

## Stock Market Reactions to Merger Announcements: COVID19-induced transactions

Baneng Naape<sup>1</sup> & Thabang Ndlovu<sup>2</sup>

### Abstract

The central aim of this study was to analyse stock market reactions to merger announcements in South Africa. The study identified thirteen mergers and acquisitions that took place following the Covid-19 pandemic. An event study approach was utilized for data analysis given its relevance to the study. Overall, the cumulative average abnormal returns remained positive throughout the event window, suggesting that, at an aggregate level, the markets reacted positively to merger decisions, particularly regarding mergers that received clearance from South African competition authorities. Notably, on the event day ( $t+0$ ), cumulative average abnormal returns peaked at 2%, which indicates that the markets were highly efficient in absorbing information about merger decisions. These observations support the semi-strong form of the Efficient Market Hypothesis, suggesting that stock prices rapidly reflect publicly available information, including announcements related to mergers and acquisitions.

**Keywords:** stock market, mergers and acquisitions, COVID-19, South Africa

**JEL:** K22, L25, L51, C40

### 1. INTRODUCTION

The onset of the Fourth Industrial Revolution, coupled with the unprecedented Covid-19 pandemic, has significantly affected longstanding businesses, compelling them to reformulate their traditional business models to ensure their viability (Oyeyipo, 2024). While some companies have voluntarily exited the market, others have chosen to pursue acquisitions to realise efficiency gains and improve profitability. Mergers and acquisitions play a crucial role in the growth of businesses both in South Africa and globally (Antoniadis et al., 2014). Beyond the transfer of ownership and assets of the target company, these transactions often lead to enhanced efficiency in their utilization. Companies pursue mergers and acquisitions for various reasons, including achieving efficiency gains, expanding into new markets, broadening their product and/or service offerings, restructuring debt and in some instances, to eliminate competition (Pandey & Kumari, 2021).

While these activities can offer substantial benefits to the merging entities and their shareholders, they frequently raise public interest concerns related to job cuts and ownership (Chen et al., 2019). In the context of South Africa, mergers and acquisitions

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often result in a decrease in ownership by historically disadvantaged individuals, which is vital for addressing past racial inequalities and promoting empowerment. Bacon & Cagigas (2022) posit that, traditionally, businesses viewed mergers and acquisitions as a strategy for rapid growth. However, in recent times, mergers and acquisitions have evolved into a strategy for survival, particularly in light of the unprecedented Covid-19 pandemic. Mergers and acquisitions do not only impact the involved parties but also have significant implications for the structure, performance, and behaviour of the industries in which they occur (Farinos et al., 2019). In South Africa, these implications are particularly pronounced due to the high level of market concentration present in several sectors. While market concentration may stem from a lack of new market entrants, it is predominantly driven by the acquisition of existing players (Goga, 2024).

For example, a health market inquiry conducted by the Competition Commission of South Africa (2019) revealed that over the past thirty years, the health facilities market has become so concentrated that only three hospital groups now account for nearly 90% of the entire market. This situation has largely resulted from a series of uncontested mergers and acquisitions over time. Rani et al., (2015) argue that, at firm level, mergers are generally viewed positively by shareholders, as they can potentially enhance the growth and profitability of the merged entity. Although it has been previously established (see Moffett and Naserbakht, 2012; Gathecha, 2014) that mergers positively influence stock returns for shareholders of both the acquiring and target firms, some research studies (e.g., Gopalaswamy et al., 2008; Shah & Arora, 2014; Assefa et al., 2021) have identified instances where wealth transfers occur, benefiting the shareholders of the acquiring firm at the expense of those of the target firm, and vice versa.

Against this backdrop, this study re-visits the concept of mergers and acquisitions by assessing the impact of competition dynamics on the stock market. To be precise, the proposed study scrutinizes the effect of merger announcements on the stock performance of various listed companies in South Africa. This is achieved by means of the traditional event study methodology. First, research on this topic in the context of South Africa is still limited, and the few existing studies (e.g., Ndlovu, 2017; Madume, 2022) have yielded ambiguous results. Additionally, prior research primarily examined the period before the Covid-19 pandemic. In contrast, this proposed study focuses on transactions driven by the Covid-19 pandemic, aiming to investigate whether such transactions have positively impacted the stock returns of the shareholders of either the acquiring firm and/or the target firm.

The study is structured as follows: the first section introduces the study, outlining its objectives and contributions. The second section provides a background on mergers notified, and finalised by the Competition Tribunal since the inception of the Competition Act “the Act” in South Africa. The third section presents a concise discussion of the literature, encompassing both theoretical and empirical reviews. The fourth section elaborates on the empirical strategy, including the data collection

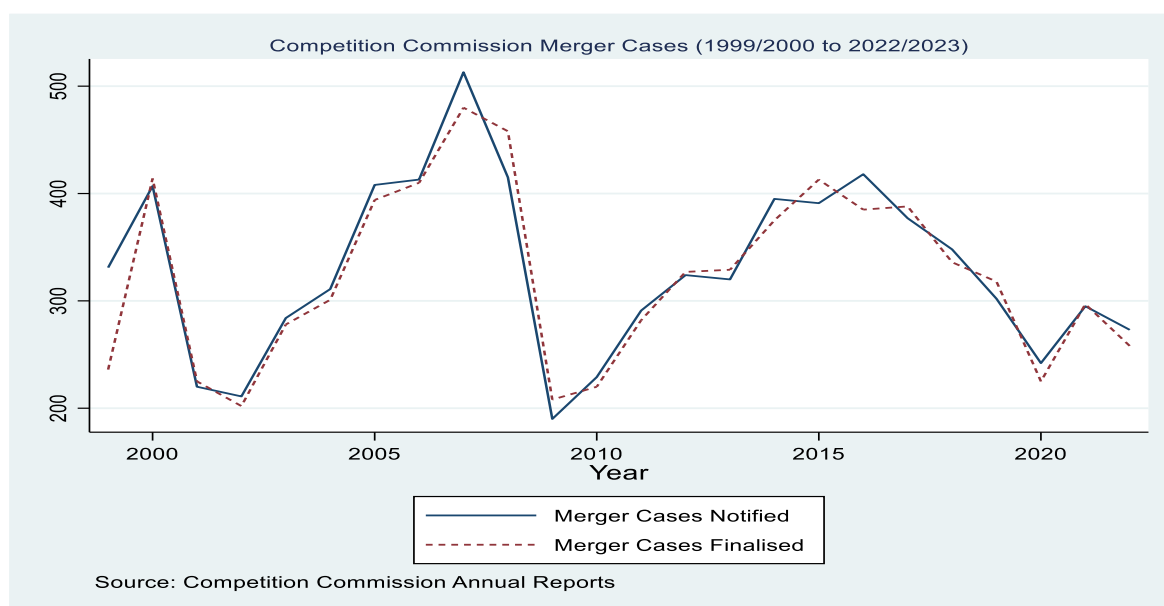
process, estimation techniques, and the research hypothesis. The fifth section offers a detailed discussion of the findings in line with previous studies. Finally, the last section concludes the study and discusses its implications for policy-making.

## 2. BACKGROUND

The South African Competition Act came into effect in 1999, a move that was warmly embraced by market participants as it represented a significant effort by the democratic government to enhance market regulation in the country (Competition Commission & Competition Tribunal, 2009). This was particularly crucial in light of South Africa's dual economy, shaped by the highly concentrated markets established during the apartheid era. The primary objectives of the Act were to promote market efficiency, expand consumer choice, and ultimately improve social and economic welfare (Brooks, 2001). Initially, the policy was built around three key instruments: the evaluation of horizontal practices, the scrutiny of restrictive practices, and the oversight of abuse of dominance cases (Hartzenberg, 2006).

Through extensive consultations and in recognition of the nation's complex history of racial oppression and economic segregation, several amendments were made. Notably, these revisions integrated public interest considerations alongside economic efficiency, enabling the Competition Commission to account for broader societal impacts when assessing cases (van Wyk et al., 2023). Since its inception, the Competition Commission has witnessed a rise in the number of notifiable mergers and acquisitions. Figure 1 below reflects the total number of merger cases notified and finalised by the Competition Commission for the period 1999/2000 to 2022/2023.

**Figure 1: Competition Commission Merger Cases (1999-2023)**



*Source: Competition Tribunal Annual Reports*

Observations from Figure 1 reveal that South Africa experienced a notable surge in merger notifications just before the 2008 global financial crisis. However, this trend

was significantly interrupted by the crisis's onset. From a business standpoint, the financial turmoil and subsequent economic downturn led to decreased profitability as aggregate demand dwindled, primarily due to falling household incomes (Naape & Masoga, 2020). This decline resulted in an increase in notified merger cases following the global financial crisis, as businesses sought mergers to remain viability, similar to the pattern observed during the COVID-19 pandemic. The trend in Figure 1 also indicates that there are minimal discrepancies between the number of merger cases notified and those finalized by the Competition Commission. This observation leads to a reasonable assertion that the Competition Commission has effectively managed to finalize the majority of notified merger cases.

Figure 2 below presents the total number of merger cases notified to the Competition Commission, categorized into small, intermediate, and large mergers. Observations from Figure 2 indicate that the majority of merger cases notified to the Competition Commission between 2000 and 2024 were classified as intermediate mergers, followed closely by large mergers. Additionally, the proportion of intermediate mergers has increased steadily over time in comparison to large mergers. Small mergers account for a relatively minor share of the total number of notified merger cases. For completeness, the classification of a merger depends on the value of the proposed transaction.

**Figure 2: Number of Mergers Notified by Size (2002-2024)**

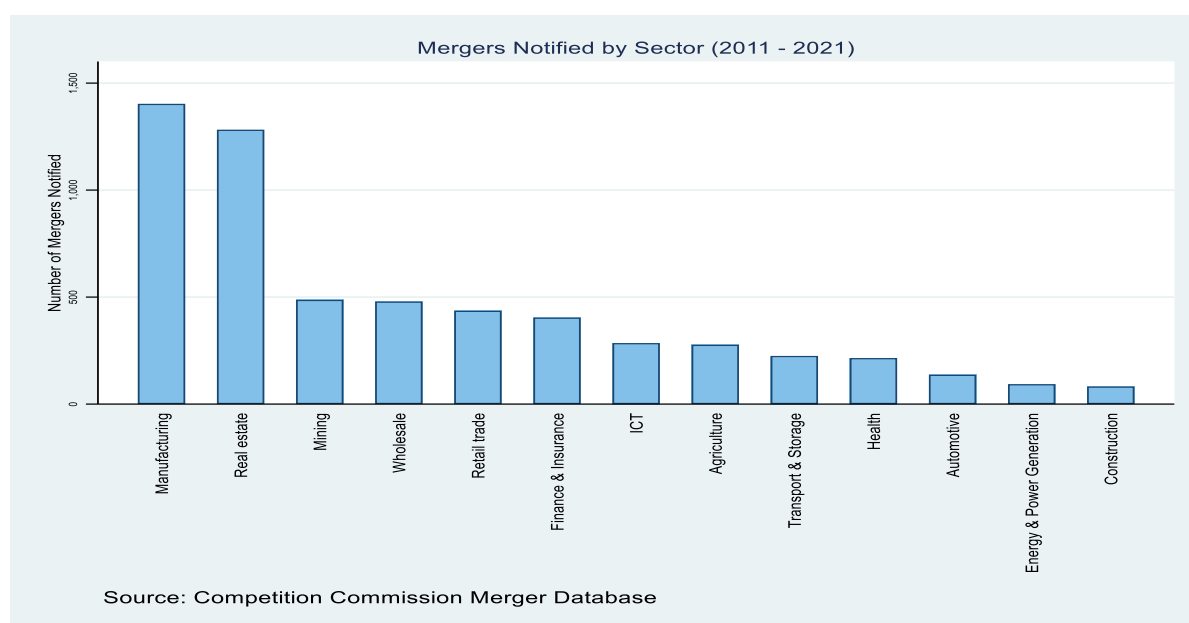


*Source: Competition Commission Annual Reports*

A transaction is classified as a large merger when the combined value of the transaction exceeds R6.6 billion or when the target firm's assets or revenue surpass R190 million (South African Government, 2009). For intermediate mergers, the combined value of the transaction must exceed R600 million, or the target firm's assets or revenue must exceed R100 million. It is important to note that only large mergers are referred to the Competition Tribunal for review, while intermediate mergers are

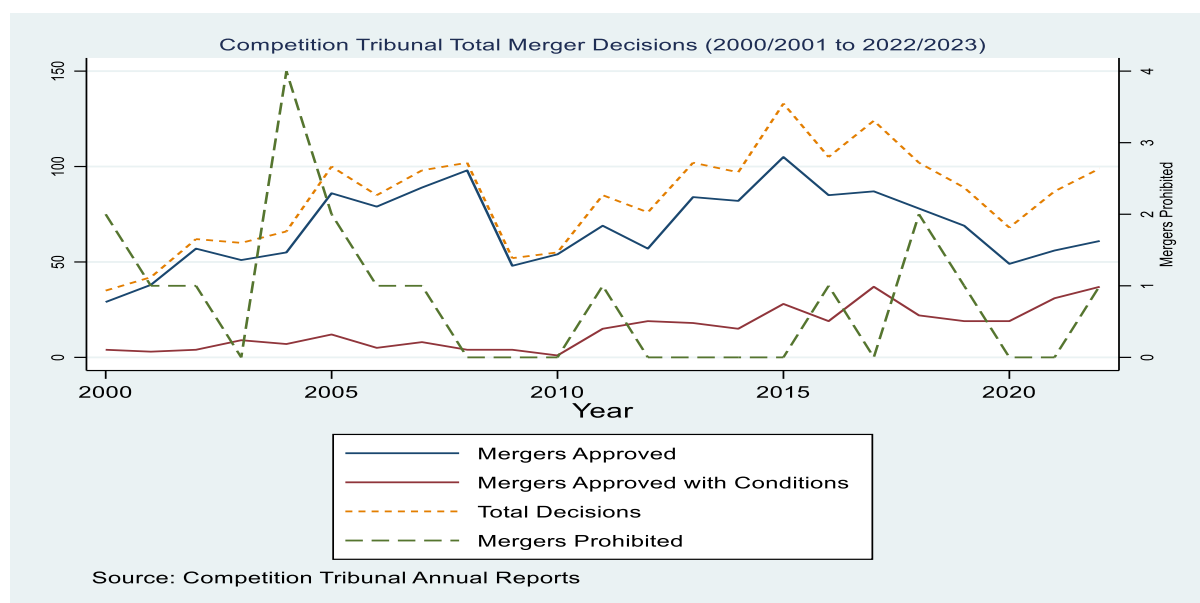
resolved by the Competition Commission, although the decision can be appealed by either the merging parties or potential intervenors. Figure 3 presents the total number of mergers notified by sector from 2011 to 2021. It is clear that the majority of notified merger cases originated from the manufacturing sector, followed closely by the real estate sector. In contrast, the construction and energy sectors accounted for a smaller proportion of the notified mergers. Notably, South Africa has experienced an uptick in merger activity within the energy sector following the onset of loadshedding in 2022, although this falls outside the study's timeframe. Goga (2024) also highlights that some heavily concentrated sectors in South Africa, such as health and automotive, have recently seen an increase in creeping mergers. Dymond (2018) likewise argued that the frequency of mergers and acquisitions within a specific sector is predominantly influenced by the number of market participants, potential synergies, and the economic climate.

**Figure 3: Number of Mergers Notified by Sector**



*Source: Competition Tribunal Annual Reports*

Figure 4 below shows the total merger decisions made by the Competition Tribunal. The vast proportion of mergers approved by the Competition Tribunal were approved unconditionally and this trend has remained largely consistent over the entire period. In contrast, the number of prohibited mergers was notably high in 2004 and to a lesser extent in 2018. Additionally, there has been a steady increase in the number of conditional approvals throughout the period under review. This rise in conditional approvals correlates with the introduction of public interest conditions, some of which include measures such as moratoriums on employment, a greater spread of ownership and the establishment of employee ownership schemes (Competition Commission, 2024). What has also been a prominent feature in conditional approvals are commitments towards enterprise and supplier development.

**Figure 4: Competition Tribunal Merger Decisions (2000-2023)**

*Source: Competition Tribunal Annual Reports*

### 3. LITERATURE REVIEW

This next section highlights the theoretical framework regarding the impact of merger announcements on the stock market. First, we explore the literature on the motives for mergers and acquisitions. Second, we outline the efficiency market hypothesis which is the basis for the methodology employed in this study. In addition to the theoretical review, this section also reviews a number of studies across different jurisdictions that also assessed the impact of merger announcements on the stock market. The methodology used and the conclusions of the aforementioned studies are reviewed and highlighted below.

#### 3.1. Theoretical Review

##### *Motives for mergers and acquisitions*

The existing literature contains a number of studies that have attempted to understand the motives for firms to undertake mergers and acquisitions. To this end, Berkovitch & Narayanan (1993) reviewed the literature and found that there are three major motives for mergers and acquisitions. The first is referred to as the synergy motive which postulates that mergers and acquisitions occur because of the economic gains that are achieved through the merging of the resources of the two firms. In this instance, firms would want to achieve financial, operational, and managerial synergies. Goergen & Renneboog (2004) suggested that if synergies are the primary motive for a particular merger and acquisition, the managers of both the acquirer and target firm intend to maximise shareholder value. Therefore, the wealth effects of the merger transaction for shareholders of both the merging parties should be positive.

In addition, Goergen & Renneboog (2004) postulated that the wealth gains for the target firm shareholders should be positively correlated to both those of the acquiring firm shareholders and also the total wealth effect. The second motive is termed the agency motive and postulates that mergers and acquisitions improve the management welfare of the acquiring firm at the expense of the shareholders of the acquiring firm. Goergen & Renneboog (2004) indicate that this motive is driven by the self-interest of the managers of the acquiring firm. These managers are believed to prefer to maximise corporate growth than maximizing corporate value as their private benefits increase in line with firm size. To this end, Goergen & Renneboog (2004) found that managers may engage in mergers and acquisitions for purposes of ensuring that the merged firm will depend on their expertise. In this case, managers have the incentive to exploit this dependency, which allows them to extract value from the shareholders of the acquiring firm (Shleifer & Vishny, 1989). This, according to Goergen & Renneboog (2004), results in both the total value of the merged firm and the wealth of the acquiring firm being lower.

The third motive, coined the hubris hypothesis postulates that managers can also make mistakes in the evaluation of target firms and may engage in mergers and acquisitions even in instances where there is no synergy. Goergen & Renneboog (2004) submitted that if there exists an equal possibility that managers are overestimating or underestimating the potential synergies of mergers and acquisitions, and managers make a bid after this error of overestimating the potential synergies, they may end up overpaying for the target firm. Berkovitch & Narayanan (1993) indicated that the higher the target firm, the lower the acquiring firm's gain such that there will be a wealth transfer from the acquirer firm to the target firm with the total gain equal to zero. This suggests that the correlation between the wealth change will be negative and the correlation between the wealth change and the total wealth change will be zero (Goergen & Renneboog, 2004).

In addition to the above merger motives, Trautwein (1990) identified additional motives for mergers and acquisitions. The first motive identified by Trautwein (1990) is referred to as the monopoly theory and postulates that mergers and acquisitions are planned and executed in order to achieve market power. Second, Trautwein (1990) argued that mergers and acquisitions are planned and executed by managers who have better information than the stock market about the value of a target firm. This motive is referred to as the valuation theory. Third, Trautwein (1990) submitted that some strategic decisions are not based on comprehensively rational choices but of outcomes of processes governed by: (i) individuals who possess limited information processing capabilities; (ii) strategic decisions that are the outcome of political games played between an organisation and outsiders; and (iii) organizational routines that prevent rational solutions to problems. This merger motive is often referred to as the process theory motive.

The following is a summary of the different motives for mergers and acquisitions.

**Table 1: Motives for mergers and acquisitions**

| <b>Motive</b>     | <b>Description</b>                                                                                                      | <b>Source</b>                                                                |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Synergy motive    | The main purpose is to achieve synergies in the form of financial, operational, and managerial synergies.               | Trautwein (1990); Berkovitch & Narayanan (1993); Goergen & Renneboog (2004). |
| Agency motive     | Managers aim to maximise their own utility at the expense of shareholders                                               | Trautwein (1990); Berkovitch & Narayanan (1993); Goergen & Renneboog (2004). |
| Hubris hypothesis | Occur when they are mistaken in the valuation of the target firm.                                                       | Berkovitch & Narayanan (1993); Goergen & Renneboog (2004).                   |
| Monopoly theory   | The purpose is to achieve market power.                                                                                 | Trautwein (1990).                                                            |
| Valuation theory  | The acquirer firm has better information about the value of the target firm than the stock market.                      | Trautwein (1990).                                                            |
| Process theory    | Merger decisions which are not based on rational choices, but on outcomes of processes governed by other circumstances. | Trautwein (1990).                                                            |

### *Efficient Market Hypothesis*

The event study methodology employed in this study is based on the concept known as the efficient market hypothesis. The efficient market hypothesis postulates that markets have a number of rational profit-maximisers whom compete with each other for purposes of trying to predict future market values of individual securities whereby current important information is publicly available to all market participants (Fama et al., 1969; Fama, 1970). Fama et al. (1969) submits that the efficient market hypothesis comes in three forms, that being, weak, semi-strong and strong. The weak form suggests that the share price reflects all existing historically available information. This implies that investors are unable to make abnormal profits from investing in financial assets.

The semi-strong form suggests that in addition to the available historically information, the share price is adjusted for new information released to the public. In addition, the share price will change quickly and without bias to incorporate any other new public information released to the public. Lastly, the strong form suggests that the share price reflects all public and private information, and no investor is able to outperform the market on a risk adjusted basis over the long run (Titan, 2015). Several studies have used the event study methodology in order to assess the impact of merger and acquisition announcements on the stock market. A review of some of these studies is found below. These studies are based on the efficient market hypothesis and assume that the markets in question are efficient. This implies that a merger and acquisition

transaction announcement will be represented in its respective share price, as the price of an individual share in an efficient market reflects both historical events and events that the market expects will occur.

### **3.2. Empirical Review**

As noted above, the existing literature contains several studies that assess the impact of merger announcements on the stock market. One such study is Mitchell et al. (2004), which examined the trading behaviour of investors around 2130 mergers announced between the period 1994 to 2004. Using data that included all mergers and acquisitions of publicly traded companies obtained from the New York Stock Exchange ("NYSE"), the National Association of Securities Dealers Automated Quotations ("Nasdaq") and the American Stock Exchange ("AMEX"), the authors measured changes in stock prices around merger announcements. Empirical results revealed evidence of short-term price pressures around mergers caused by uninformed shifts in excess demand. However, the authors noted that the effects were short-lived and consistent with the idea that short-run demand curves for stocks are not perfectly elastic.

Gopalaswamy et al. (2008) employed an event-study residual analysis in order to investigate the differences in stock price reactions of both acquiring and target firms due to merger announcements in Indian markets. Using data that contained all firms that were either an acquirer or a target firm during the period 2000 to 2007 and stock price data obtained from the CMIE database Prowess, the authors found that on average, both acquiring and target firms showed an uptrend in cumulative average abnormal returns ("CAAR") that were a potential result of the merger transaction or a leakage of information. The authors also found that the increase in cumulative average returns around the merger announcement period was higher for acquiring firms than for target firms.

Jain & Sunderman (2013) employed several event study methodologies and regression analyses on a dataset that contained merger announcements over the period January 1996 to December 2010 for stocks listed on the Bombay Stock Exchange. The authors' primary objective was to examine stock price movements in order to assess the existence of informed trading prior to a merger announcement in India. To this end, the authors found evidence that suggested that market reactions in India begin to occur well before the first public announcement of the intended merger. Shah & Arora (2014) used an event study methodology on a sample of merger and acquisition announcements in the Asia-Pacific region during the period of May 2013 to September 2013 to assess the effect of merger and acquisition announcements on the stock prices of both acquiring and target firms. The authors found that in all event windows, the target firm stock prices yielded positive cumulative average abnormal returns that were significantly different from zero. The authors also found that across all event windows, acquisition firm stock prices did not show statistically significant cumulative average abnormal returns.

Sachdeva et al. (2015) employed an event study analysis in order to assess the effect of 85 merger and acquisitions on the wealth of Indian acquiring firm shareholders wealth in the short run during the period 1991 to 2010. Using company data obtained from the Bombay Stock Exchange (“BSE”) and stock price data obtained from the CMIE database Prowess, the authors found that shareholders tended to generate negative but insignificant returns after merger announcement in the short term. Also, the authors found that the shareholders received a significant and positive average abnormal return around the announcement day of the merger and acquisition only. Chhetri & Baral (2018) aimed to investigate whether merger announcements generated wealth effects for shareholders of acquiring and target firms. The authors used an analysis of events in an event study on a dataset that contained 15 financial institutions that entered into mergers in Nepal during the period 2010 to 2012. The authors found that the abnormal returns of both acquiring and target firms prior to merger were not significant, suggesting that there was no impact of merger announcements on shareholder wealth in Nepal’s capital markets.

Yang et al. (2018) examined the relationship between the price movements of target firm stocks and the behaviours of local individuals, local institutions, and foreign investors as a result of merger and acquisition announcements in Korea. Using a dataset that contained information on Korean takeovers from the Securities Data Company (SDC) Platinum’s M&A database, the authors used both an event study methodology and cross-sectional regressions to estimate abnormal returns. The authors found that average abnormal returns become significantly positive three days before the announcement date and become insignificant after the announcement date.

Pandey & Kumari (2020) also employed an event study methodology to assess merger and acquisition announcements on the stock returns of 14 acquiring banks from India and the United States of America (“USA”). Using data obtained from the National Stock Exchange (‘NSE’) and Yahoo Finance, the authors found that the reaction of the share prices of Indian banks tended to be more sensible when compared to Banks in the US. The authors found that the shares of Indian-based banks continued to have significant CAAR’s through the event window and post-event period. In contrast, CAAR’s for US based banks were significant for only a few days around the announcement period.

Oswal & Goel (2020) used an event study methodology on a data set extracted from the Bloomberg terminal that contained 352 merger and acquisition transactions that spanned the period 1 January 2003 to 25 April 2018 in India. The authors aimed to identify the magnitude of excessive returns provided by the shares of an acquiring firm in a merger and/or acquisition transaction. To this end, the authors found a marginal positive abnormal return on the day of the announcement that faded away by the second day of the announcement. Assefa et al. (2021) aimed to investigate whether any abnormal returns existed around merger and acquisition announcements during the period 2009 to 2019. Using data obtained from the Wharton Research Database and a dataset that contained 200 pairs of firms that announced mergers and

acquisitions over the period 2000 to 2019, the authors found significant positive cumulative abnormal returns for target firms a day before the announcement date and up to the announcement date. Additionally, the authors found negative cumulative abnormal returns for acquiring firms a day before the announcement date.

Bacon & Cagigas (2022) employed a risk-adjusted event study methodology to test the effect of 14 merger announcements on stock price returns. Using announcement data obtained from [imaa-institute.org.com](http://imaa-institute.org.com) and stock price and financial performance data from 14 firms, the authors found that investors were unable to make above-normal risk-adjusted returns on the announcement of mergers. The authors also found that merger announcements stimulated significant positive returns around the merger announcement. Prabodini & Rathnasingha (2022) aimed to assess the impact of stock split announcements on stock prices at the Colombo Stock Exchange. Using a dataset that contained a sample of 26 stock split announcements that occurred between the period January 2020 to June 2021, the authors employed an event study methodology and found significant average abnormal returns on the day the stock split news is made public. Additionally, the authors found significant positive abnormal returns a day before the disclosure date, which suggested information leakage, and significant negative abnormal returns the next day after the announcement date.

Ramphela (2023) evaluated the impact of mergers and acquisitions on the share price of Johannesburg Stock Exchange listed companies. In addition, the author aimed at investigating whether there was a difference in outcomes between horizontal merger transactions and vertical merger transactions. Utilising a dataset that spanned the period 2009 to 2019, the author employed an event study methodology in order to estimate the cumulative average abnormal returns over a 21-day event window. The author found that in the South African context, mergers and acquisitions did not have an influence on stock returns. However, companies listed on the Johannesburg Stock Exchange did exhibit positive reactions in regard to horizontal merger transactions as opposed to vertical merger transactions.

Sayed (2024) assessed the effects of mergers and acquisitions on stock prices within the Saudi Arabian banking industry. To achieve this, the author used an event study methodology with the aim of examining both short-term and long-term impacts on stock valuations as a result of merger announcements. Using data obtained from the Saudi Arabian stock market and [investing.com](http://investing.com), the author found that there is an immediate positive market response to merger announcements that is driven by the anticipation of synergies between the merging parties, as well as diverse long-term stock price effects that highlight the relationship between initial expectations and actual merger outcomes.

#### **4. EMPIRICAL STRATEGY**

The primary goal of this study is to analyse the reactions of the stock market to merger announcements in South Africa. To achieve this, the study employed an event study methodology on thirteen (13) major mergers and acquisitions that occurred between

the period 2020 and 2025. An event study analysis requires that the event, the date of the event, the event window, the window estimation, and the estimation model are determined (Pandey & Kumari, 2020). The events in this instance are the announcements of mergers and acquisitions, whereas the event dates are the dates of the announcements. The table below reflects both the events and event dates.

**Table 2: Sample Selection**

| Case No.          | Acquiring firm                  | Target firm                   | Announcement Date |
|-------------------|---------------------------------|-------------------------------|-------------------|
| <b>LM011Apr24</b> | Sanlam Life Insurance Ltd       | Assupol Holdings Ltd          | 2024-08-22        |
| <b>LM071Sep21</b> | Shoprite Supermarkets (Pty) Ltd | Massmart Holdings Ltd         | 2022-12-09        |
| <b>LM051Jul23</b> | Afrimat Ltd                     | Lafarge South Africa Holdings | 2024-04-10        |
| <b>LM151Dec23</b> | Sea Harvest Group Ltd           | Terrasan Beleggings (Pty) Ltd | 2024-05-09        |
| <b>LM156Dec21</b> | Impala Platinum Holdings Ltd    | Royal Bafokeng Platinum Ltd   | 2022-11-16        |
| <b>LM089Oct21</b> | Firststrand Bank Ltd            | Kulula Air                    | 2021-12-06        |
| <b>LM172Jan23</b> | Clicks Investment               | Sorbet Holdings               | 2023-06-01        |
| <b>LM135Dec21</b> | A.P Moller-Maersk S/A           | Senator International         | 2022-03-02        |
| <b>LM073Sep21</b> | Standard Bank Group Ltd         | Liberty Holdings Ltd          | 2021-12-09        |
| <b>LM175Jan23</b> | Santam Ltd                      | MTN Portfolio                 | 2023-03-13        |
| <b>LM059Aug21</b> | Sanlam Life Insurance Ltd*      | Alexander Forbes              | 2021-10-26        |
| <b>LM045Jun24</b> | Redefine Properties Ltd         | Setso Property Fund (Pty) Ltd | 2024-07-30        |
| <b>LM136Dec21</b> | Sunside Acquisitions (Pty) Ltd  | Namibian Breweries Investment | 2023-03-08        |

*Source: authors computations using Competition Tribunal website*

As reflected above, the study evaluated a total of thirteen (13) announcements (events) that involve ten (13) different dates (event dates). Additionally, each event window is made up of 20 days from -10 to +10 business days. Daily stock price data was collected for each transaction from reliable data sources. In addition to the above, this study employed the market model in order to estimate the abnormal returns. Abnormal returns are estimated by subtracting the expected return from the actual return on the stock market (Pandey & Kumari, 2020). To this end, we estimated the abnormal returns for each day of the event window. The formula below is used to estimate the abnormal returns:

$$AR_{Ft} = R_{Ft} - ER_{Ft} \quad (1)$$

Where  $AR_{Ft}$  represents the abnormal return on the firm's stock  $F$  on day  $t$ .  $R_{Ft}$  represents the actual return on the firm's stock  $F$  on day  $t$ . Whereas  $ER_{Ft}$  represents the expected return on the firm's stock  $F$  on day  $t$ . Furthermore, in order to estimate the actual return of a security, we subtracted the previous day's security price from the price as on the day of calculation and then divided the difference by the previous day. In addition, to calculate  $R_{Ft}$ , this study employed the formula below:

$$R_{Ft} = \frac{P_{Ft} - P_{Ft-1}}{P_{Ft-1}} \times 100 \quad (2)$$

Where  $P_{Ft}$  represents the price of the firm's stock  $F$  on day  $t$  and  $P_{Ft-1}$  represents the price of the firm's stock  $F$  before day  $t$ . Further, the expected return on the firm's stock  $F$ ,  $ER_{Ft}$  is estimated using the following formula:

$$ER_{Ft} = \alpha + \beta_j(R_{mt} - \alpha) \quad (3)$$

Where  $\alpha$  and  $\beta_j$  represent the intercept and slope of the regression model respectively.  $R_{mt}$  represents the rate of return on the Johannesburg Stock Exchange on day  $t$ . After the abnormal returns for each day in the event period have been estimated, the average abnormal returns of the sample are estimated by dividing the aggregated abnormal returns by the sample size. Using this approach, the average abnormal returns ("AARs") for the firm's stock  $F$  are estimated using the formula found below:

$$AAR_{Fk} = \frac{1}{N} \sum_{F=1}^K AR_{Ft} \quad (4)$$

Where  $AAR_{Fk}$  represents the average abnormal return for the firm's stock  $F$  for the period  $K$  whereas  $N$  represents the sample size. Subsequent to estimating the AARs, this study will also estimate the cumulative average abnormal returns ('CAARs') using the following formula:

$$CAAR_{Fk_1, k_2} = \sum_{k=k_1}^{k_2} AR_{Ft} \quad (4)$$

Where  $k_1, k_2$  represent the period of the event window.

Following the estimation of both AARs and CAARs for the event period, this study tested significance. With regard to the AARs, the t-statistics  $t_{AAR}$  was employed. This was achieved by dividing the AARs by the standard deviation of the aggregate estimation period of the daily abnormal returns. Regarding the CAARs, this study employed the t-statistics  $t_{CAAR}$  which is estimated by dividing the CAARs with the product of the aggregate estimation period standard deviation of the daily abnormal returns and the square root of the absolute value of the event day plus 1. To this end, the formula below is employed to estimate the standard deviation of the estimation period of daily abnormal returns.

$$\sigma_{j,est} = \sqrt{\frac{\sum_{-90}^{-31} (AR_{Ft} - AAR_{est})^2}{n}} \quad (5)$$

Where  $\sigma_{j,est}$  represents the estimation period standard deviation of the daily abnormal returns and  $AAR_{est}$  represents the average abnormal return on the firm's stock  $F$  for the estimation period. Further,  $n$  represents the number of days in the estimation period. Furthermore, the standard deviation of the aggregate estimation period standard deviation,  $\sigma_{j,est}$  can be derived using the following formula:

$$\sigma_{N,est} = \sqrt{\frac{\sum_{i=1}^N \sigma_{i,est}^2}{N^2}} \quad (6)$$

Lastly, the t-statistics for AARs and CAARs can be estimated using the following formulas:

$$t_{AAR} = \frac{AAR_t}{\sigma_{N,est}} \quad (7)$$

$$t_{CAAR} = \frac{CAAR_t}{\sigma_{N,est} \sqrt{N_{t+1}}} \quad (8)$$

Where  $N_{t+1}$  represents the absolute value of event day  $t$  plus 1. The above test statistics were used to assess the study's null hypothesis, which is abnormal returns on and around the announcement dates are less than or equal to zero. If the AARs are positive and significant, this suggests that the stock market responded positively. Furthermore, if the t-test statistic is greater than the critical values, this suggests that the average abnormal return is statistically significant.

## 5. FINDINGS AND DISCUSSIONS

This section provides a comprehensive analysis of the findings derived from the event study. Table 3 summarizes the descriptive statistics of the individual companies on the announcement day. This includes the share price, trading volume (Vol), actual returns (R), abnormal returns (AbR), and cumulative abnormal returns (CAR). Notably, actual returns for several companies, including Afrimat, Click Investment and A.P. Moller-Maersk S/A, were positive on the announcement day. Similarly, the abnormal returns for these companies were also positive on the announcement day. In stark contrast, Sanlam Insurance, Shoprite Holdings and Impala Platinum experienced negative actual and abnormal returns over the same timeframe.

**Table 3: Descriptive statistics**

| Acquiring firm        | Event Day  | Price | Open  | High  | Low    | Vol.    | R      | AbR    | CAR    |
|-----------------------|------------|-------|-------|-------|--------|---------|--------|--------|--------|
| Sanlam Insurance Ltd  | 2024/08/22 | 8,405 | 8,4   | 8,614 | 8,375  | 2.95M   | -0.51% | -0.61% | 1.11%  |
| Shoprite Holdings Ltd | 2022/12/09 | 23,8  | 24,8  | 24,8  | 23,621 | 2.19M   | -3.34% | -3.46% | -3.30% |
| Afrimat Ltd           | 2024/04/10 | 6     | 5,765 | 6,003 | 5,76   | 293.78K | 3.54%  | 3.77%  | 4.19%  |

|                          |            |        |        |        |        |         |        |        |        |
|--------------------------|------------|--------|--------|--------|--------|---------|--------|--------|--------|
| Sea Harvest Ltd          | 2024/05/09 | 785    | 785    | 785    | 785    | 79.22K  | 0.00%  | 0.20%  | 3.77%  |
| Impala Platinum Holdings | 2022/11/16 | 19,75  | 20,4   | 20,748 | 19,617 | 3.00M   | -3.25% | -3.65% | -4.07% |
| Firststrand Bank Ltd     | 2021/12/06 | 5,699  | 5,6    | 5,716  | 5,592  | 11.56M  | 1.73%  | 1.73%  | 4.33%  |
| Clicks Investment        | 2023/06/01 | 23,95  | 23,304 | 24,075 | 23,304 | 2.11M   | 2.13%  | 2.50%  | 1.17%  |
| A.P Moller-Maersk S/A    | 2022/03/02 | 20,592 | 19,582 | 20,813 | 19,283 | 37.73K  | 3.73%  | 4.04%  | 1.35%  |
| Standard Bank Group Ltd  | 2021/12/09 | 13,511 | 13,5   | 13,66  | 13,415 | 2.26M   | 0.08%  | 0.12%  | 0.62%  |
| Santam Ltd               | 2023/03/13 | 27,94  | 28,284 | 28,469 | 27,339 | 132.42K | -1.31% | -1.54% | 0.35%  |
| Sanlam Insurance Ltd*    | 2021/10/26 | 6,252  | 6,212  | 6,288  | 6,186  | 3.28M   | 0.22%  | 0.12%  | 0.67%  |
| Redefine Properties Ltd  | 2024/07/30 | 415    | 415    | 421    | 412    | 6.26M   | -0.48% | -0.71% | 0.98%  |
| Sunside Acquisitions Ltd | 2023/03/08 | 82.25  | 82.00  | 82.50  | 81.75  | 133.29K | 0.86%  | 0.55%  | 0.17%  |

*Source: authors' computations*

Observations from Table 3 further reveal that the cumulative abnormal returns for most entities, with the exception of Shoprite Holdings and Impala Platinum, were positive on the announcement day. This suggests that their stock prices reacted favourably to the event. van Lanh (2022) likewise found evidence of positive abnormal returns around the announcement day of mergers and acquisitions in the US retail industry. Among the companies listed in Table 3, Sanlam Life recorded the highest cumulative abnormal returns, followed by Sea Harvest, Santam Ltd, and A.P Moller-Maersk S/A. In contrast, Clicks Investment and Sunside Acquisitions displayed the lowest values in cumulative abnormal returns.

Table 4 below outlines the cumulative abnormal returns for each company over a 20-day period (-10 t +10). During this timeframe, Shoprite experienced an average cumulative abnormal return contraction of 6.1%, reflecting a negative market reaction to the event. Conversely, Sanlam's average cumulative abnormal returns were at 3.1%, with Maersk at 0.8%, Sea Harvest at 0.9%, and Afrimat at 1.4%. Notably, Impala achieved the highest average cumulative abnormal returns for the period, amounting to 4.5%. Two key insights can be drawn from these observations. First, they indicate that the markets were highly efficient in absorbing information during the 20-day period. Second, they demonstrate that the stock prices of both Impala and Sanlam Life responded positively to the merger decisions.

**Table 4: Individual company cumulative abnormal returns over 20 day period**

| Day (t) | Shoprite | Sanlam | Maersk | Sea Harvest | Afrimat | Impala |
|---------|----------|--------|--------|-------------|---------|--------|
| -10     | 0.4%     | 5.5%   | 1.1%   | 1.7%        | 1.6%    | 8.8%   |
| -9      | 0.0%     | 2.7%   | 1.7%   | 0.9%        | -1.2%   | -1.4%  |
| -8      | -0.6%    | 2.3%   | -1.0%  | 1.0%        | 2.4%    | 11.2%  |
| -7      | 0.9%     | 4.5%   | -1.8%  | -3.2%       | 0.0%    | 4.7%   |
| -6      | -4.7%    | 4.6%   | 2.0%   | 2.1%        | 0.0%    | 2.8%   |
| -5      | 0.4%     | 4.5%   | -2.1%  | 4.4%        | 0.8%    | 4.0%   |

|                |              |             |             |             |             |             |
|----------------|--------------|-------------|-------------|-------------|-------------|-------------|
| <b>-4</b>      | 1.1%         | 4.1%        | -3.6%       | -0.1%       | 3.9%        | 6.7%        |
| <b>-3</b>      | 2.3%         | 3.1%        | 3.7%        | 1.0%        | -6.9%       | 3.0%        |
| <b>-2</b>      | -0.6%        | 1.4%        | -1.3%       | 2.3%        | 3.8%        | 2.6%        |
| <b>-1</b>      | -0.1%        | 3.0%        | -1.0%       | -0.8%       | 1.7%        | 5.0%        |
| <b>0</b>       | -3.3%        | 2.1%        | 4.6%        | 1.0%        | 7.5%        | 0.7%        |
| <b>1</b>       | 0.5%         | 4.6%        | 2.8%        | 2.6%        | 9.3%        | 4.4%        |
| <b>2</b>       | 0.1%         | 2.6%        | -2.2%       | -0.5%       | 5.9%        | 4.1%        |
| <b>3</b>       | -0.3%        | 2.2%        | -4.1%       | 2.7%        | 0.1%        | 2.6%        |
| <b>4</b>       | -2.8%        | 3.9%        | -2.4%       | 1.0%        | -3.4%       | 4.5%        |
| <b>5</b>       | 2.4%         | 5.8%        | 6.3%        | 0.9%        | 0.8%        | 7.1%        |
| <b>6</b>       | -0.1%        | 2.4%        | 0.9%        | -1.7%       | 0.1%        | 4.3%        |
| <b>7</b>       | 0.3%         | -0.8%       | 6.2%        | 0.8%        | 1.1%        | 2.6%        |
| <b>8</b>       | -0.6%        | 1.8%        | 7.1%        | 1.0%        | 1.2%        | 5.1%        |
| <b>9</b>       | 0.2%         | 2.4%        | 2.1%        | 1.0%        | 0.7%        | 3.2%        |
| <b>10</b>      | -1.5%        | 3.3%        | -3.3%       | 1.3%        | 0.5%        | 8.0%        |
| <b>Average</b> | <b>-6.1%</b> | <b>3.1%</b> | <b>0.8%</b> | <b>0.9%</b> | <b>1.4%</b> | <b>4.5%</b> |

*Source: authors' computations*

An intriguing finding is that on the event date ( $t+0$ ), the cumulative abnormal returns for Shoprite Holdings declined sharply by 3.3%. In contrast, the cumulative abnormal returns for Maersk and Afrimat were notably significant, standing at 4.6% and 7.5%, respectively. This suggests that their stock prices reacted positively to the event. Impala and Sea Harvest recorded moderate cumulative abnormal returns of 0.7% and 1%, respectively. A similar trend was observed on day  $t+1$ , where all entities reported positive cumulative abnormal returns. However, these gains were somewhat short-lived by day  $t+2$ . These findings align with the research conducted by Gopalaswamy et al. (2008), which showed that acquiring companies typically experience higher returns during the announcement period although there is a downward trend in cumulative returns in the period following the merger.

Table 5 below outlines the cumulative abnormal returns for additional companies over a 20-day period ( $-10$  to  $+10$ ). Several companies, including Clicks, Redefine, and Sanlam, experienced negative average cumulative abnormal returns during this 20-day period, indicating that, on average, the market reacted unfavourably to the events. In contrast, Standard Bank Group, FirstRand, Sunside, and Santam achieved positive abnormal returns throughout the entire period, demonstrating that the market responded positively to the merger decisions communicated by the authorities.

**Table 5: Individual company cumulative abnormal returns over 20 day period**

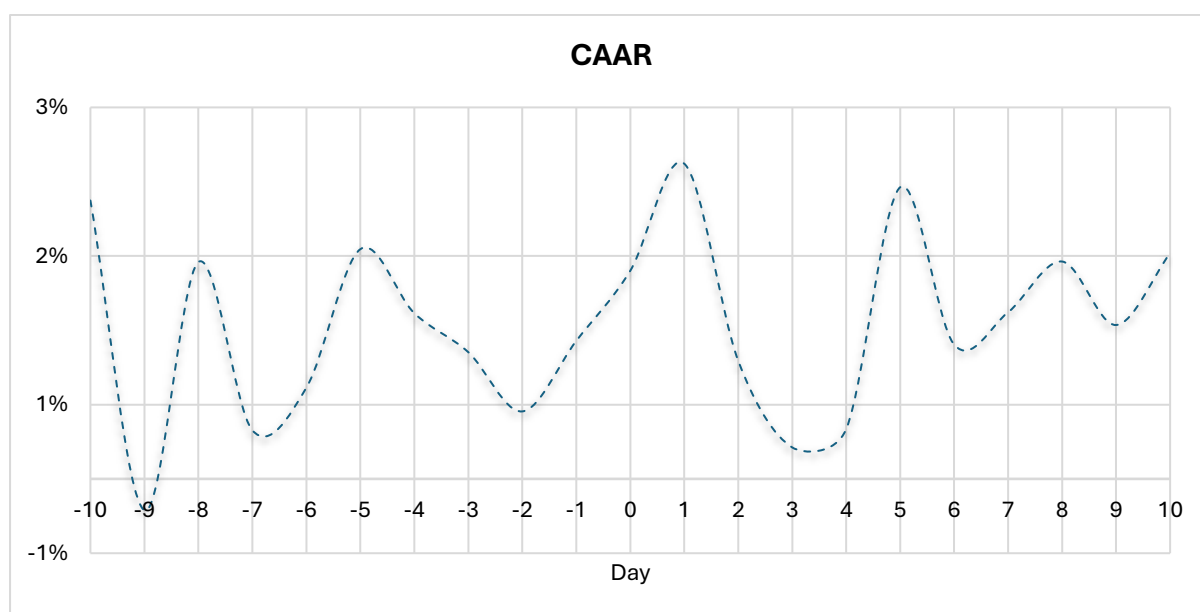
| <b>Day (t)</b> | <b>Standard Bank</b> | <b>Clicks</b> | <b>FirstRand</b> | <b>Sunside</b> | <b>Redefine</b> | <b>Sanlam*</b> | <b>Santam</b> |
|----------------|----------------------|---------------|------------------|----------------|-----------------|----------------|---------------|
| <b>-10</b>     | 3.5%                 | -4.0%         | 3.0%             | 3.5%           | -1.4%           | -0.9%          | 1.6%          |
| <b>-9</b>      | -5.5%                | -1.3%         | 1.1%             | 0.5%           | -1.6%           | -1.8%          | 3.2%          |
| <b>-8</b>      | 6.7%                 | -2.2%         | -0.5%            | 1.2%           | -3.5%           | -1.2%          | 3.2%          |
| <b>-7</b>      | 2.3%                 | -2.2%         | 2.2%             | 0.3%           | -0.9%           | -1.0%          | -1.4%         |
| <b>-6</b>      | 3.4%                 | -0.9%         | -5.5%            | 1.5%           | -0.5%           | 1.6%           | 1.5%          |
| <b>-5</b>      | 2.3%                 | -3.3%         | 4.1%             | 1.4%           | 1.0%            | 0.1%           | 2.7%          |

|                |           |              |             |             |              |              |             |
|----------------|-----------|--------------|-------------|-------------|--------------|--------------|-------------|
| <b>-4</b>      | 2.0%      | -1.7%        | 2.5%        | 3.6%        | -2.6%        | -0.6%        | -0.9%       |
| <b>-3</b>      | 3.6%      | -1.8%        | 4.4%        | 1.1%        | -0.7%        | -2.2%        | 0.4%        |
| <b>-2</b>      | 1.8%      | -4.6%        | 1.2%        | 0.8%        | -2.6%        | 0.4%         | 0.8%        |
| <b>-1</b>      | 1.8%      | -1.6%        | 1.3%        | 1.0%        | 0.5%         | 0.8%         | 0.3%        |
| <b>0</b>       | 1.9%      | 0.5%         | 3.2%        | 2.3%        | -1.4%        | -0.3%        | -0.7%       |
| <b>1</b>       | 0.5%      | -0.5%        | 2.5%        | 2.0%        | 1.7%         | -0.4%        | -2.5%       |
| <b>2</b>       | 0.8%      | 0.7%         | 1.5%        | 0.7%        | 0.9%         | -0.3%        | -3.9%       |
| <b>3</b>       | 1.7%      | -1.1%        | 1.4%        | -0.6%       | -2.8%        | -0.6%        | 1.6%        |
| <b>4</b>       | 3.2%      | -0.2%        | -0.7%       | 2.3%        | -2.3%        | 0.1%         | 1.2%        |
| <b>5</b>       | 2.1%      | -1.5%        | 0.1%        | 0.3%        | -0.9%        | 0.2%         | 2.0%        |
| <b>6</b>       | -0.9%     | 1.3%         | 2.1%        | 4.0%        | 1.4%         | -0.8%        | -1.4%       |
| <b>7</b>       | 3.0%      | -2.8%        | 4.0%        | -0.7%       | 0.7%         | -1.1%        | 1.2%        |
| <b>8</b>       | 3.3%      | 0.5%         | 3.4%        | 1.8%        | -2.3%        | -2.3%        | -1.1%       |
| <b>9</b>       | 3.2%      | -1.6%        | -0.8%       | 2.3%        | -0.5%        | -1.2%        | 2.4%        |
| <b>10</b>      | 2.1%      | 0.7%         | 3.1%        | 2.8%        | 0.9%         | -2.1%        | 3.8%        |
| <b>Average</b> | <b>2%</b> | <b>-1.3%</b> | <b>1.6%</b> | <b>1.5%</b> | <b>-0.8%</b> | <b>-0.6%</b> | <b>0.7%</b> |

Source: authors' computations

On the event day ( $t+0$ ), the market exhibited varying responses to different events. For example, decisions related to Standard Bank, FirstRand, Clicks, and Sunside Acquisitions received a positive market reaction, while the decisions concerning Redefine, Sanlam, and Santam were met with unfavourable responses. A similar trend was noted by Pandey and Kumari (2020), who discovered that while different markets respond distinctively, such news influences stock price reactions by generating abnormal returns around the announcement date. Barasa (2015) also identified varying responses. He found that in some cases, share prices declined, while in others, they increased substantially. Figure 5 presents the cumulative average abnormal returns for all the stocks.

**Figure 5: Cumulative Average Abnormal Returns**



Source: authors' computations

For the majority of the observed period, with the notable exception of day t-9, the cumulative average abnormal returns showed positive values. In particular, on the event day (t+0), the cumulative average abnormal returns peaked at 2%, whereas the lowest value recorded was -0.21 on t-9. These observations carry several positive implications. Firstly, it indicates that the markets and corresponding stock prices can be considered highly efficient, as the information regarding merger decisions was absorbed by the market with little to no delay. Additionally, the days leading up to the decisions reflected a generally positive market sentiment. Secondly, the market's response to the respective merger decisions was predominantly favourable, suggesting that the news, specifically about the decisions, was well received.

It is important to note that there may be some bias in this analysis, as the merger decisions selected for this study were either approved unconditionally or subject to conditions. The findings might be different had prohibited mergers been included in the sample. Nevertheless, our findings are consistent with those of Pandey and Kumari (2020), who demonstrated that cumulative average abnormal returns in the Indian stock market were quite significant on most days within the designated event window period, continuing into the post-event window as well. In a more recent study, Marisetty and Koluru (2024) also found that stock prices tend to fluctuate, reaching a peak on the announcement day, and gradually declining as the market processes the information and makes adjustments. This observation supports the semi-strong form of the Efficient Market Hypothesis, suggesting that stock prices rapidly reflect publicly available information, including announcements related to mergers and acquisitions.

## 6. CONCLUSION

The primary objective of this study was to examine stock market responses to merger decisions made by South African competition authorities. The sample consisted of thirteen significant mergers and acquisitions that took place in the aftermath of the Covid-19 pandemic, specifically focusing on decisions made between 2020 and 2025. The data was analysed using an event study approach, which is particularly relevant to the study's objectives. Various elements of the event study methodology were taken into account, including abnormal returns, cumulative abnormal returns, and cumulative average abnormal returns. Overall, the cumulative average abnormal returns exhibited positive trends throughout the event window, suggesting that, at an aggregate level, the markets reacted favourably to the merger decisions, especially for those mergers that received approval from South African competition authorities. Notably, on the event day (t+0), cumulative average abnormal returns peaked at 2%, indicating that the markets were highly efficient as information regarding the merger decisions was incorporated swiftly and with minimal delay.

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