated M&A deals delisted from the JSE. When considering companies that completed M&A deals, there have been no delistings. A possible explanation for the frequent delistings of companies after the termination announcement could be because the companies were under extreme pressure to meet the growth expectations and the superfluity of costs and responsibilities associated with being listed³. This extreme growth would have stemmed from the M&A of the target firm. However, once the M&A was terminated, the company had to focus on its core business. The company may have been

³ Being listed on a stock exchange comes with numerous challenges. Firstly, the company is required to publicly disclose their tactical decisions prior to implementation. If the market is extremely saturated, it reduces the competitive advantage which could affect the growth of the company. Secondly, the company has to complete the annual integrated report, this is an extremely arduous undertaking which is time consuming and costly. Lastly, South Africa has low growth environments, untenable labour laws, a regressive education system, and extremely poor short-sighted policy decisions all of which impact listed companies' ability to operate efficiently.

lacking growth opportunities, which resulted in inferior performance. Thus, delisting enables the company to rebuild as they are not under the constant pressure and observation from shareholders.

Table 3.2: Sample Overview of Terminated and Completed M&A Deals in the Long-Term

Description	Number of Transactions
Terminated Deals	
<i>Filters Applied on Bloomberg</i>	
Acquirer is located in South Africa	5882
Deal Status: Terminated	211
Deal Type: M&A	189
Acquirer is public	146
Date: 1 January 1997 to 31 December 2017	137
<i>Cleaning of Data</i>	
Removal of delisted firms	104
Removal of firms with insufficient or no data	75
Completed Deals	
<i>Filters Applied on Bloomberg</i>	
Acquirer is located in South Africa	5882
Deal Status: Completed	4831
Date: 1 January 1997 to 31 December 2017	4330
Deal Type: M&A	3182
Nature of Bid: Friendly, Hostile and Unsolicited	1681
Payment Type: Cash, Stock, Cash and Stock	1113
Acquirer is public	923
Acquirers Market Capitalisation: 7.5 and 300 billion	192
Data for Acquirer and Target Industry Group	181
<i>Cleaning of Data</i>	
Removal of delisted firms	181
Removal of firms with insufficient or no data	168

Note: The number of transactions refers to the number of acquiring firms left after applying the filter or cleaning the data. Therefore, the final numbers in the “Terminated Deals” and “Completed Deals” sections refer to the final sample sizes in the long-term.

3.2 Methodology

The main aim of this study is to evaluate the short and long-term performance of companies that experienced terminated M&A deals. This section evaluates the methodology employed in this study to achieve the above-mentioned objectives.

3.2.1 Short-Term Methodology

To evaluate the short-term wealth effects at the announcement and termination announcement of the M&A deal, the standard event study methodology is used. The primary focus of an event study is to evaluate the price movements around a corporate event. This methodology assumes that the market is fully efficient and that any new information will be reflected in the prices (Fama, 1970). This means that, given rationality in the market, the stock prices should fully reflect the M&A deal announcement as well as the announcement that the M&A deal will be terminated.

The expected returns can be calculated using numerous benchmark return models such as the capital asset pricing model, market model and market-adjusted model (Ibbotson & Jaffe, 1975). Although there are numerous models, the market model is utilised in this study to calculate the expected returns for each firm during the period surrounding the event (Brown & Warner, 1985). Jain et al. (2015) state that this methodology provides the most statistically reliable evidence as it indicates the investors' expectations and perspectives of the announcements. However, this methodology is confined to term windows so that it can maintain a clean event window and the assessment of the M&A announcement and termination announcement is limited to present evidence on value creation alone (Chipeta & Nkiwane, 2019). Following Wolmarans and Sartorius (2009), the expected returns in the market model are determined using the formula in Equation [1]:

$$E(R_{it}) = \alpha + \beta(R_{Mt}) \quad [1]$$

Where: α = The value of $E(R_{it})$ if there is no return on the market;

β = The estimate of the systematic risk of the company; and,

R_{Mt} = The rate of return on a market portfolio on day t (Wolmarans & Sartorius, 2009).

The R_{Mt} , a market index, is used to determine if the returns experienced by the firm are abnormal or if they are driven by the market conditions on that particular day. The market index used in this study is the JSE All Share Index. This is an appropriate benchmark as it market capitalisation weights all the shares on the JSE. This is an excellent indication of the market conditions in South Africa.

The abnormal returns (AR) are calculated by deducting the expected returns, calculated in Equation [1], from the actual returns experienced by the company. Thus, the ARs for 250 days prior and subsequent to the event are determined using the formula in Equation [2]:

$$AR_{it} = R_{it} - E(R_{it}) \quad [2]$$

Where, $E(R_{it})$ is the expected return and R_{it} is the actual return for company i on day t (Brown & Warner, 1985). The actual return is calculated using the formula depicted in Equation [3]:

$$R_{it} = \ln\left(\frac{P_{it}}{P_{it-1}}\right) \quad [3]$$

Where, P_{it} is the closing share price for company i on day t and P_{it-1} is the one-day trailing closing share price for company i . The natural log of the change in company i 's share price is used to obtain continuous returns. This method is utilised as it is the most appropriate when dealing with time-series data (Benninga, 2014). The ARs calculated in Equation [2] are used to determine the average abnormal returns (AAR). This is determined using the formula illustrated in Equation [4]:

$$AAR_t = \frac{1}{n} \sum_{i=1}^n AR_{it} \quad [4]$$

Where: AAR_t = The average abnormal return for time t ;

AR_{it} = The abnormal return of company i at time t ; and,

n = The sample size.

Lastly, the AARs are cumulated to determine the overall impact of the corporate event. This is done for several event windows ⁴. Thus, the cumulative average abnormal returns (CAARs) are determined using the formula demonstrated in Equation [5]:

$$CAAR_t = CAAR_{t-1} + AAR_t \quad [5]$$

Where: $CAAR_t$ = The cumulative average abnormal return at time t ;

$CAAR_{t-1}$ = The cumulative average abnormal return at time $t-1$; and,

AAR_t = The average abnormal return for time t .

⁴ Event windows refer to the period around the announcement. In this study, five event windows are analyzed. These include a 41-, 21-, 11-, 5-, and 3-day window. For example, the 41-day event window evaluates AAR and CAARs for 20 days before and after the event.

It is imperative to conduct significance tests on the data to ensure that the results are statistically significant. However, separate tests of significance are required for different distributions of data. For example, a parametric test of significance is used if the data is normally distributed whereas a non-parametric test of significance is used for non-normally distributed data sets. The normality of the data can be tested in two ways, visually or formally. To visually test the data, a histogram with a density line can be implemented. To formally test the data, a Shapiro-wilk normality test and a Jarque-Bera test for normality can be used⁵. In this study, both methods are used simultaneously to confirm the normality assumption of the return distribution. Once the normality of the data is confirmed, the correct significance test is implemented. If the data is normally distributed, a cross sectional t-test is used (Alagidede & Amewu, 2018). Whereas if the data is non-normally distributed, a Wilcoxon Signed-Rank test is applied. This methodology is widely used in the finance sphere to test the robustness and significance of returns (Alexandridis et al., 2010; Chu et al., 2009). It is highly probable that a non-parametric test is implemented as the data used in this study are stock returns. For the test of significance, the interpretation of the results is as follows; if the p-value is less (greater) than 0.05 then the null hypothesis is rejected (not rejected), and the AARs and CAARs are (not) significantly different from zero.

3.2.2 Long-Term Methodology

An M&A can have long-term impacts on the performance of the firm. Therefore, it is important to evaluate the performance of the firm after the successful completion of an M&A or in this study, the post-termination performance of the companies that experienced terminated M&A deals. Renneboog and Vansteenkiste (2019) state that performance can be evaluated in three separate ways. Firstly, an event study, similar to that of the short-term, can be conducted over an extended period by assessing the stock performance. Secondly, the operating performance can be compared before and after an event, using accounting measures such as sales, cash flow, return on assets (ROA), return on equity (ROE), employee growth and/or operating margins. Lastly, the long-term performance can be evaluated using buy-and-hold abnormal returns, where the abnormal returns are aggregated geometrically as opposed to arithmetically.

In this study, the long-term performance of companies that experienced terminated and completed M&A deals is assessed by evaluating the operating performance using accounting measures.

⁵ The Shapiro-Wilk test of normality is a general normality test that is designed to detect if there are departures from normality. The Jarque-Bera test for normality is a goodness-of-fit test which indicates whether the data has a skewness of zero and a kurtosis of three (Gujarati & Porter, 2009).

According to Fu, Lin and Officer (2013), these measures provide a precise representation of the value added by the M&A and contributes to a more direct metric of synergistic gains or losses. In this study, the ROA and ROE is used as the accounting-based performance measures. To calculate the operating income (Expenses Before Interest and Taxes (EBIT)) for each firm, it requires the cost of goods sold as well as the operating expenses (general and administrative) to be deducted from the total revenue (Kew & Watson, 2012). The ROA and ROE of the acquiring firm (i) for each year (t) is determined using the formulas depicted in Equation [6] and [7]:

$$ROA_{i,t} = \frac{EBIT_{i,t}}{Assets_{i,t}} \quad [6]$$

Where: $EBIT_{i,t}$ = The EBIT for firm i at time t and,

$Assets_{i,t}$ = The book value of total assets for firm i at time t.

$$ROE_{i,t} = \frac{EBIT_{i,t}}{Equity_{i,t}} \quad [7]$$

Where: $EBIT_{i,t}$ = The EBIT for firm i at time t and,

$Equity_{i,t}$ = The total equity for firm i at time t.

Once the ROAs and ROEs are calculated for each company, the results for the companies that experienced terminated M&A deals are averaged. Thus, to evaluate the three-year post-termination performance of the acquiring firm, Equation [8] and [9] is implemented:

$$ROA_t = \frac{1}{n} \sum_{i=1}^n ROA_{it} \quad [8]$$

$$ROE_t = \frac{1}{n} \sum_{i=1}^n ROE_{it} \quad [9]$$

Where: ROA_t and ROE_t = The average ROA and ROE at time t;

ROA_{it} and ROE_{it} = The ROA and ROE for company i at time t; and,

n = The sample size.

The average ROAs and ROEs are calculated for the year of the termination announcement as well as three years after the event. The subsequent years determine the impact of forgoing the M&A deal whereas the year of the termination of the M&A deal illustrates the base operating performance. These results are used to determine if there is a significant operating performance for the acquiring firm after the announcement that M&A deal is terminated. To test the statistical significance of the post-termination operating performance data, a one-sample Wilcoxon Signed-Rank test is employed. It is important to note that there are two potential shortcomings of the operating performance

measures. Barber and Lyon (1997) and Martynova and Renneboog (2008) state that measurement errors and inaccurate statistical properties are problematic characteristics of these measures. However, the main shortcoming is the inability to isolate the M&A effect as constant changes occur in each company. For example, the company could adjust its financial policy as well as alter its tactical and decision-making operations.

3.2.3 Long-Term Regression

A multivariate analysis is used to evaluate the performance of companies that experienced terminated M&A deals in comparison to those that completed M&A deals. In addition, several firm-specific factors are added to the regression to control for firm characteristics that could impact the performance of the firm. Therefore, the regression used to compare the performance of companies that experienced terminated and completed deals is shown in Equation [10]:

$$R_{i,t} = \alpha + \beta_1 Terminated_{i,t} + \beta_2 Size_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Value_{i,t} + e_{i,t} \quad [10]$$

The variables used in this regression are defined in Table 3.3. Once the comparison is evaluated, the deal characteristics that the acquiring firm would have used to purchase the target firm are regressed on the different operating performance measures. Hence, the differing deal characteristics and firm-specific variables are regressed on the ROAs and ROEs as shown in Equation [11]:

$$R_{i,t} = \alpha + \beta_1 Cash_{i,t} + \beta_2 Equity_{i,t} + \beta_3 Hostile_{i,t} + \beta_4 Industry_{i,t} + \beta_5 Size_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Value_{i,t} + e_{i,t} \quad [11]$$

The independent variables are outlined in Table 3.3. This regression is beneficial as it shows the possible impact of the different deal characteristics on the long-term performance of the acquiring company. For example, if the deal would have been financed by cash, this regression determines whether that capital was used efficiently after the termination of the M&A deal. Thus, the different deal characteristics make it possible to understand more about the company's long-term performance after the announcement that the M&A deal is terminated. The models in Equation [10] and [11] are estimated using panel Generalized Least Squares (GLS) with robust standard errors. By doing so, it ensures that the standard errors are unbiased and robust to panel specific heteroscedasticity⁶. In addition, Gujarati and Porter (2009) state that there are several benefits to using panel data. Firstly, it is effective for analysing the dynamics of change. Secondly, it minimises the bias that might result

⁶ Heteroscedasticity occurs when there is unequal variance. This means that the conditional variance is not constant (Gujarati & Porter, 2009). It is important to note that heteroscedasticity is more common in cross-sectional data.

when combining individuals or firms into broad aggregates. Lastly, it is an effective tool when dealing with heterogeneity as it allows for subject-specific variables. The above-mentioned benefits indicate that panel data is most suitable when analysing the operating performance in Equation [10] and [11].

Table 3.3: Dependent and Independent Variables

Variables	Definition
Dependent Variables	
ROA	Return on assets is calculated using Equation 5.
ROE	Return on equity is calculated using Equation 6.
Independent Variables	
Terminated	This refers to a pending M&A deal that has since been terminated (Bloomberg, 2021). Terminated M&A deals take the value of 1 and completed deals take the value of 0.
Cash or Equity	This is the financing method that the company was going to use to acquire the target firm. It can be cash, equity or cash and stock. Equity takes the value of 1 for deals that were going to be financed only by equity and 0 otherwise. Cash takes the value 1 for deals that were going to be financed only by cash and 0 otherwise.
Hostile	This refers to the nature of the M&A bid. Hostile takes the value of 1 if the nature of the bid was going to be hostile and 0 if the nature of the bid was going to be friendly.
Industry	This refers to an M&A that would have occurred in a related or unrelated industry. A related M&A refers to a deal where the acquirer and target were going to be in the same industry. The industry group is used instead of the industry sector. If the target was going to be in a different (same) industry group, it takes the value of 1 (0).
Size	This is the size of the acquiring firm and is calculated by using the log of the acquirers' market capitalisation (Chipeta & Nkiwane, 2019).
Leverage	This is defined as the leverage of the acquiring firm. It is calculated by dividing the book value of long-term debt by total assets (Chipeta & Nkiwane, 2019).
Value	The value is defined as the market valuation of the acquiring firm. Thus, the book-to-market (BTM) ratio is used as a proxy. High-BTM (Low-BTM) represents value (glamour) acquirers. Value acquirers (glamour acquirers) carry a BTM more than or equal to one (less than one) (Bloomberg, 2021).

3.3 Summary of Data and Methodology

This chapter outlined the sample selection criteria and methodologies utilised in this study. Once the sample selection criteria were applied and all the companies that were delisted and had insufficient data were removed, there were 103 companies in the short-term and 243 companies in the long-term. The long-term sample consists of 75 companies that terminated and 168 that completed M&A deals. Regarding methodologies, an event study is used in the short-term. This methodology is useful when evaluating the shareholder wealth effects around an event. In the long-term, the performance of companies that experienced terminated and completed M&A deals is assessed by evaluating the operating performance using ROAs and ROEs. These figures are used in both regressions to evaluate the comparison in performance of companies that experienced completed and terminated M&A deals as well as the impact of the deal characteristics on the performance of companies that experienced terminated M&A deals. The next chapter reports and discusses the results.

CHAPTER 4

RESULTS

This chapter presents and discusses the results of this study. It outlines the results obtained by evaluating the companies that met the sample criteria in the short and long-term. In the short-term, the AARs and CAARs are graphically presented for a 41-day event window. These results are presented for the whole sample period, 1997 to 2020, as well as two subsamples, 1997 to 2008 and 2009 to 2020. These results demonstrate whether the announcement of both events creates wealth for the acquiring shareholders. In the long-term, the operating performance is evaluated for companies that experienced terminated M&A deals. This indicates the impact of forgoing the inorganic investment. In addition, the regression results are presented to evaluate the comparison in performance between companies that experienced terminated and completed M&A deals as well as the impact of the deal characteristics on the companies that experienced terminated M&A deals.

4.1 Short-Term Sample Classification

As stated in Section 3.1.1, there are 103 companies whose M&A deals were unsuccessful over the 24-year period. All the deals have their unique characteristics. However, the method of payment, nature of the bid and M&A strategy are homogenous for all M&As in the sample. Table 4.1 outlines the sample classification for the companies in the short-term analysis. The results indicate that the most common method of payment is cash, followed by cash and stock. Stock is the least common payment method out of the three. Banerjee et al. (2012) state that in emerging markets, acquiring companies would be inclined to finance their M&As with stock for two reasons. Firstly, they would prefer to use the cash to invest in high growth opportunities and secondly, there are unfair corporate evaluations, thus stock financed deals would mean the risk of the M&A is shared with the target firm. This is a possible explanation for the increased use of stock and the combination of cash and stock. When evaluating the nature of the bid, it is evident that friendly M&As are the most common. Hostile bids are scarce, with only four occurring between 1997 and 2020. Lastly, M&As that would have occurred in a related industry are equally as likely to occur as those in an unrelated industry. This could be because companies are experiencing decreasing growth in their industry and are forced to participate in inorganic investments where there is growth potential. Cao et al. (2016) state that this is likely the case in emerging markets as the capital markets are less organised, there are uncompetitive product and labour markets and there is a low level of contract enforcement that could be exploited.

Table 4.1: Sample Classification for Companies in the Short-Term

Deal Characteristics		Sample Size (N = 103)
Method of Payment		
Cash		43
Stock		22
Cash and Stock		24
Undisclosed		11
Other		3
Total		103
Nature of Bid		
Friendly		58
Hostile		4
Unsolicited		5
Total		67 ⁷
M&A Strategy		
Related		47
Unrelated		48
Total		95 ⁸

To further enhance the evaluation of shareholder wealth effects in an emerging market, the sample period is split in half. Thus, the announcement and termination announcement of M&A deals are evaluated in two subsamples, 1997 to 2008 and 2009 to 2020. Table 4.2 presents the number of M&A events in each period. The results indicate that there are more events for the 1997-2008 period. Further evidence signifies that there are not the same number of deals for the different events in the subsamples and this is because some companies announced the M&A at the end of 2008 but only terminated the deal at the beginning of 2009.

⁷ The nature of the bid is not specified for some of the M&A deals. Hence, the total number of “Nature of Bid” is less than the total sample size.

⁸ Industry groups for some of the target firms are not disclosed, thus these firms are excluded from the related and unrelated categories for accuracy purposes.

Table 4.2: Sample Classification for the Different Periods

Event	1997-2008	2009-2020
Announcement of M&A Deal	62	41
Termination Announcement of M&A Deal	60	43

4.2 Short-Term Empirical Results

4.2.1 Shareholder Wealth Effects for Terminated M&A Deals

In the short-term, this study seeks to explore two objectives. The first objective is to analyse the AARs at the announcement of an M&A deal that later would become terminated as well as the AARs at the termination announcement. The second objective is to analyse the CAARs during different event windows around both events. There is limited literature exploring the wealth effects of terminated M&A deals in emerging economies. Thus, the results will present valuable information for M&A strategies.

Figure 4.1 evaluates the AARs for the announcement and termination announcement of M&A deals⁹. Based on the figure, it is evident that both AARs are volatile over the 41-day event window with the termination announcement experiencing more volatile returns¹⁰. The AAR, on the day of the M&A announcement, is -1.55%. This is the largest loss experienced over the period. Since the market participants are unaware that these M&A deals would be subsequently terminated, the results can be directly compared to the announcements of completed deals. The findings of the negative return on the announcement day contrast with the findings of Alagidede and Amewu (2018) in the African markets, Chu et al. (2009) in the Asian markets and Jain et al. (2015) in the Indian market. However, the findings are in accordance with the results found by Fabich et al. (2017) in the BRICKS countries. Their findings indicate that M&A deal announcements experienced only a slight negative AAR of -0.12%. With regards to the termination announcement, it is evident that the results are akin to those of the M&A deal announcements. However, the AAR experienced on the termination announcement day is -0.75%. Overall, it is evident that the market participants react negatively to both the announcement and termination announcement of M&A deals in the South African market.

⁹ Table B.1 in Appendix B present the AARs and CAARs used to graphically present Figure 4.1 and 4.2.

¹⁰ 41-Day event window: The AARs are cumulated from 20 days prior to 20 days after the event. Five event windows were calculated; however, the results only evaluate the 41-Day event window.

About the returns around the events, it is evident that the volatile returns allow for extreme positive and negative AARs. For example, the AARs prior to the termination announcement peak at 1.85% but significantly decline to -2.21% five days later. This volatility results in statistically insignificant AARs for both events during all the event windows ¹¹. As a result, the null hypothesis stating that there are no shareholder wealth effects at both events is not rejected.

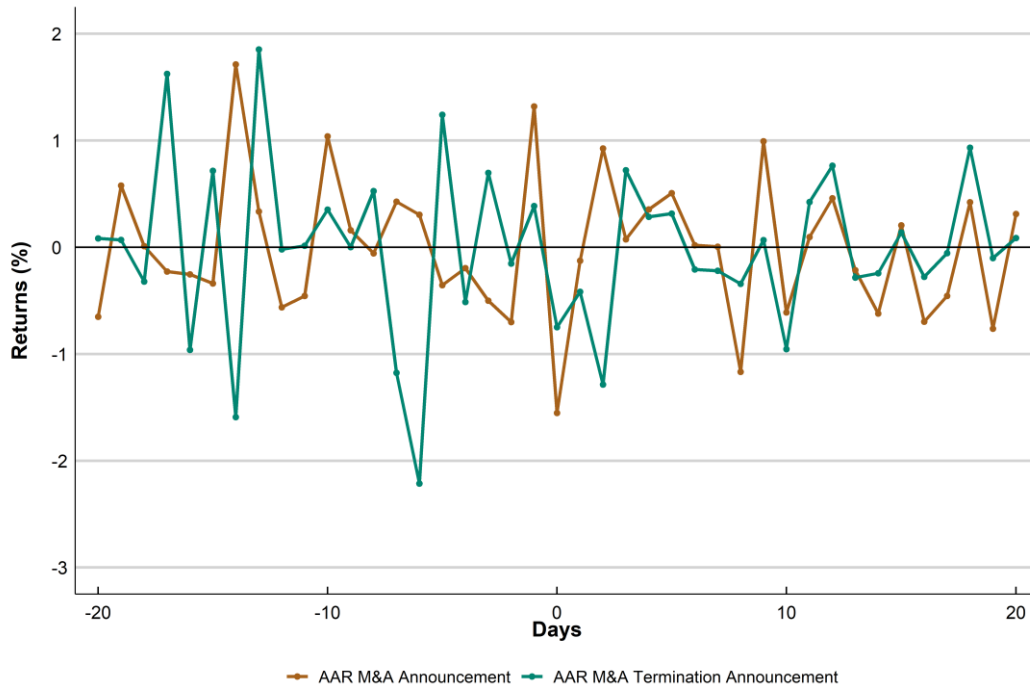


Figure 4.1: AARs for the Announcement and Termination Announcement of M&A Deals

To evaluate the overall impact of the M&A announcements, the AARs are cumulated for different time periods around both events. Figure 4.2 presents evidence of the CAARs for a 41-day event window. Regarding the termination announcement, it is evident that there is an upward trend in the returns from day -20 to day -7. However, from this point, the CAARs decrease until the end of the period. Overall, holding the company's shares over the whole period would result in a loss of -0.87%. Therefore, it is evident that the termination announcement destroys value for shareholders. It is important to note that these results are not statistically significant, thus the null hypothesis that no shareholder wealth effects are created around the termination announcement is not rejected. When evaluating the CAARs for the announcement of the M&A deal, it can be seen that there is a similar upward trend experienced by the termination announcement from day -20. However, the

¹¹ Appendix A tests the normality of the data and it is evident that it is non-normally distributed. Thus, the test of significance used in this study is the Wilcoxon Signed-Rank test. Table C.1 in Appendix C presents the Wilcoxon Signed-Rank results for the AARs during the whole sample.

announcement CAARs continue until five days before the announcement. For five days before the announcement, the returns continuously decrease. However, subsequent to the announcement, there is an upward trend for another five days. After this period, there is a decline in the CAARs. Overall, it is evident that if the shareholder had bought the shares 20 days before the announcement, it would have resulted in a positive gain of 0.4%. These findings are of a similar magnitude to those found by Jain et al. (2015). The authors' evidence indicates that the investors would have made a cumulative gain of 0.56% over the 41-day period in the Indian market. Moreover, the results are akin to numerous other empirical studies in emerging markets (Alagidede & Amewu, 2018; Banerjee et al., 2012; Fabich et al., 2017; Rani & Yadav, 2013). The CAARs around the announcement dates are statistically significant over the period. Accordingly, the null hypothesis that there are no shareholder wealth effects around the announcement of the M&A deal is rejected¹². Therefore, the M&A announcement creates value for the shareholders.

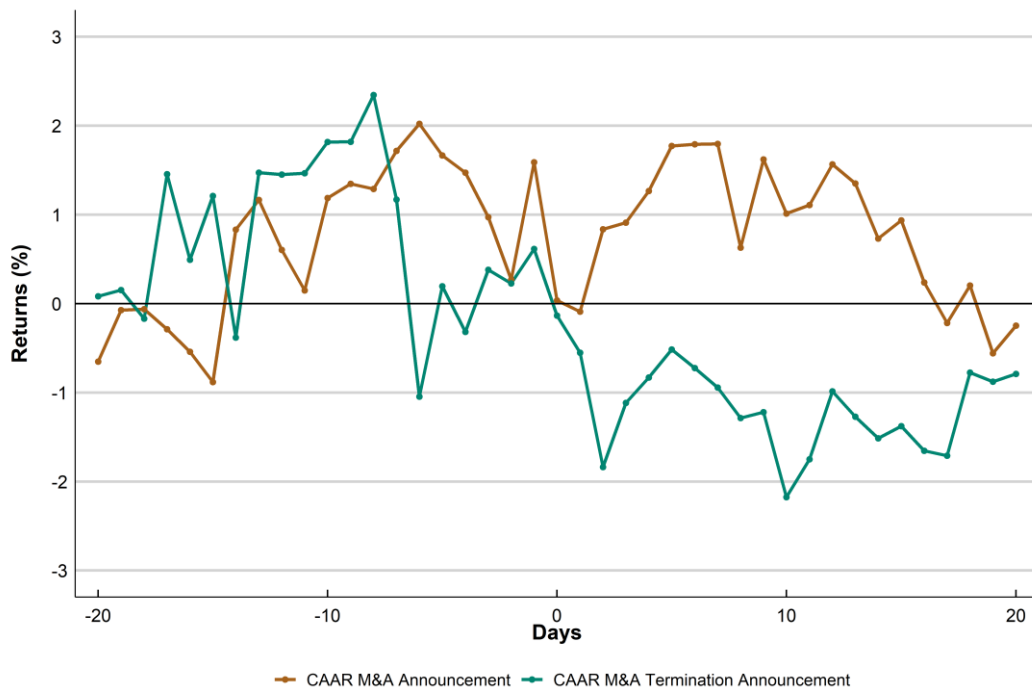


Figure 4.2: CAARs for the Announcement and Termination Announcement of M&A Deals

An important observation found by Liu (2018) and Masulis et al. (2011) was that the market reverses its reaction to the M&A announcements. For example, if there was a favourable reaction to the announcement, there will be an unfavourable reaction to the termination announcement. The findings of Liu (2018) in the US market indicate that the mean CAAR for a 3-day event window was -1.5% (1%) for the M&A announcement (termination announcement). To evaluate how the results in an

¹² Table C.1 in Appendix C presents the Wilcoxon Signed-Rank results for the CAARs during the whole sample.

emerging economy compare, the same methodology is applied to the results. It is evident that in a 3-day event window, the mean CAAR for the announcement (termination announcement) was 0.24% (-0.25%). Thus, it is apparent that the findings of this study are the opposite of those found by Liu (2018). However, the reversal in the market participants reaction to both events is still apparent.

4.2.2 Shareholder Wealth Effects in Different Sample Periods

The results obtained in Figure 4.2 present evidence of the overall impact of the announcement and termination announcement of terminated M&A deals from 1997 to 2020. As stated above, the announcement of the M&A deal created wealth over the 41-day window. However, it was only a negligible 0.4% whereas the termination announcement created no wealth for the shareholders over the period. In addition, the cumulative returns did not present one definitive trend. For example, the CAARs around the announcement of the M&A deal increased before the event and decreased after the event. These are interesting findings as an accumulation of returns normally results in a definitive positive or negative trend. Because of the unusual results, the following section explores the AARs and CAARs for M&A deals that occurred for two 12-year periods; 1997 to 2008 and 2009 to 2020 as previously mentioned. By splitting the data in this manner, the results will provide evidence of the market-participants reaction to M&A deals in different time periods.

Figure 4.3 presents the AARs for both events in the different time periods¹³. Based on the figure, it is evident that the AARs are more volatile during the 2009-2020 period. This volatility occurs for both announcements whereas most of the AARs for the events during the 1997-2008 period remain between -1% and 1%. On the announcement day, all the AARs are negative with the announcement of the M&A deal during 1997-2008 revealing the largest loss of -1.62%. An interesting observation is that there is a spike in three out of the four AARs one day prior to the announcements. A potential explanation for this is information leakage and the possibility of market participants taking advantage of the early news by buying additional stock, which results in upward pressure on the stock price. However, once the announcements are made, there is a sell off, which leads to downward pressure on the stock prices. Consequently, this results in negative returns. After the events, there is a market correction and the returns spike. Since there is a similar market reaction around the announcements for both periods, it could indicate that brokers or knowledgeable market investors are the individuals reacting instantly to the market news. It is important to note that the AARs around all four of the

¹³ Table B.2 in Appendix B present the AARs used to graphically present Figure 4.3.

events are statistically insignificant, which indicates that the AARs are not significantly different from zero¹⁴.

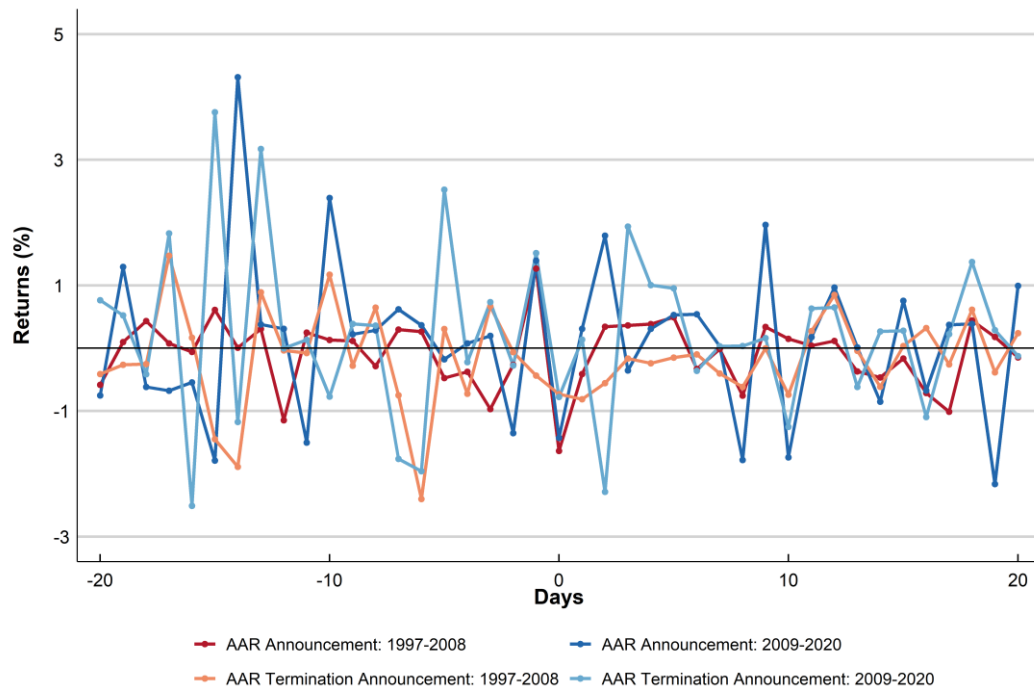


Figure 4.3: AARs for Both Events: 1997-2008 and 2009-2020

To assess the overall effects of the different events, Figure 4.4 presents the CAARs for the different time periods¹⁵. The figure shows evidence of the CAARs for a 41-day event window. The evidence is astounding as the CAARs for both events are downward trending during the 1997-2008 period while they are upward trending during the 2009-2020 period. Considering the termination announcement, it is evident that if the investors were to hold the shares from day -20 to day 20 during 1997-2008 (2009-2020), it would have resulted in a loss (gain) of -6.8% (7.3%). The results are similar for the announcement of the M&A deal. However, they are not as extreme. Thus, if the investors were to hold the shares over the event window for 1997-2008 (2009-2020), it would result in a loss (gain) of -2.9% (5.3%). All the CAARs are statistically significant, which indicates that the null hypothesis - that there are no shareholder wealth effects around the different events - is rejected¹⁶. Overall, it is apparent that there are two important findings from this analysis. Firstly, the overall effect around the announcement and termination announcement of M&A deals has changed in the

¹⁴ Table C.2 in Appendix C presents the Wilcoxon Signed-Rank results for the AARs in the different time periods.

¹⁵ Table B.2 in Appendix B present the AARs used to graphically present Figure 4.4.

¹⁶ Table C.3 in Appendix C presents the Wilcoxon Signed-Rank results for the CAARs in the different time periods.

last 12 years compared to the effects before 2008 and secondly, the overall effect is consistent within each time period.

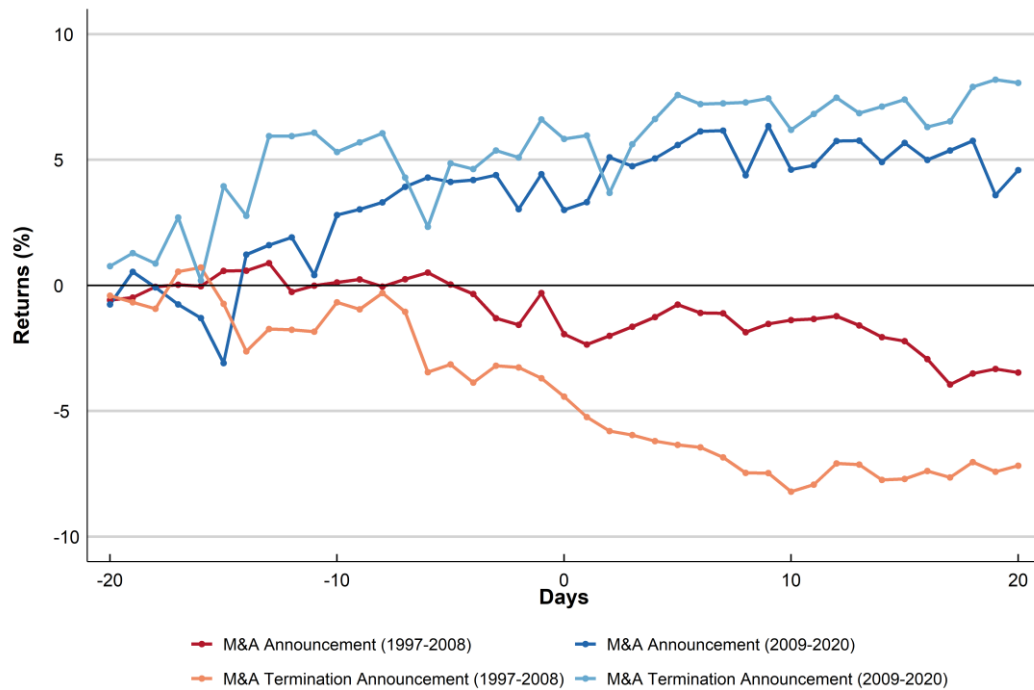


Figure 4.4: CAARs for Both Events: 1997-2008 and 2009-2020

These results are important as they explain why, over the whole period, there was no significant shareholder wealth created around the events. It indicates that wealth creation in the later period cancels out the wealth deterioration in the earlier periods. It is difficult to explain why there is a reversal in the wealth effects of M&A deal announcements and termination announcements. Thus, it is an empirical issue that warrants further investigation.

4.3 Long-Term Statistics

The long-term statistics present the sample classification, the descriptive statistics and a correlation matrix for all the variables used in the long-term analysis. This means that data regarding companies that experienced completed and terminated M&A deals are evaluated. The sample consists of data for three years after the events, which means there are three data points for each firm in the sample period.

4.3.1 Sample Classification

Table 4.3 outlines the sample classification for companies that terminated and completed M&A deals. It can be seen that 168 companies completed M&A deals and 75 companies experienced terminated M&A deals during the sample period. The most common deal characteristics in the sample are those financed by cash and of a friendly nature. Furthermore, there is a similar amount of related and unrelated M&As. However, companies that experienced both terminated and completed M&As focus mainly on related deals.

Table 4.3: Sample Classification for Terminated and Completed M&A Deals

Deal Characteristic	Terminated M&A Deals (N = 75)	Completed M&A Deals (N=168)
Method of Payment		
Cash	31	125
Stock	17	24
Cash and Stock	16	18
Other	11	1
Total	75	168
Nature of Bid		
Friendly	41	165
Hostile	4	3
Unsolicited	5	0
Total	50 ¹⁷	168
M&A Strategy		
Related	38	85
Unrelated	35	83
Total	73 ¹⁸	168

4.3.2 Descriptive Statistics

Table 4.4 presents evidence of the descriptive statistics for the dependent and independent variables. These results are segregated by the status of the M&A deal. It can be observed that over the period,

¹⁷ The nature of the bid is not specified for some of the M&A deals. Hence, the total number of “Nature of Bid” is less than the total sample size.

¹⁸ Industry groups for some of the target firms are not disclosed, thus these firms are excluded from the related and unrelated categories for accuracy purposes.

companies that experienced terminated M&A deals have larger average ROAs and ROEs than the companies that completed M&A deals. This is an interesting finding as it indicates that these companies are more efficient at utilising their assets and shareholders' equity to generate earnings. These operating performance measures experience considerable minimum and maximum values. This study presents the results without winsorizing the large ROAs and ROEs¹⁹. However, as a robustness check, each analysis is completed with data that has been winsorized at the 95th and 99th percentile. Furthermore, it is apparent that companies that completed M&As are slightly larger and use more debt than those that experienced terminated M&A deals. Lastly, it is evident that the average value is 0.62 (0.71) for firms that experienced completed (terminated) M&A deals. This indicates that majority of the firms in the sample are glamour stocks as the firms' BTM values are less than 1. Glamour stocks are defined as stocks that are priced at higher levels and comprise of companies that are in newer industries, which results in a rapid growth in earnings (Brown et al., 2018). These companies can be classified as overvalued because the book value is less than the market value. On the contrary, value stocks are well established companies with impressive past financial performance (Brown et al., 2018). These companies are classified as undervalued. Lastly, it is evident that there are significantly more observations for completed M&A deals.

Table 4.4: Descriptive Statistics for Terminated and Completed M&A Deals

Variables	Obs.	Median	Mean	Std. Dev	Min.	Max.
Completed M&A Deals						
ROA	504	0.0512	0.0563	0.1266	-0.6596	1.3746
ROE	504	0.1494	0.1565	0.3334	-1.4677	2.9728
Size	504	9.8530	9.738	1.1864	6.1060	12.1300
Leverage	504	8.8450	12.4900	12.9711	0	80.6980
Value	504	0.5347	0.6161	0.4293	0.0348	3.1201
Terminated M&A Deals						
ROA	225	0.0596	0.0835	0.2420	-0.8502	1.8395
ROE	225	0.1462	0.1699	0.5749	-2.0047	2.9728
Size	225	8.1313	8.2820	2.4778	0.4495	12.7204
Leverage	225	8.226	11.7710	12.2893	0	67.4070
Value	225	0.5275	0.7116	0.6632	0.0632	6.4558

¹⁹ Winsorizing data refers to a process that limits extreme values. This process makes "outliers" equal to a specified percentile (Brown, Leeds & Reilly, 2018).

4.3.3 Correlations

Table 4.5 identifies the correlations between the dependent and independent variables. It conveys that the two dependent operating performance measures experience the highest correlation (0.906). This relationship is partially expected as both ROA and ROE evaluate how efficiently capital is being used by the management of the firms. Interestingly, the termination of an M&A deal is positively correlated to both operating performance measures. Furthermore, the firm-specific factors indicate key findings that are in line with the literature as the size of the firm is positively correlated with its leverage (0.092). This indicates that when a company identifies development potential, it will increase the quantity of debt it holds to ensure that it can pursue these organic growth opportunities. A firm will increase its debt when it believes the growth opportunity outweighs the cost of the debt. This results in an increase in the size of the company. Moreover, the continuous increase in the size of the company leads to additional growth opportunities, which requires additional capital. This relationship causes the value of the firm to be inversely related to the firm's size and leverage, which are -0.380 and -0.072 respectively. This can be attributed to the fact that when a company experiences growth, market participants push the market price up so that it exceeds the book value. This results in an overvaluation of the company. It is important to note that there is multicollinearity between the two dependent variables. However, this is unproblematic as these variables are not included in the same regression. Additionally, none of the other correlations are higher than 0.7, which signifies that there is no multicollinearity between the variables.

Overall, there are 243 companies in the regression analysis. The long-term data is used to evaluate the operating performance of companies that experienced terminated M&A deals. In addition, it is used to explore the comparison in the performance of companies that experienced completed and terminated M&A deals as well as evaluate the impact of the different deal characteristics on the post-termination operating performance of the acquiring companies.

Table 4.5: Correlation Matrix for Dependent and Independent Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) ROA	1.000									
(2) ROE	0.906***	1.000								
(3) Terminated	0.073**	0.015	1.000							
(4) Cash	-0.027	-0.059	0.572***	1.000						
(5) Stock	0.047	-0.023	0.410***	-0.105***	1.000					
(6) Hostile	-0.037	-0.046	0.194***	-0.049	0.345***	1.000				
(7) Diversified	0.140***	0.113***	0.614***	0.335***	0.163***	0.039	1.000			
(8) Size	0.100***	0.185***	-0.370***	-0.181***	-0.266***	0.001	-0.172***	1.000		
(9) Leverage	-0.025	-0.005	-0.026	0.092**	-0.043	-0.060*	-0.007	0.092**	1.000	
(10) Value	-0.149***	-0.164***	0.086**	0.077**	-0.028	-0.032	0.027	-0.380***	-0.072*	1.000

Note: This table presents the pairwise correlations for the dependent and independent regressions used in Equation [10] and [11]. * Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

4.4 Post-Termination Announcement Operating Performance

The objective of this section is to analyse the operating performance of companies that experienced terminated M&A deals. To achieve this, the average ROAs and ROEs have been calculated for three years after the termination announcement. The year of the termination is shown as an indicator of the mean performance of the terminating firms prior to any M&A activity.

Table 4.6 presents the operating performance for all the companies that terminated M&A deals. It is evident that the acquiring companies experience a substantial increase in their ROAs. There is exponential growth from the first year to second year. However, these returns seem to plateau in the third year. In financial theory, an ROA of over 5% is considered decent (Brown et al., 2018). This means that these companies become more efficient at using their assets to generate earnings from one year after the termination. Also, the same companies generate a significant increase in their ROEs of nearly 10% from year one to year three. This means that the companies are using the money invested by the equity holders to generate more profits²⁰. It is noteworthy to mention that the operating performance for three years post-termination is not statistically significant²¹. Therefore, it can be concluded that the operating performance is not significantly different from zero.

Table 4.6: Post-Termination Announcement Operating Performance

Years	ROA (%)	ROE (%)
0	2.46	7.71
1	6.54	12.94
2	9.19	15.33
3	9.32	22.70

The evidence regarding the post-termination operating performance of companies that experienced terminated M&A deals is difficult to compare to those that completed M&A deals. This is because completing an M&A deal involves uniting two companies' operating performances. In an emerging market, there is a higher chance that completed M&A deals will result in a deterioration of the long-term operating performance. Grigorieva and Petrunina (2015) state that this is perhaps because of poor corporate governance, inadequate information disclosure and inefficient monitoring in the

²⁰ The results are similar when the data is winsorized at the 95th and 99th percentile. Thus, the companies that terminated M&A deals experience good performance after the event.

²¹ Table C.4 in Appendix C presents the Wilcoxon Signed-Rank test results for the operating performance.

acquirer's country. The deterioration in the performance of completed deals is confirmed by several authors in different emerging markets (Bertrand & Betschinger, 2012; Mantravadi & Reddy, 2008; Narayan & Thenmozhi, 2014). Based on the results above, it is evident that not participating in the M&A deal could be more beneficial in an emerging economy. However, this does not mean that there are no extremely profitable M&As.

Since terminating an M&A deal involves forgoing on the inorganic investment, the acquiring company now has access to the capital that would have been used for the M&A. This additional capital can be used for other growth enhancing endeavours. One of these activities could be to embark on a share buyback programme, leading to a reduction in available shares and resulting in a higher price per share. This would have an instantaneous impact on the profitability of the firms as shareholders' equity would simultaneously shrink on the liabilities side of the balance sheet by equal proportions (Kew & Watson, 2012). An alternative growth enhancing activity for the acquiring firm, one that is practised more frequently, is to reinvest in their production process or improve efficiency within their operation. This can be done in several ways, for example, investing in research and development, making their cost base more efficient and/or increasing their distribution. This proves that focusing on their operations would result in a significant improvement in the profitability of the company. Overall, it is evident that a termination of the M&A deal has a positive impact on the long-term performance of the acquiring company.

4.5 Long-Term Empirical Results

4.5.1 Terminated M&A Deals Versus Completed M&A Deals

The long-term analysis seeks to evaluate the performance of companies that experienced terminated M&A deals in comparison to those that completed M&A deals. This is an important empirical question as there are mixed results regarding the long-term performance of companies that completed deals. This means that some literature indicates that an M&A is beneficial (Bertrand & Betschinger, 2012; Grigorieva & Petrunina, 2015; Mantravadi & Reddy, 2008; Narayan & Thenmozhi, 2014). However, there is also evidence of the M&A being detrimental to long-term performance (Andre et al., 2013; Leepsa & Mishra, 2012; Mantravadi & Reddy, 2008). Since there is an abundance of evidence supporting the notion that M&As lead to a deterioration in performance, it could be beneficial that the M&A deal is terminated as the acquiring firm does not have to waste valuable resources. The results in Section 4.4 indicate that there is an improvement in the operating performance measures of the acquiring firm after the termination of the M&A deal. Although there

is an improvement in the ROAs and ROEs, completed M&As could have had a more significant improvement. In that case, it would be more beneficial to participate in the M&A deals.

Table 4.7 evaluates the comparison in post-event operating performance for companies that experienced terminated and completed M&A deals. Examining the regressions, it is evident that companies that experienced terminated M&As outperform those which completed M&A deals. This is exemplified by the positive coefficient on the terminated variable²². This value is statistically significant at the 5% and 10% level, which indicates that terminating the M&A deal is more beneficial than completing the deal. Accordingly, the null hypothesis is rejected proving that there is a statistically significant difference between the long-term performance of companies that experienced terminated and completed M&A deals. The size of the company contributes positively to this outperformance but it is only statistically significant in the ROE regression. The amount of leverage the acquiring company has and the value both negatively impact the performance. Value is the only firm-specific variable that is statistically significant in both regressions. Overall, it is evident that not completing the M&A deal leads to improved operating performance.

²² When the data is winsorized at the 95th and 99th percentile, the results are akin to those found without eliminating the large ROAs and ROEs. However, the outperformance of companies that terminated M&A deals in comparison to those that completed M&As is not as large.

Table 4.7: A Comparison of the Post-Event Operating Performance

VARIABLES	(1) ROA	(2) ROE
Terminated	0.0452** (0.0181)	0.0834* (0.0435)
Size	0.0099 (0.0073)	0.0432*** (0.0162)
Leverage	-0.0004 (0.0004)	-0.0008 (0.0015)
Value	-0.0402** (0.0192)	-0.0815* (0.0469)
Constant	-0.0102 (0.0832)	-0.2040 (0.1810)
Observations	729	729
Number of Companies	243	243
Wald Chi-Squared Test	19.56	24.01
Overall R Squared	0.0383	0.0521

Note: This table presents the GLS estimations for the comparison of post-event performance of companies that experienced terminated and completed M&A deals. The robust standard errors are in parentheses. * Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

There are three possible reasons why the companies that had terminated M&A deals outperform those that completed the M&A deals. Firstly, the acquiring company could have participated in the M&A deal for incorrect reasons. Trautwein (1990) discusses seven possible reasons companies participate in an M&A, all of which fit within the synergy, agency and hubris categories presented by Berkovitch and Narayanan (1993). Among these seven reasons for participating in an M&A are those that could have deleterious effects. For example, managers could participate in an M&A deal for their objectives or to benefit the shareholders of the acquiring firm at the disadvantage of the shareholders of the target firm or because there has been an economic disturbance. Thus, participating in the M&A deal because of the empire building, raider or disturbance theory could result in a deterioration of the long-term performance of the company (Trautwein, 1990). Secondly, the primary motive for participating in M&As is because of the possible synergies (Harrison et al., 2001). However, it may be the case that the hypothetical synergy is not realised in person. In this case, the company would have to waste

energy and time amending the situation. Lastly, the company could be distracted by the new M&A, which would result in a diversion of resources. By doing so, the company may lose focus on their primary goal, which could result in a loss of market share as well as a reduction in expertise and innovation. In all three of these instances, forgoing the M&A deal could be beneficial as the capital could be used for share buybacks or for improvements within the company. Therefore, the managers could focus their attention on maximising the company's performance.

4.5.2 Impact of Deal Characteristics on Terminated M&A Deals Operating Performance

Since it is evident that companies that experienced terminated M&A deals outperform the companies which completed the M&A deals, it is important to evaluate how the different deal characteristics that the acquiring firm would have used to purchase the target firm impacts the long-term operating performance.

Table 4.8 presents the estimation results for the different deal characteristics as well as different firm-specific factors. The first two variables refer to the payment method that would have been used. Since acquiring a target firm is a costly exercise, forgoing the investment results in the company retaining that capital. This additional capital can be utilised in countless ways whether this is for the benefit or at the detriment of the company in question. Based on the results of this study, it is evident that companies that would have funded the M&A with cash experience negative coefficients in both regressions. These coefficients are statistically significant at the 10% level when the ROE is the dependent variable. This indicates that the companies that would have additional cash perform poorly after the termination announcement. A plausible explanation for this could be that the company now has financial slack and this excess level of cash is utilised inefficiently. This can occur in three ways: the company could use the free cash flow for unprofitable investment projects, the cash could be stored as a cash cushion or the managers of the company could misuse the additional capital for perquisites which results in agency costs. Therefore, not utilising the excess capital for profitable investment ventures may be a reason for the inferior performance of deals that had the intention of financing the M&A with cash. When evaluating companies that intended to fund their M&As with stock, it is shown by the results that these companies perform well in the long-term. This is evident as the coefficients for both regressions are positive but statistically insignificant. The M&A theory indicates that a company is more inclined to purchase a target firm with stock when its stock is overvalued. Akbulut (2013) finds that completed M&A deals that are funded by overvalued stock result in poor long-term performance. He states that this is because the acquirers make bad deals with lower synergies and not because they overpaid. As a result, not participating in the M&A deal allows

the acquiring company to focus their resources on maximising their growth which would result in improved long-term performance.

The third variable refers to the nature of the M&A bid. It is evident that companies that planned to participate in M&A deals where the managers or board of directors of the target firm object the M&A perform poorly after the termination announcement. This is apparent as the coefficients for the ROAs and ROEs are negative and statistically significant at the 5% level. It is interesting to note that the coefficients are the largest in both regressions, which indicates that it has the most impact on the long-term performance. A likely explanation for this long-term performance deterioration could be that there was no asset acquired even though so much effort and capital went into the process of overtaking the target firm. The M&A of the target firm would have been essential for long-term growth, which was possibly limited within the acquiring firm. This growth could have spurred from the target firms' brand, their operations or the technology they possessed. Therefore, once the company was unable to acquire the target firm, it was left focusing on improving their company. However, as stated above, the limited growth potential would lead to poor long-term performance.

The final deal characteristic refers to M&As that would have occurred in an unrelated industry. This means that the target industry group differs from the acquiring industry group. The results from both regressions indicate that the coefficient on the diversified variable is positive and statistically significant at the 5% level. This result indicates that forgoing the unrelated M&A results in improved performance in the long-term, which demonstrates the benefit of operating in the same industry. A probable explanation for the improved long-term performance is that the company focused on organic growth investments. These include the creation of new products, services and/or business models. This finding is in line with the literature that states that unrelated M&As result in a deterioration in long-term performance as they can distract the managers (Ghosh, 2001; Heron & Lie, 2002). This is caused by the diversified focus as well as the unfamiliarity between the different industries, the target's competitors, industry specific regulations as well as additional adversities. The estimation results indicate that the size of the acquiring company contributes positively to the long-term performance. This variable is only statistically significant when the dependent variable is the ROE. On the contrary, the amount of leverage as well as the value of the firm negatively contributes to the post-event performance. The value variable is statistically significant in both regressions. It is important to note that the above-mentioned findings are confirmed by the winsorized results.

Overall, the null hypothesis, which states that the deal characteristics that would have been used for the M&A deal have no statistically significant impact on the long-term performance of companies that experienced terminated M&A deals, is rejected. This indicates that the deal characteristics play a crucial role in the long-term performance of companies that experienced terminated M&A deals.

Table 4.8: The Impact of Deal Characteristics on Post-Termination Operating Performance

VARIABLES	(1) ROA	(2) ROE
Cash	-0.0265 (0.0208)	-0.101* (0.0541)
Stock	0.0401 (0.0577)	0.0050 (0.1010)
Hostile	-0.0969** (0.0492)	-0.2080** (0.1040)
Diversified	0.0828** (0.0327)	0.2070*** (0.0675)
Size	0.0093 (0.0057)	0.0389*** (0.0140)
Leverage	-0.0004 (0.0004)	-0.0007 (0.0014)
Value	-0.0383** (0.0170)	-0.0817* (0.0452)
Constant	-0.0011 (0.0637)	-0.1540 (0.1540)
Observations	729	729
Number of Companies	243	243
Wald Chi-Squared Test	38.77	33
Overall R Squared	0.0583	0.0743

Note: This table presents the GLS estimations for the deal characteristics of companies that experienced a termination in the M&A deal. The impact of these deal characteristics on the post-termination performance is evaluated. The robust standard errors are in parentheses. * Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

4.6 Summary of Results

This chapter presented important empirical evidence for acquiring companies that experienced terminated M&A deals. In the short-term, there are several beneficial findings. For the whole sample period, the AARs on the announcement of both events were negative. This indicates that there was downward pressure on the stock prices, which resulted from a sell-off. In addition, the announcement of the M&A created value over the 41-day event window whereas there was no creation of value for the shareholders when it was announced that the deal would be terminated. When the data were separated into two subsamples, the results presented interesting findings. Firstly, all the AARs on the day of the announcement were negative and the movement around each event was similar for three out of the four events. This possibly indicates that brokers or knowledgeable market investors are the individuals reacting to the market news. Secondly, the accumulation of returns over the 41-day window was opposite over the two periods. The CAARs were downward trending during 1997-2008 but upward trending for both events during 2009-2020. This is a probable explanation for the minimal shareholder wealth creation for the whole period as the opposite CAARs would have cancelled each other out. Regarding the long-term results, it is evident that the companies that experienced terminated M&A deals perform well for three years after the announcement that the M&A will be terminated. Furthermore, these companies outperform companies that completed deals. This indicates that it is more beneficial not to participate in M&As. Lastly, deals that would have been financed by stock as well as in an unrelated industry contributes positively to the long-term performance of companies that experienced terminated M&A deals whereas deals that were going to be financed by cash and were hostile contribute negatively. Overall, the empirical evidence elucidates the findings of terminated M&A deals. The next chapter concludes the findings of this study.

CHAPTER 5

CONCLUSION

In recent years, there has been a substantial and global development in M&As. This surge in popularity can be accredited to the fact that M&As are a mechanism used for capital restructuring and are efficient in producing inorganic growth for a company. This inorganic growth can stem from obtaining untapped resources, expanding the customer base, growing the market share and improving the competitiveness through economies of scale. However, these benefits can only be exploited if the M&A deal is completed, which sometimes does not occur. The foremost grounds for terminated M&A deals are price disagreements between the companies, regulatory concerns caused by an oversaturated market and the inaccurate expectations present from the investigative audit during the due diligence test, indicating that the deal can be terminated because of deal specific as well as market specific circumstances. Accordingly, the termination of the M&A deal must be announced, which impacts the shareholders' wealth around the period of the announcement but more importantly, it impacts the long-term performance of the acquiring firm.

There is a plethora of literature exploring the short and long-term wealth effects of completed M&A deals. However, there is limited literature embedded in the analysis of the wealth effects of terminated deals as well as the evaluation of the long-term performance of the companies that experienced terminated deals. Therefore, the main objective of this study was to explore the short and long-term impacts of terminated M&A deals on the acquiring company.

The results in the short-term present important findings regarding the wealth effects of the announcement as well as the termination announcement of the M&A deals. Firstly, all the AARs on the announcement of the events were negative. This indicates that there was downward pressure on the share price, which resulted from market participants selling their stock. Interestingly, the announcement of the M&A deal experiences a much larger negative AAR. Around the events, the AARs all follow similar patterns. There is a spike in returns one day prior to the announcement as well as one-day after. This also occurs when the sample is split, which possibly indicates that brokers or knowledgeable market investors are the individuals reacting to the market news. Secondly, the M&A announcement creates wealth for the shareholders over the whole sample whereas the termination announcement does not. However, when the sample was split, the results presented interesting findings regarding wealth creation around the events. During the 2009-2020 period, both events created a significant amount of wealth for the shareholders. On the contrary, during 1997-2008,

the announcement of both events significantly destroyed wealth. This is a possible explanation for the wealth creation over the whole sample as the wealth creation in the later period cancels out the wealth deterioration in the earlier periods. These results indicate that the period of the announcements significantly impacts the amount of wealth created.

The results in the long-term are possibly more fascinating than those in the short-term. Firstly, companies that experienced terminated M&A deals performed exceptionally well for three years after the event. This is apparent as the ROAs and ROEs improve exponentially. Secondly, companies that completed M&A deals perform poorly in comparison to companies that did not complete M&A deals. This could occur because of several reasons. The acquiring company participated in the M&A for incorrect purposes, which would have resulted in inadequate synergy creation. The M&A could have distracted the managers from their core business, which results in less innovation, decreased product development and possibly a loss in market share. The company that experienced the terminated M&A deal could have used the capital for profitable investment endeavours as well as reinvested the capital in their production process or improved the efficiency within their operation. This presents important empirical evidence that indicates that forgoing on the M&A could be more beneficial for the long-term performance of the acquiring firm. Lastly, the deal characteristics that the acquiring company intended to use for the M&A impacts the long-term performance. This is apparent in the results because deals that would have been financed by stock and deals in an unrelated industry both contribute positively to the long-term performance. In contrast, the results prove that deals that were planned to be financed by cash and were also hostile contribute negatively.

5.1 Limitations

This study presents important empirical evidence for companies that experienced terminated M&A deals. Thus, it elucidates the short and long-term impacts of the terminated deal on the acquiring companies. However, it is important to note that there are several limitations to the evidence.

The foremost limitation is data accessibility for companies that experienced terminated M&A deals. This means that several companies do not have data or have insufficient data on the BGD. There are various possible explanations for the lack of data, with only one being known for certain, the acquiring company delisted from the JSE during the event period. In the long-term, almost half the companies that experienced terminated deals have no data, which makes it more severe than the loss of data in the short-term. This can favourably skew the data because the companies that have data perform well. Therefore, it is possible that the outperformance of companies that experienced terminated deals in

comparison to companies that completed M&A deals may not be as significant when considering all companies. Hence, as an investor, it is important to be aware that not all companies that experience a termination in the M&A deal will perform well in the long-term. An additional limitation of this study is that there are only possible explanations for the unusual empirical results. These explanations only highlight the more prevalent reasons for the occurrences. In line with this, each firm is required to be analysed to provide a more accurate representation of the findings. This is an arduous exercise but would contain invaluable evidence for each company's circumstances. Finally, the long-term operating performance measures could be adjusted for industry performance and macroeconomic conditions. This would create a more realistic representation of the performance of the companies because it would eliminate the bullish and bearish nature of the stock market. It should be noted that these effects were not considered in this study because of the limited number of companies that experienced terminated M&A deals.

5.2 Areas of Future Research

This study presents several avenues for future research. The first avenue that could be explored is the combined effect of the different deal characteristics on the long-term performance of companies that experienced a terminated M&A deal. For example, deals that were going to be financed by cash and of a hostile nature could be interacted. This could present essential information as to which combination contributes significantly to the long-term performance. The second avenue that could be explored is the impact of the deal characteristics on short-term wealth creation. This could be evaluated over the whole sample as well as during the subsamples. It would provide beneficial insight into market participants' perception of different payment methods, the nature of the bid as well as the relatedness of the acquisition. Further avenues in terms of short-term research could evaluate why there is extreme value-creation during the 2009-2020 period and extreme destruction in value during the 1997-2008 period. This could be achieved by evaluating the changes in interest rates, fluctuations in inflation, the valuations of target firms as well as the market conditions during the period. This is an avenue that needs extensive assessment and the results would provide crucial evidence for announcements of M&A events. Lastly, M&A deals that have been withdrawn could be explored as this would provide important empirical evidence on incomplete M&A deals. This empirical assessment would determine whether the managers or board of directors made a value enhancing decision to forgo the M&A deal. Thus, the long-term performance of companies that withdrew from the M&A could be compared to that of the companies that completed M&A deals.

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Appendix A: Normality Tests and Wilcoxon Signed-Rank Test Results

Section 3.2.1 defines the process which determines whether a parametric or non-parametric test of significance should be implemented. The normality of the data is tested visually and formally. Table A1 presents the histograms and density lines for the AARs for 250 days prior and subsequent to the M&A events. The results indicate that the AARs are not normally distributed as the histograms are asymmetrical.

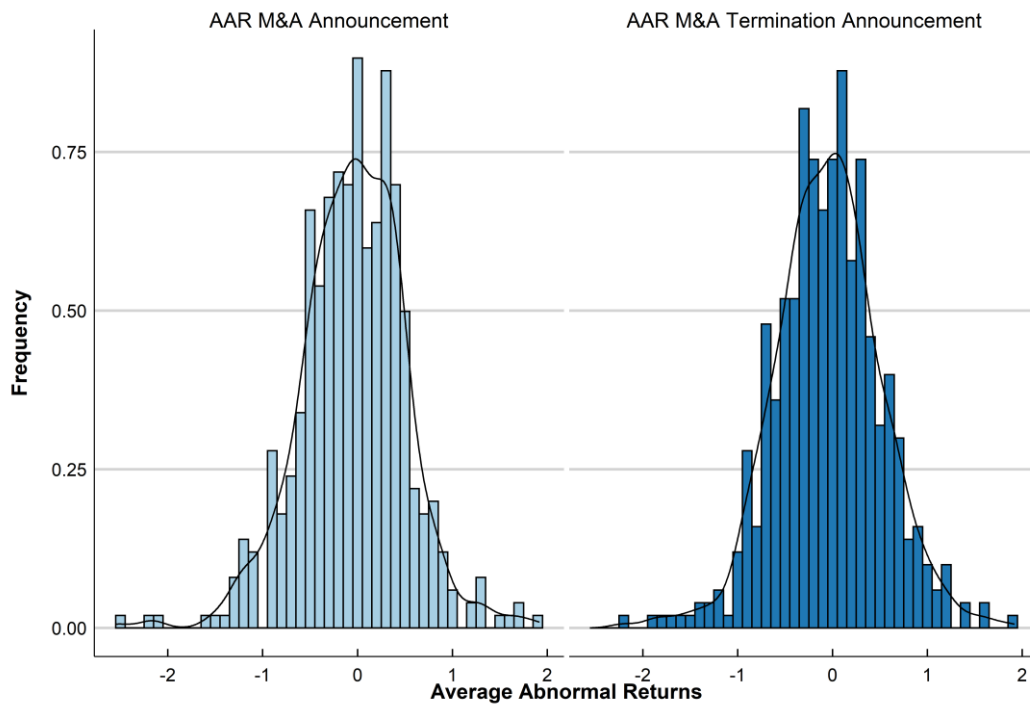


Figure A.1: Histogram and Density Line for AARs Around Both Events

Table A.1 evaluates the Shapiro-wilk normality test and Jarque-Bera test for normality. It is evident that both have p-values less than 5%. Therefore, the null hypothesis, which states that the data is normally distributed, is rejected.

Table A.1: Normality Tests for AARs Around Both Events

Normality Test	AAR Announcement	AAR Termination Announcement
Shapiro-Wilk	7.16E-06 *	1.25E-02 *
Jarque-Bera	4.66E-14 *	2.12E-04 *

* AARs are Significant

Based on the visual and formal results, it is evident that the AARs used in this study are non-normally distributed. As a result of the non-normal distribution, the Wilcoxon signed-rank test is used to evaluate the statistical significance of the AARs and CAARs in different event-windows.

Appendix B: AARs and CAARs for Short-Term Analysis

Table B.1: AARs and CAARs for Terminated M&A Deals from 1997-2020

Days	AAR M&A Announcement	AAR M&A Termination Announcement	CAAR M&A Announcement	CAAR M&A Termination Announcement
-20	-0.650661758	0.083492986	-0.650661758	0.083492986
-19	0.578760756	0.068655923	-0.071901002	0.152148909
-18	0.010722407	-0.321556555	-0.061178595	-0.169407646
-17	-0.226823424	1.623910456	-0.288002019	1.45450281
-16	-0.25326525	-0.96070182	-0.54126727	0.49380099
-15	-0.339673938	0.71619522	-0.880941208	1.20999621
-14	1.712685732	-1.591156115	0.831744523	-0.381159905
-13	0.334402164	1.853315139	1.166146687	1.472155234
-12	-0.562615488	-0.020520392	0.603531199	1.451634842
-11	-0.455286845	0.013274678	0.148244354	1.46490952
-10	1.039020544	0.352435331	1.187264898	1.817344851
-9	0.158852301	0.001403453	1.3461172	1.818748304
-8	-0.056245402	0.526588466	1.289871798	2.34533677
-7	0.4265222	-1.176083421	1.716393998	1.169253349
-6	0.305423527	-2.214093375	2.021817526	-1.044840026
-5	-0.35533134	1.241072426	1.666486185	0.1962324
-4	-0.194605172	-0.513033205	1.471881013	-0.316800804
-3	-0.500026265	0.696494356	0.971854748	0.379693552
-2	-0.701096767	-0.152056307	0.270757981	0.227637245
-1	1.318322353	0.386724107	1.589080335	0.614361352
0	-1.552352292	-0.749510576	0.036728043	-0.135149223
1	-0.12686376	-0.416679148	-0.090135716	-0.551828371
2	0.925869379	-1.285469729	0.835733662	-1.8372981
3	0.074930815	0.721573134	0.910664478	-1.115724966
4	0.354804244	0.284999883	1.265468721	-0.830725083
5	0.507065725	0.315784866	1.772534446	-0.514940217
6	0.01951056	-0.208059164	1.792045007	-0.722999381
7	0.004374897	-0.220713086	1.796419904	-0.943712467
8	-1.167111436	-0.342344621	0.629308468	-1.286057087
9	0.992083247	0.066586672	1.621391715	-1.219470416
10	-0.609827379	-0.955065369	1.011564336	-2.174535785
11	0.095905585	0.423785849	1.10746992	-1.750749936
12	0.458279632	0.763959939	1.565749552	-0.986789997
13	-0.214484749	-0.283942716	1.351264803	-1.270732713
14	-0.620490491	-0.243430007	0.730774312	-1.514162721
15	0.205102483	0.137548104	0.935876795	-1.376614617
16	-0.697658319	-0.276767723	0.238218476	-1.653382341
17	-0.455553145	-0.055231614	-0.217334669	-1.708613955
18	0.420930816	0.933426416	0.203596147	-0.775187539
19	-0.762361355	-0.101613199	-0.558765208	-0.876800738
20	0.311729613	0.086556769	-0.247035596	-0.790243969

Table B.2: AARs for Terminated M&A Deals from 1997-2008 and 2009-2020

Days	AAR Announcement: 1997-2008	AAR Termination Announcement: 1997-2008	AAR Announcement: 2009-2020	AAR Termination Announcement: 2009- 2020
-20	-0.58203	-0.41185	-0.75277	0.763154
-19	0.098411	-0.26295	1.293427	0.523654
-18	0.432159	-0.25206	-0.61629	-0.41529
-17	0.076555	1.471862	-0.67819	1.828999
-16	-0.05749	0.167664	-0.54453	-2.50893
-15	0.611247	-1.44884	-1.78983	3.757561
-14	0.00614	-1.88736	4.315168	-1.17506
-13	0.304845	0.891799	0.378377	3.172604
-12	-1.14794	-0.03331	0.308229	-0.00297
-11	0.248744	-0.07565	-1.50275	0.135282
-10	0.130246	1.170875	2.391099	-0.77054
-9	0.116348	-0.27959	0.222091	0.386948
-8	-0.28632	0.647358	0.286059	0.360882
-7	0.295632	-0.74807	0.618069	-1.76335
-6	0.264624	-2.40004	0.36513	-1.95896
-5	-0.4759	0.306261	-0.17595	2.523721
-4	-0.37676	-0.72438	0.076399	-0.22305
-3	-0.96795	0.668905	0.196159	0.73435
-2	-0.26254	-0.06248	-1.35358	-0.27496
-1	1.267831	-0.43514	1.393444	1.514402
0	-1.63457	-0.72964	-1.42698	-0.77742
1	-0.41205	-0.81117	0.308052	0.137481
2	0.343543	-0.55684	1.792258	-2.28521
3	0.364233	-0.1632	-0.35549	1.935569
4	0.384778	-0.23913	0.310209	1.004155
5	0.491416	-0.14938	0.530349	0.954031
6	-0.33155	-0.09798	0.541822	-0.35909
7	-0.01335	-0.40392	0.03074	0.030664
8	-0.75534	-0.61715	-1.77974	0.034713
9	0.338149	-0.00186	1.965009	0.160504
10	0.149423	-0.73876	-1.73944	-1.25186
11	0.041163	0.272258	0.177352	0.631697
12	0.11661	0.84751	0.966618	0.649322
13	-0.36826	-0.04148	0.014299	-0.61663
14	-0.46601	-0.61417	-0.85033	0.265254
15	-0.165	0.034568	0.755749	0.278847
16	-0.71309	0.320757	-0.6747	-1.09663
17	-1.01226	-0.25918	0.372715	0.224606
18	0.442756	0.612357	0.388459	1.373963
19	0.179323	-0.38462	-2.1634	0.286697
20	-0.1473	0.240086	0.99468	-0.1241

Table B.3: CAARs for Terminated M&A Deals from 1997-2008 and 2009-2020

Days	CAAR Announcement: 1997-2008	CAAR Termination Announcement: 1997-2008	CAAR Announcement: 2009-2020	M&A Termination Announcement: 2009-2020
-20	-0.58203	-0.41185	-0.75277	0.763154
-19	-0.48362	-0.67481	0.540661	1.286807
-18	-0.05146	-0.92687	-0.07563	0.871517
-17	0.02509	0.544992	-0.75382	2.700517
-16	-0.0324	0.712656	-1.29836	0.191591
-15	0.578843	-0.73619	-3.08818	3.949152
-14	0.584983	-2.62355	1.226983	2.774096
-13	0.889828	-1.73175	1.60536	5.9467
-12	-0.25811	-1.76506	1.913589	5.943729
-11	-0.00937	-1.84071	0.410842	6.079011
-10	0.120881	-0.66983	2.801941	5.308471
-9	0.237229	-0.94942	3.024032	5.695419
-8	-0.04909	-0.30206	3.310091	6.056301
-7	0.246542	-1.05014	3.92816	4.29295
-6	0.511166	-3.45017	4.293291	2.333986
-5	0.035266	-3.14391	4.117341	4.857707
-4	-0.34149	-3.86829	4.19374	4.634657
-3	-1.30944	-3.19938	4.389899	5.369006
-2	-1.57198	-3.26187	3.036317	5.094046
-1	-0.30415	-3.69701	4.429761	6.608449
0	-1.93872	-4.42665	3.002783	5.831031
1	-2.35077	-5.23782	3.310835	5.968512
2	-2.00723	-5.79466	5.103093	3.683301
3	-1.643	-5.95787	4.747599	5.61887
4	-1.25822	-6.197	5.057809	6.623025
5	-0.7668	-6.34638	5.588158	7.577055
6	-1.09836	-6.44436	6.12998	7.217963
7	-1.1117	-6.84828	6.16072	7.248627
8	-1.86705	-7.46543	4.380981	7.28334
9	-1.5289	-7.46729	6.34599	7.443844
10	-1.37947	-8.20605	4.606546	6.191982
11	-1.33831	-7.93379	4.783898	6.823679
12	-1.2217	-7.08628	5.750516	7.473001
13	-1.58996	-7.12776	5.764815	6.856375
14	-2.05597	-7.74192	4.914484	7.121629
15	-2.22097	-7.70736	5.670233	7.400476
16	-2.93406	-7.3866	4.995534	6.303848
17	-3.94632	-7.64578	5.368249	6.528454
18	-3.50356	-7.03342	5.756708	7.902417
19	-3.32424	-7.41804	3.593303	8.189114
20	-3.47154	-7.17795	4.587983	8.065014

Appendix C: Wilcoxon Signed-Rank Test Results

The following Appendix presents the test of significance results. The Wilcoxon Signed-Rank test is the methodology used. As stated in Section 3.2.1, the null hypothesis is (not) rejected if the p-value is less (greater) than 0.05. If the null hypothesis is rejected, it signifies that the results are significantly different from zero.

Table C.1 presents the Wilcoxon Signed-Rank Test results for the AARs and CAARs around both events. The returns range from 1997 to 2020 and are evaluated in five different event windows. It is important to note that Section 4.1.1 and 4.1.2 only explore the results during the 41-day event window. Based on the results, it is evident that none of the AARs experience a p-value less than 0.05. Thus, the AARs are not statistically different from zero. When evaluating the CAARs, it is evident that the M&A announcement experiences statistically significant returns during the 41-, 21-, and, 11-day event windows. Whereas the Termination Announcement only experiences statistically significant returns during the 21- and 11-day event windows. Therefore, these are the only periods that experience CAARs, which are statistically different from zero.

Table C.1: Test of Significance for AARs and CAARs: Whole Sample

Days	AAR M&A Announcement	AAR M&A Termination Announcement	CAAR M&A Announcement	CAAR M&A Termination Announcement
41	0.75	0.99	3.23688E-06 *	0.20
21	0.76	0.52	6.67572E-06 *	4.1008E-05 *
11	0.90	0.97	0 *	0.02 *
5	1.00	0.19	0.19	0.19
3	0.75	0.50	1	0.75

* AARs and CAARs are Significant

Table C.2 presents the Wilcoxon Signed-Rank Test results for the AARs around both events. These returns are recorded in two different time periods: 1997-2008 and 2009-2020. It is evident that the termination announcement experiences statistically significant AARs for one event window (5-day). Thus, the AARs during this period are statistically different from zero. On the contrary, the rest of the AARs are not statistically significant.

Table C.2: Test of Significance for AARs: Different Time Periods

Days	AAR Announcement (1997-2008)	AAR Termination Announcement (1997-2008)	AAR Announcement (2009-2020)	AAR Termination Announcement (2009-2020)
41	0.56	0.11	0.60	0.33
21	0.79	0.04 *	0.19	0.92
11	0.70	0.08	0.58	0.28
5	0.81	0.06	0.81	0.63
3	0.75	0.25	1	0.75

* AARs are Significant

Table C.3 presents the Wilcoxon Signed-Rank Test results for the CAARs around both events. As stated above, the results are for different time periods. It is evident that the M&A Announcement and Termination Announcement during 1997-2008 experienced statistically significant CAARs during the 41-, 21-, and 11-day event windows. Therefore, the CAARs during these event windows were statistically different from zero. With regards to the CAARs for both events during 2009-2020, it is apparent that there are statistically significant returns for the M&A (Termination) Announcement during the 41- and 21-day (41- and 11-day) event windows. The CAARs during the other event windows are not statistically significant. Thus, the returns are not statistically different from zero.

Table C.3: Test of Significance for CAARs: Different Time Periods

Days	CAAR Announcement (1997-2008)	CAAR Termination Announcement (1997-2008)	CAAR Announcement (2009-2020)	CAAR Termination Announcement (2009-2020)
41	2.73171E-06 *	3.00133E-11 *	2.16005E-09 *	9.09495E-13 *
21	0 *	8.39233E-05 *	9.53674E-07 *	0.41
11	0 *	0.02 *	1	0 *
5	0.44	0.06	0.31	0.81
3	1	0.25	0.5	0.25

* CAARs are Significant

Table C.4 presents the Wilcoxon Signed-Rank Test results for the post-termination announcement operating performance measures. Based on the table, it is evident that neither ROA nor ROE experience statistically significant results. This means that the operating performance measure is not statistically different from zero.

Table C.4: Test of Significance for Post-Termination Announcement Operating Performance

Significance Test	ROA	ROE
Wilcoxon Signed-Rank Test	0.13	0.13

* Operating Performance Measures are Significant