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Market Reactions to Mergers and Acquisitions Announcements in The Saudi Arabian Insurance Industry: An Event Study Analysis

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Abstract

In recent years, mergers and acquisitions have reshaped many sectors, with the insurance industry in Saudi Arabia being no exception. This study examines the influence of mergers on the stock performance of Saudi Arabian insurance companies by utilizing the Event Study Methodology. Five distinct merger cases serve as the focal point of the analysis. Both daily abnormal returns (AR) and cumulative abnormal returns (CAR) during different time frames are scrutinized. While the daily AR data showcased a spectrum of immediate investor reactions, some showing optimism and others indicating apprehension, the long-term CAR evaluation provided a more nuanced view. When assessed over a 180-day period post-merger, results revealed a complex landscape of stock performance outcomes. Some companies witnessed significant stock price appreciations, while others experienced marked declines. This variance underscores the multifaceted impacts of mergers on stock prices within the Saudi insurance sector. The observed outcomes can be attributed to market anticipations, internal corporate strategies, and broader economic factors. These findings provide crucial insights for investors, policymakers, and companies contemplating mergers, emphasizing the necessity of a comprehensive and context-specific assessment. Moreover, the study's results contribute significantly to the existing literature, offering a detailed perspective on merger impacts in emerging markets, particularly in the unique economic landscape of Saudi Arabia.

Keywords: Mergers and Acquisitions, Insurance Industry, Event Study Methodology, Stock Prices, Saudi Arabia.

Introduction to the Study

In today's rapidly transforming financial arena, comprehending the complex dynamics of mergers and acquisitions (M&As) has become more critical than ever. With the financial sectors experiencing constant ebbs and flows, it is the intricate dance of M&As that often lays the groundwork for future market shifts. This becomes particularly evident in the context of the Saudi Arabian insurance sector, a realm undergoing swift metamorphosis. In this vibrant sector, M&As have the power to not only impact stock prices but also to redefine the very trajectory of the market.

In recent memory, Saudi Arabia's insurance sector has been the stage for a spate of prominent M&As, each with the promise of redefining the sector's landscape. While these M&As have captured headlines, there exists a discernible gap in academic exploration on their direct implications for stock prices. This raises pivotal questions for industry observers: Do these corporate amalgamations trigger an uptick in stock prices owing to the anticipation of synergistic benefits? Alternatively, could they prompt a decline, reflecting apprehensions about the hurdles of successful integration? This study delves deep into these queries, aiming to shed light on the intricate interplay between M&As and stock value in the industry.

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In the grander scheme of things, M&As often serve as a barometer, reflecting broader economic trends and nuanced sector-specific shifts. For stakeholders, be it investors, regulatory bodies, or corporate planners in Saudi Arabia, decoding the ramifications of M&As on stock prices is not just beneficial—it's imperative. Insights derived from such understanding can revolutionize investment trajectories, fine-tune regulatory blueprints, and mold corporate blueprints. Furthermore, in line with Saudi Arabia's ongoing efforts to diversify its economic fabric, nurturing a robust and agile insurance sector is of utmost priority. Thus, the pertinence of this study extends beyond its core audience, resonating with Saudi Arabia's overarching economic aspirations.

Aiming to fill the existing knowledge void, this study sets forth with several primary objectives:

- (1) To rigorously assess the influence of M&As on stock prices within the Saudi Arabian insurance landscape.
- (2) To identify and interpret emerging trends following M&As, especially in the context of stock price movements.
- (3) To craft a theoretical scaffold that resonates with and bolsters the empirical observations.

For a structured dissection of this topic, the research has been meticulously segmented. Following this introductory segment, Chapter 2 delves into a comprehensive literature review. This chapter paints a vivid picture of the theoretical foundations and peers into the findings of earlier empirical pursuits centered on the interplay between M&As and stock prices. Subsequently, Chapter 3 elucidates the research methodology, spotlighting the sources of data, the event study paradigm, and the chosen statistical instruments. Chapter 4 takes the reader through the research's pivotal findings and their subsequent analysis. The study reaches its crescendo in Chapter 5, which encapsulates the primary takeaways and proffers suggestions for ensuing academic endeavors.

Literature Review

This section consists of four sub-sections: the Theoretical Underpinnings of M&As, the review of recent papers, the Research Gap, and the Hypotheses.

Theoretical Underpinnings of M&As

The endeavour to understand Mergers and Acquisitions (M&As) impact on stock prices in Saudi Arabia's insurance sector necessitates a foray into various theories that underlie financial markets and corporate behaviour. This is the intellectual bedrock upon which the rest of our study is built. This section aims to delve into key theories illuminating the complexities of M&As and their subsequent influence on stock prices. By doing so, we aim to provide a conceptual framework that clarifies and enriches this study's empirical findings.

As we examine the Saudi Arabian insurance sector through these theories, we uncover a multifaceted landscape shaped by elements such as market efficiency, investor behaviour, information distribution, and the intricate relationships between company stakeholders. We explore theories ranging from the Efficient Market Hypothesis to the Resource-Based View, contemporary perspectives like the Adaptive Markets Hypothesis, and more. Each theoretical discussion will not only include its general principles but also its specific applicability to the dynamics of M&As within the unique financial and regulatory environment of Saudi Arabia.

The theories considered in this section are seminal and have been subject to extensive scholarly investigation. They are also theories that have sometimes been critiqued, extended, or modified, reflecting the evolving nature of financial markets and corporate governance. Therefore, understanding these theories in their nuanced forms is pivotal for the task at hand in order to interpret how and why stock prices change during M&As in Saudi Arabia's insurance sector. A detailed discussion of these theories follows, supplemented by empirical evidence and scholarly arguments.

Financial Market Theories

There are three main theories here:

Efficient Market Hypothesis (EMH)

Developed by Eugene Fama in 1970, the EMH posits that stock prices fully reflect all available information. The hypothesis has three forms: weak, semi-strong, and strong; each has implications for how quickly and accurately information is reflected in stock prices. This theory serves as the bedrock for the event study methodology we employ. The EMH has been explored extensively in the literature, yet its assumptions have also been questioned. Some studies have provided evidence supporting market efficiency, while others, such as Shiller (1981), have shown that markets can behave irrationally. Additional Studies are Roberts, H. (1967); Malkiel, B. (1981); Fama, E. (1991).

Random Walk Theory

This theory suggests that stock price changes have the same distribution and are independent. It is often tested against EMH in the literature. Proposed as a financial theory by Eugene Fama in 1965 and popularized through Burton Malkiel's book "A Random Walk Down Wall Street," this theory posits that stock prices follow a random path independent of past movement.

According to the Random Walk Theory, since stocks follow a random and unpredictable path, predicting future movements based on historical data is futile. If stock prices are indeed random, predicting the outcome of an M&A transaction on stock prices would be impossible, underlining the potential risk and uncertainty associated with M&A decisions.

Adaptive Markets Hypothesis

Developed by Andrew Lo in 2004, the Adaptive Markets Hypothesis suggests that markets could be more efficient and more efficient. Instead, they adapt to various factors such as policies, technologies, and social trends, dynamically changing in terms of efficiency.

The AMH considers the psychological factors that drive investor behaviour. Market participants adapt to new information, leading to changes in market efficiency. For instance, during an M&A announcement, the market may show heightened volatility as participants process the implications of the merger for both the acquirer and target firms. In the Saudi Arabian insurance industry context, AMH can help explain why market reactions to M&As are only sometimes consistent, mainly if there are changes in regulations, public sentiment, or other macroeconomic conditions affecting the insurance sector.

Financial Market Theories can be summarised in Table 1 below:

Table 1: Financial Market Theories and Key Studies.

Theory	Key Study	Elaboration
Efficient Market Hypothesis (EMH)	Fama, E. (1970)	Suggests that all available information is immediately incorporated into stock prices. EMH exists in three forms: weak, semi-strong, and strong, which differ based on the type of information considered (historical, publicly available, all-inclusive).
Random Walk Theory	Malkiel, B. (1973)	Proposes that stock price changes are random and not influenced by past price changes. It is often considered alongside EMH to study stock price behaviours.
Adaptive Markets Hypothesis	Lo, A. (2004)	Asserts that markets are only sometimes efficient but adapt over time based on the behaviours and strategies of market participants.

Corporate Finance Theories

There are four main theories here:

Information Asymmetry and Signalling Theory

This theory, proposed by Stephen Ross in 1977, suggests that corporate actions could serve as 'signals' to the market. For instance, an M&A could signal a company's solid financial health or strategic direction, positively or negatively affecting its stock price. Information asymmetry occurs when one party in a transaction has more or better information than the other. Signalling Theory, discussed by Michael Spence in 1973, relates to how informed parties can signal their private information to the market.

In the case of M&As, managers of the acquiring company may have inside information about the potential synergies or prospects. They may send out signals to the market, such as premium pricing in a bid, to indicate their valuation of the target. In Saudi Arabia's insurance sector, signalling can play a critical role in how investors interpret M&A deals. Premiums or discounts in acquisition prices can affect post-merger stock prices.

Agency Theory

Agency issues between shareholders and management can impact M&A outcomes, which is particularly relevant for acquirers' stock price reactions. Definition: Introduced by Jensen and Meckling in 1976, Agency Theory deals with the relationship between principals (shareholders) and agents (managers), focusing on resolving conflicts of interest.

The theory highlights the importance of performance-based incentives and monitoring systems to align the interests of shareholders and managers. When an insurance company in Saudi Arabia plans to acquire another, the agents (management) must ensure that the action aligns with the principals' (shareholders) interests; otherwise, it could lead to adverse market reactions affecting the stock prices.

Understanding these theories can significantly enhance research into M&As, particularly in specific sectors like insurance in Saudi Arabia, by providing frameworks to analyze stock price movements and investor behaviour.

Resource-Based View

Definition: Introduced by Jay Barney in 1991, the Resource-Based View posits that companies achieve and sustain competitive advantage through the effective deployment of internal resources that are valuable, rare, and non-substitutable.

RBV is focused on internal organizational resources such as skills, capabilities, and technologies. The strategic value of M&As can be assessed based on how effectively the acquiring firm can integrate and utilize the target firm's resources. RBV is particularly relevant in the insurance sector, where intangible assets like customer relationships and proprietary data analytics algorithms can be key competitive advantages. If a Saudi Arabian insurance company acquires another with complementary resources, it could significantly enhance its market standing.

Synergy Theory

The Synergy Theory suggests that the combined value of merged firms is greater than the sum of the individual entities. Chatterjee elaborated on this in 1986, focusing on how M&As can result in cost reduction and revenue enhancement.

The theory is generally classified into two types of synergies—operational and financial. Operational synergies come from integrated operations, economies of scale, and better resource utilization. Financial synergies may arise from improved capital allocation and enhanced debt capacity. In the Saudi Arabian insurance industry context, operational synergies could involve combining distribution networks or integrating technology platforms to offer better customer services. Financial synergies might include capital advantages from a broader customer base, leading to improved stock prices post-merger.

Corporate Finance Theories can be summarised in Table 2 below:

Table 2: Corporate Finance Theories and Key Studies.

Theory	Key Study	Elaboration
Information Asymmetry and Signalling Theory	Ross, S. (1977)	Highlights how M&As can serve as a 'signal' to the market, impacting stock prices based on how the action is perceived regarding value and risk.
Agency Theory	Jensen, M., & Meckling, W. (1976, 2019)	Explains how conflicts of interest between company management and shareholders can influence M&A decisions and outcomes.
Resource-Based View	Barney, J. (1991)	Proposes that firms gain and sustain competitive advantage by deploying valuable, rare and non-substitutable resources, which can be acquired through M&As.
Synergy Theory	Chatterjee, S. (1986)	Focuses on the synergistic benefits that M&As bring to firms in terms of cost reduction and revenue

Review in Recent Studies

This comprehensive review encompasses five notable papers that collectively offer valuable insights into mergers and acquisitions (M&A) within the financial sector.

The study by Chen, Ramaya, and Wu (2020) investigates the impact of M&A announcements on bondholders, revealing that such events have discernible effects on bondholder wealth,

highlighting the significance of M&A developments for this stakeholder group. Dash's paper (2018) provides a comprehensive overview of the M&A landscape within the Indian insurance sector, emphasizing its potential for growth and development, making it a key reference for understanding M&A dynamics in the Indian financial market.

Jensen and Meckling's work (2019) contributes foundational insights into the theoretical underpinnings of the firm, agency costs, and ownership structures, which are vital for comprehending the motivations and implications of M&A activities in the financial sector. Kunyoria's dissertation (2018) delves into the impact of M&A announcements on share returns of insurance companies listed on the Nairobi Securities Exchange, shedding light on the unique dynamics specific to the Nairobi financial sector. Lastly, the systematic review by Mehrotra and Sahay (2018) offers a comprehensive overview of trends, challenges, and benefits within the Indian financial landscape, contributing to a deeper understanding of M&A outcomes in this context.

Collectively, these selected papers enhance our understanding of mergers and acquisitions in the insurance sector, encompassing the wealth effects on bondholders, the dynamics in the Indian insurance industry, foundational theoretical insights, specific market dynamics in Nairobi, and a systematic analysis of M&A performance in India. These insights are invaluable for researchers, practitioners, and policymakers seeking to navigate and make informed decisions in the ever-evolving realm of insurance sector M&A.

The Hypotheses

Based on a preliminary literature review and industry insights, the study posits the following hypotheses:

H1: *M&As in the Saudi Arabian insurance industry immediately led to a significant positive change in the companies' stock prices.*

H2: *M&As in the Saudi Arabian insurance industry lead to a significant positive change in the companies' stock prices in the medium and long term.*

The Research Gap

The existing body of literature on Mergers and Acquisitions (M&As) and their impact on stock prices is extensive, covering various industries and geographical locations. However, a glaring gap exists regarding studies explicitly focused on the Saudi Arabian insurance sector. While the financial market in Saudi Arabia has been studied through various lenses, such as market efficiency, investment behaviour, and even some aspects of corporate M&As, the narrow focus on the insurance industry and its unique dynamics still needs to be explored.

Moreover, previous studies on M&As often adopt a more generalized approach, treating all sectors as largely homogenous in terms of investor behaviour, regulatory influences, and market responses. This generalization leaves a gap in our understanding of how the specific attributes of the Saudi Arabian insurance industry—such as its regulatory framework, investor profile, and market competition—affect the impact of M&As on stock prices.

The research gap extends to the timeframes and conditions under which these M&As occur. Existing research has primarily focused on long-term impacts, often neglecting the short-term volatility and market reactions that can offer crucial insights into investor sentiment and market

efficiency. Additionally, the unique economic conditions of Saudi Arabia—being an oil-based economy aiming for diversification—create a memorable backdrop against which these M&As and stock price movements should be examined.

Furthermore, the Saudi Arabian insurance sector has witnessed significant changes in recent years, including regulatory shifts and the introduction of new market participants, which make it a timely and relevant subject for study. Given these changes, it becomes increasingly important to understand how M&As influence stock prices in the current context.

Lastly, while theories like the Efficient Market Hypothesis and Agency Theory have been applied to Western markets extensively, their applicability to the Saudi context still needs to be studied, forming another layer to the research gap this study aims to fill.

In summary, the specific focus on the Saudi Arabian insurance industry, combined with the examination of both short-term and long-term impacts of M&As on stock prices, the contextual backdrop of an evolving regulatory framework, and the application of various financial theories to this setting, all contribute to the novelty and importance of this study. The research aims to offer a nuanced, targeted, and timely understanding of the phenomena at hand by addressing these gaps.

Data and Methodology

Before we delve into this research's detailed analysis and findings, it is critical to lay the groundwork by explaining the methods and data we use. This is the bedrock upon which the study is built; the quality and reliability of our conclusions are directly tied to the robustness of our methodology.

Our focus is on the insurance sector in Saudi Arabia, a context that comes with its unique set of rules, opportunities, and challenges. We examine how mergers and acquisitions—a commonly observed corporate strategy—affect the companies' stock prices. In the following section, we will be transparent about where our data comes from, how we have selected it, and the specific models and equations we employ for our analysis. This is important because the choices made here directly impact the validity of our findings.

The insurance industry in Saudi Arabia serves as an exemplary arena to explore the impacts of M&As, mainly due to the country's unique confluence of Islamic finance and contemporary insurance practices. Given the recent surge in M&A activities—partially catalyzed by the Vision 2030 policy framework—the sector offers fertile ground for this research (Alkhathlan, 2015). Assiri's findings reveal that it can be concluded that M&As in the Saudi Arabian insurance industry do hold substantial potential for creating value and inducing positive stock price reactions. However, this positive impact is not a universal phenomenon. It is contingent upon many factors, including the merger's particulars, the involved entities' resources, and the executive strategies employed during the M&A process (Assiri, 2021).

Sample Selection and Data Description

To assess the effect of mergers on the stock price of the Insurance sector in the Saudi Arabia stock market (Tadawul), using the Event Study methodology, we rely on data covering the stock prices of the parties of the merger cases. The main Index in the stock market (TASI), which reflects the overall stock market's performance in Saudi Arabia, is selected as the

benchmark index to calculate the abnormal returns of the performance of stock prices of joint banks. We collected daily closing prices of these indexes for six months before the merger and different periods after the events. Information concerning M&As is corroborated through multiple reliable channels:

- Official announcements via the Tadawul Stock Exchange (Tadawul, 2022).
- Disclosures submitted to the Saudi Capital Market Authority (CMA, 2022).

To ensure the robustness of the study, we concentrate on insurance companies listed on the Tadawul Stock Exchange. Companies included in the sample must meet the following criteria:

Classification under the insurance sector on the Tadawul Stock Exchange.

A minimum of two years of available historical stock data for statistical validity.

Publicly accessible records of mergers and acquisitions.

Compliance with the financial reporting guidelines stipulated by the Saudi Capital Market Authority (CMA).

Our focus narrowed to 33 insurance firms listed on the Tadawul Stock Exchange that satisfy the selection criteria. Among these, five specific M&A events between 2017 and 2022 are the core of our study.

Table 1: The Sample Events of the Study.

Event	Acquiring Company	Target Company	Date of Merger
E-1	Walaa Cooperative Insurance	MetLife AIG ANB	3-Mar-20
E-2	Gulf Union	Al Ahlia Insurance	7-Dec-20
E-3	Aljazira Takaful Tawuni	Solidarity Saudi Takaful	2-Mar-21
E-4	Arabian Shield Cooperative Insurance	Al Ahlia Takaful Insurance	16-Jan-22
E-5	Walaa Cooperative Insurance	SABB Takaful	23-Oct-22

Methodology: Event Study Approach

Event study methodology is a widely accepted approach for analyzing the impact of specific events, such as mergers and acquisitions, on stock prices. The primary objective of an event study is to determine whether an event has resulted in statistically significant abnormal returns for the participating firms. This allows us to isolate the 'event effect' on the stock price, distinguishing it from market or industry trends, random fluctuations, and other external factors.

Estimation, Event, and Post-Event Windows

Choosing appropriate Estimation and Event Windows is critical for capturing the essence of the event's impact on stock prices. The Estimation Window serves as the benchmark period to model normal stock returns, while the Event Window focuses on capturing the abnormal returns associated with the event (Brown & Warner, 1985; MacKinlay, 1997).

We propose using an Estimation Window of 120 trading days corresponding to six months. This duration allows sufficient data to generate robust parameter estimates for the Market Model without being too long to include unrelated prior events that might influence stock performance. Past studies in financial research have commonly used Estimation Windows ranging from 120 to 250 trading days (MacKinlay, 1997; Brown & Warner, 1985). In the context of the Saudi Arabian insurance sector, a window of 120 trading days is adequate as the market is less volatile than major international markets (Alkhathlan, 2015).

For the Event Window, we recommend a period spanning from 10 days before the event to 10 days after the event, making it a 21-day window including the event day itself. A 21-day window is sufficient to capture any leaks of insider information before the event as well as market adjustments or corrections post-event (Bhagat & Romano, 2002; Kolari & Pynnonen, 2010).

A Post-Event Window is crucial for examining an event's lingering or delayed effects on stock prices. This extended analysis can capture longer-term market reactions, adjustments, or corrections that may not be evident in the immediate aftermath of an event. The Suggested Post-Event Windows are like this:

Short-term Post-Event Window: 30 days after the event; this will help capture immediate adjustments or corrections following the event. Some research suggests that the short-term impact can still be seen within a month after the event (Binder, 1998; McWilliams & Siegel, 1997).

Medium-term Post-Event Window: 90 days after the event, this window will encompass any quarterly financial disclosures or announcements that might occur post-event, which can further shape market opinion (Kothari & Warner, 2007).

Long-term Post-Event Window: 180 days after the event, longer-term windows help capture the integration and operational effects of the merger or acquisition on the stock performance (Malatesta & Thompson, 1985).

By implementing these Post-Event Windows, we aim to provide a multifaceted view that will shed light on both the immediate and lingering impacts of mergers and acquisitions in the Saudi Arabian insurance industry. This structured approach should offer comprehensive insights beneficial for investors, regulators, and policymakers.

Market Model Approach:

The Market Model is a statistical framework used to estimate the relationship between an individual stock's returns and the overall market's returns. Using historical data, the Market Model allows us to calculate a stock's "normal" or "expected" returns, which serves as the basis for calculating abnormal returns during the event window. The classic formulation of the Market Model is expressed as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it} \quad (1)$$

Where:

R_{it} = The return of stock i at time t

α_i = The stock-specific constant (intercept)

β_i = The sensitivity of stock i to market movements

R_{mt} = The market return at time t

ϵ_{it} = The error term for stock i at time t

The normal return $E(R_{it})$ for stock i at time t is calculated by plugging the estimated α_i and β_i into the Market Model:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} \quad (2)$$

The abnormal return (AR) is the actual observed return minus the expected (or "normal") return. Mathematically:

$$AR_{it} = R_{it} - E(R_{it}) \quad (3)$$

Therefore:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (4)$$

Cumulative Abnormal Returns (CAR) are simply the sum of the abnormal returns over the event window:

T2

$$CAR = \sum_{t=T1}^{T2} AR_{it} \quad (5)$$

T1

T1 and T2 represent the start and end days of the event window, respectively.

By incorporating the Market Model into our methodology, we can accurately compute both normal and abnormal returns, offering a robust and reliable way to measure the impact of M&As in the Saudi Arabian insurance sector.

Results and Analysis

In this section, careful examination and interpretation of the empirical data are undertaken to reveal insights into the fluctuations and dynamics of stock prices during various Mergers and Acquisitions (M&A) phases. The section is organized to allow for a logical and insightful exploration of the data, with the temporal divisions—pre-event, during the event, and post-event periods—facilitating a deeper understanding of the progression and modifications in stock prices in response to M&A activities.

The analysis primarily focuses on variability and volatility, examining the degrees of fluctuations and uncertainties in stock prices to understand the perceived risks and market sentiment associated with the companies under study. Additionally, the overall market reaction to the M&As is critically assessed to decode the prevailing investor sentiments and expectations, providing a comprehensive overview of market behaviours during different phases of the M&A process. A comparative perspective is also incorporated, offering differentiated insights into the various companies' stock valuations, thereby highlighting distinct behavioural patterns and trends.

Descriptive Statistics (Mean & Std-Dev)

Here, we present an initial examination of our data, offering a straightforward overview of our dataset's fundamental characteristics and patterns, as shown in Table 3. By showcasing measures such as means and standard deviations, we aim to provide a foundational understanding of stock price behaviours for the companies under study, especially during various Mergers and Acquisitions process phases. This concise yet informative section serves as a stepping stone, setting the stage for deeper and more intricate analyses. Readers can anticipate a clear snapshot of the basic tendencies and variabilities in stock prices, which will be crucial for comprehending the broader implications discussed in subsequent sections of this study.

Table 3: Descriptive Statistics (Mean & Std-Dev)

Period	Walla (Merger 1) Company Mean (Std-Dev)	Gulf Company Mean (Std-Dev)	Gezira Company Mean (Std-Dev)	Arabian Shield Company Mean (Std-Dev)	Walaa (Merger 2) Company Mean (Std-Dev)
Pre-event Period (120 days)	18.9258 (1.1948)	13.8024 (2.2414)	20.0241 (1.5897)	24.4132 (0.9785)	14.9767 (1.2908)
21 Days the Event Period	19.7919 (0.3465)	17.2100 (0.4809)	22.5605 (0.3485)	24.1895 (0.7533)	14.1248 (0.3951)
20 Days After the Event -Short run	20.6525 (0.9070)	17.1035 (0.3301)	23.8415 (1.0131)	23.2280 (0.5826)	13.5860 (0.3241)
60 Days After the Event -Medium run	19.1382 (2.3188)	17.1012 (0.5641)	25.0702 (1.0480)	20.2553 (1.5067)	14.1597 (0.5409)
90 Days After the Event -Long run	14.5336 (0.9336)	17.4149 (1.0118)	24.8823 (1.6185)	17.4718 (0.6973)	15.4367 (1.7636)

Variability and Volatility

Regarding the pre-event Period, the differences in the standard deviations among the companies in the pre-event Period, as shown in Table 3, reflect varied levels of variability. The Gulf Company, exhibiting the highest standard deviation, faces more variability in stock prices, pointing towards the heightened uncertainty or risk surrounding this company. Conversely, Arabian Shield Company, with the lowest standard deviation, appears more stable, possibly due to robust financial health, consistent performance, or favourable market perceptions.

High volatility, as in the case of Gulf Company, generally denotes higher risk and can impact investor confidence and valuation. It is essential to examine the underlying reasons for such volatility, like fluctuating earnings, changing market dynamics, or evolving investor sentiments.

While during the Event Period, The notable reduction in standard deviations during the event period across all companies implies a convergence in investor opinions or a consensus about company valuations post-announcement. This suggests that market participants are in agreement regarding the implications of the M & A on the companies involved. The lower volatility can signify diminished uncertainty about the prospects of these companies, thanks to the clarified strategic directions and expected synergies disclosed during M&A announcements.

Market Reaction

During the event Period, the surge in mean stock prices for all companies in the event period, particularly for the Gulf Company, manifests a predominantly positive market reaction. This uplift can be attributed to the optimistic projections about the strategic benefits, enhanced market positioning, and potential synergies arising from the M&A.

The uniformity in market response during the event period, coupled with reduced variability, denotes a market sentiment generally sanguine about the perceived value and prospects of the involved companies.

The post-event Period reveals that the variations in stock prices and their deviations in the short, medium, and long run reflect market adjustments and realignments to the emerging realities, operational integrations, and unfolding synergies of the companies post-M&A.

The fluctuations in mean stock prices and standard deviations in the post-event Period delineate the evolving market sentiments, possibly fuelled by the unveiling performance, integration challenges, or unmet expectations related to the M&A.

Daily Abnormal Returns During the Event Window

Table 4 displays the daily abnormal returns (AR) for five Saudi insurance companies undergoing mergers and the corresponding t-statistics. These ARs were calculated using the Event Study Methodology, which analyzes stock price reactions to specific events, such as mergers.

Wala Company (Merger 1, 2020) on day 10+ (10 days after the event), there is a highly significant positive AR of 4.84% (t-stat of 2.6120). Overall, there are not many significant ARs for Wala Company. The most noteworthy return occurs ten days post-event. Gulf Company experienced the highest positive AR on day 2, with a return of 6.12% (significant at the 1% level). There are several days with negative ARs that are significant, notably on day -1, day 0, and day 10+. These returns indicate negative market reactions to the merger event.

Gezira Company on day -6, there is a significant positive AR of 3.94%. However, Gezira Company also experienced several days of negative ARs that are significant, particularly on days -4, -5, 5+, and 6+. Arabian Shield Company has a consistent pattern of negative significant ARs, particularly on days -9, -4, -3, -1, and 0. This suggests that the market reacted negatively to the merger event around the date. Also, Wala Company (Merger 2, 2022) does not show significant ARs as pronounced as some other companies. There are minor significant returns, but none at the $p < 0.05$ or $p < 0.01$.

Generally, the event day (day 0) did not show high significance in ARs for most companies, which is surprising. Generally, the event day or the days immediately surrounding it tend to show more pronounced reactions in event studies. The days leading up to and after the event show they varied company reactions. For instance, while Gezira Company showed significant positive AR on day -6, Arabian Shield Company displayed negative ARs on several days before and after the event. Gulf Company's notable positive AR on day 2 suggests that there might have been anticipatory positive news or leaks regarding the merger two days before the official announcement.

Table 4: Daily Abnormal Returns During the Event Window.

Event Day	Wala Company (Merger 1)	Gulf Company	Gezira Company	Arabian Shield Company	Wala Company (Merger 2, 2022)
	AR (t-stat)	AR (t-stat)	AR (t-stat)	AR (t-stat)	AR (t-stat)
-10	0.0101 (0.5427)	-0.0086 (-0.3067)	0.0160 (0.7112)	-0.0014 (-0.0874)	-0.0097 (-0.4126)
-9	0.0043 (0.2338)	-0.0051 (-0.1826)	0.0001 (0.0053)	-0.0305 (-1.8990) *	0.0023 (0.0976)
-8	0.0209 (1.1257)	-0.0265 (-0.9428)	0.0134 (0.5964)	-0.0097 (-0.6048)	-0.0045 (-0.1922)
-7	0.0158 (0.8513)	0.0445 (1.5823)	-0.0012 (-0.0545)	-0.0042 (-0.2630)	0.0073 (0.3136)
-6	0.0116 (0.6283)	-0.0216 (-0.7700)	0.0394 (1.7464) *	0.0182 (1.1330)	0.0055 (0.2341)
-5	0.0190 (1.0235)	-0.0019 (-0.0693)	-0.0183 (-0.8116)	0.0027 (0.1707)	-0.0004 (-0.0155)
-4	0.0038 (0.2057)	-0.0043 (-0.1516)	-0.0337 (-1.4937)	-0.0271 (-1.6857)	-0.0048 (-0.2058)

Event Day	Walaa Company (Merger 1)	Gulf Company	Gezira Company	Arabian Shield Company	Walla Company (Merger 2, 2022)
	AR (t-stat)	AR (t-stat)	AR (t-stat)	AR (t-stat)	AR (t-stat)
-3	-0.0075 (-0.4029)	0.0056 (0.1979)	0.0041 (0.1831)	-0.0202 (-1.2535)	-0.0278 (-1.1883)
-2	-0.0056 (-0.3025)	0.0612 (2.1752) **	-0.0079 (-0.3516)	-0.0080 (-0.4979)	-0.0060 (-0.2576)
-1	0.0025 (0.1339)	-0.0335 (-1.1932)	0.0217 (0.9643)	-0.0319 (-1.9840) *	-0.0105 (-0.4485)
0	0.0139 (0.7485)	-0.0336 (-1.1938)	-0.0277 (-1.2298)	-0.0212 (-1.3168)	-0.0096 (-0.4116)
1+	-0.0158 (-0.8543)	-0.0183 (-0.6499)	-0.0087 (-0.3875)	-0.0122 (-0.7571)	0.0042 (0.1815)
2+	-0.0070 (-0.3782)	0.0045 (0.1601)	0.0086 (0.3820)	-0.0155 (-0.9605)	-0.0064 (-0.2740)
3+	0.0065 (0.3509)	0.0149 (0.5291)	-0.0199 (-0.8810)	0.0062 (0.3865)	-0.0034 (-0.1461)
4+	0.0111 (0.5971)	-0.0051 (-0.1811)	0.0091 (0.4060)	-0.0082 (-0.5080)	-0.0203 (-0.8666)
5+	0.0043 (0.2297)	-0.0124 (-0.4397)	-0.0220 (-0.9744)	0.0020 (0.1226)	0.0063 (0.2694)
6+	0.0020 (0.1107)	-0.0156 (-0.5534)	-0.0273 (-1.2108)	-0.0063 (-0.3940)	-0.0022 (-0.0959)
7+	0.0066 (0.3551)	-0.0086 (-0.3042)	0.0118 (0.5248)	-0.0058 (-0.3606)	0.0175 (0.7460)
8+	-0.0154 (-0.8304)	0.0079 (0.2800)	0.0047 (0.2100)	0.0005 (0.0324)	-0.0175 (-0.7474)
9+	-0.0021 (-0.1129)	-0.0434 (-1.5455)	0.0063 (0.2797)	0.0026 (0.1608)	0.0073 (0.3109)
10+	0.0484 (2.6120)**	-0.0344 (-1.2253)	0.0021 (0.0939)	0.0027 (0.1698)	0.0054 (0.2291)
*denotes $ t\text{-stat} > 1.64$ ($p < 0.1$)					
**denotes $ t\text{-stat} > 1.96$ ($p < 0.05$)					
***denotes $ t\text{-stat} > 2.58$ ($p < 0.01$)					

Cumulative Abnormal Returns (CAR) during the Event Window and Post Event Windows

Analyzing the cumulative abnormal returns (CAR) over different periods provides comprehensive (as shown in Table 5) insights into the market reactions to the merger events in Saudi Insurance companies. During the event period of 21 days, Walaa Company (Merger 1, 2020) experienced a mildly favourable market reaction with a positive but not statistically significant CAR of 0.0524 (t-stat: 0.8347). In contrast, Gulf Company observed a similar positive sentiment with a CAR of 0.1020, which also lacked statistical significance. Gezira Company displayed a negative CAR of -0.0862, although this was not statistically significant, suggesting a slightly unfavourable market response. Arabian Shield demonstrated a more pronounced negative market response with a CAR of -0.0716, significant at -1.2614. Walaa Company (Merger 2, 2022) displayed a minimal positive CAR of 0.0046, indicating a largely neutral market reaction.

In the short run, 30 days after the event, Walaa Company (Merger 1, 2020) maintained its positive CAR at 0.1024, but it remained not statistically significant. Gulf Company extended

its positive CAR to 0.17125028; however, the table does not provide its t-statistic. Gezira Company lessened its negative CAR to -0.0757 without reaching statistical significance, while Arabian Shield furthered its negative CAR to -0.1544, significant at the 5% level. Walaa Company (Merger 2, 2022) elevated its positive CAR to 0.0416 without statistical significance.

Regarding the medium run (90 days after the event), the trend shifted for several companies. Walaa Company (Merger 1, 2020) experienced a downturn with a negative CAR of -0.0618, which was not statistically significant. Remarkably, Gulf Company showed a significant negative CAR of -0.3149 at the 5% level, indicating a substantial downturn in sentiment. Conversely, Gezira Company portrayed a positive, but not statistically significant, CAR of 0.1239, signalling a rebound in sentiment. Arabian Shield continued to sustain a significant negative CAR of -0.3911 at the 5% level. Although not statistically significant, Walaa Company (Merger 2, 2022) saw an uplift in sentiment with a positive CAR of 0.0874.

Evaluating the long-run impact 180 days after the event revealed divergent market sentiments. Walaa Company (Merger 1, 2020) exhibited a slight, not statistically significant, positive CAR of 0.0417. Gulf Company stood out with a robust and significant positive CAR of 0.6652 at the 1% level. Gezira Company also displayed a substantial and significant positive CAR of 0.4659 at the 1% level. However, Arabian Shield maintained its negative sentiment with a CAR of -0.2918, which was not statistically significant. Finally, Walaa Company (Merger 2, 2022) revealed a positive CAR of 0.2742, with a t-statistic of 1.2619, indicating a moderately favourable long-term market reaction.

The analysis signifies that immediate market reactions do not necessarily predicate long-term sentiments. Notably, Gulf and Gezira Companies, despite experiencing volatile medium-term reactions, revealed positive long-term market sentiments, potentially indicating value creation from the mergers. On the contrary, Arabian Shield's merger consistently indicated unfavourable market responses. Lastly, Walaa Company's second merger maintained a neutral to moderately positive impact throughout the Period. For informed decision-making, it is crucial to understand these underlying trends, consider other relevant financial and strategic factors, and view statistical significance as one element in a broader set of indicators.

Table 5: Cumulative Abnormal Returns (CAR) during the Event Window and Post Event Windows.

Period	Walaa Company CAR (Merger 1) (t-stat)	Gulf Company CAR (t-stat)	Gezira Company CAR (t-stat)	Arabian Shield CAR (t-stat)	Arabian Shield CAR (t-stat)	Walaa Company (Merger 2) CAR (t-stat)
21 Days the Event Period	0.0524 (0.8347)	0.1020 (0.9330)	-0.0862 (- 1.0196)	-0.0716 (- 1.2614)	-0.0716 (- 1.2614)	0.0046 (0.0819)
30 Days After the Event - Short run	0.1024 (0.7666)	0.17125028	-0.0757 (- 1.0874)	-0.1544** (- 1.9687)	-0.1544** (- 1.9687)	0.0416 (0.4958)
90 Days After the Event - Medium run	-0.0618 (-0.3126)	-0.3149** (- 1.9218)	0.1239 (0.8904)	-0.3911** (- 1.9861)	-0.3911** (- 1.9861)	0.0874 (0.5424)
180 Days After the Event - Long run	0.0417 (0.1772)	0.6652*** (2.4446)	0.4659*** (3.7437)	-0.2918 (- 1.1599)	-0.2918 (- 1.1599)	0.2742 (1.2619)
*denotes t-stat > 1.64 (p < 0.1)						
**denotes t-stat > 1.96 (p < 0.05)						
***denotes t-stat > 2.58 (p < 0.01)						

Testing Hypotheses Based on Study Results

H1: *M&As in the Saudi Arabian insurance industry immediately led to a significant positive change in the companies' stock prices.*

The results obtained in this study offer a diverse perspective on this hypothesis. While some companies experienced a surge in stock prices around the event days, as in the case of Gulf Company on Event Day -2 with a positive abnormal return, others did not mirror this immediate positive change. For instance, Arabian Shield Company displayed a negative abnormal return on Event Day -9. The variations in immediate stock price reactions to the M&As across different companies suggest that the hypothesis cannot be universally validated. Therefore, M & As do not consistently lead to an immediate significant positive change in the stock prices of the involved Saudi Arabian insurance companies.

H2: *M&As in the Saudi Arabian insurance industry lead to a significant positive change in the companies' stock prices in the medium and long term.*

Examining the Cumulative Abnormal Returns (CAR) in the medium and long term provides mixed support for this hypothesis. Gezira Company and Gulf Company manifested significant positive CAR in the long term, seemingly validating the hypothesis for these instances. However, other companies like Arabian Shield Company exhibited a decline in the medium-run CAR, contrasting the expected significant positive change hypothesized. This disparity in results indicates that while M&As have the potential to lead to positive changes in stock prices in the medium and long term, this outcome is not a given and may vary significantly depending on the characteristics and context of each merger.

Both hypotheses received partial support, indicating that while M&As can lead to significant positive changes in stock prices, both immediately and in the medium to long term, these outcomes are not universal across all instances in the Saudi Arabian insurance industry. The diverse range of outcomes noted in this study underscores the influence of the specificities of each merger and possibly other external and internal factors, suggesting a need for more granular analyses to understand the driving forces behind the varied stock price reactions to M&As in this sector.

Comparative Analysis

When comparing the findings of our study with other significant research works in the field, there is a precise interplay of divergences and convergences, showcasing the unique characteristics of each market and sector studied. Ahmed et al. (2020) explored the performance of bidding companies in Hong Kong and Mainland China, noting adverse short-term returns for these firms. This sharply contrasts with our findings, which indicated a diverse range of stock price responses, signifying the distinct ramifications of mergers and acquisitions across various geographies.

Kunyoria (2018) focused on the Kenyan insurance market and found significant positive shifts in share returns post-merger announcements. While this finding shares semblance with some positive CARs in our study, the varied outcomes in our analysis further underline the complexities and specificities intrinsic to different regions and sectors.

Chen et al. (2020), turning their attention to bondholders, reported a notable negative impact post-mergers and acquisitions. Even though their focal point differed from ours, which was on

stockholders, their findings reiterate the intricate and multi-dimensional financial outcomes of mergers and acquisitions.

In the Indian context, Mehrotra and Sahay (2018), Dash (2018), and Bhargava and Tandon (2023) consistently showcased wealth enhancement in the immediate aftermath of merger announcements. This resonates with specific segments of our study where we observed positive CARs. Nevertheless, the mixed results from our investigation, with both gains and losses in CAR, exemplify the variegated impacts of mergers and acquisitions in the Saudi Arabian domain.

Significantly, Assiri (2021) also explored the merger and acquisition activities within the Saudi Insurance Industry. His research hinted at the pivotal roles of process, resources, and executives in shaping merger outcomes. While our study focused on stock price reactions quantitatively, Assiri's nuanced qualitative insights offer complementary perspectives. These findings underscore the multifaceted nature of merger impacts in the Saudi insurance sector.

Drawing from these comparative analyses, it becomes evident that while overarching trends exist, each region and industry exhibits unique dynamics. As such, it is crucial to approach the subject of mergers and acquisitions with a comprehensive, contextual lens, acknowledging the myriad of factors at play.

Conclusion and Recommendations

This study systematically explored the influence of mergers and acquisitions (M&A) on the stock prices of Saudi Arabian insurance companies, utilizing a comprehensive analysis of Cumulative Abnormal Returns (CARs). The results exhibit mixed effects on stock prices across different companies during various periods. Some companies like Gulf Company and Gezira Company experienced significant positive CARs in the long run, indicating shareholders perceived these M&As positively. However, the results also showcased instances of negative CARs, such as in the cases of Arabian Shield, highlighting that not all M&As lead to value creation or positive stockholder responses.

This heterogeneous impact underscores the complex nature of M&As and the multitude of factors that can influence their outcomes, including the specifics of the deal and the conditions of the companies involved. The study's findings corroborate the notion that M&A activities do not universally translate to immediate positive stock reactions and can vary significantly, highlighting the nuanced dynamics in the context of the Saudi Arabian insurance sector.

Given the multifaceted impacts observed, it is crucial for stakeholders, particularly investors and company executives, to exhibit caution and conduct rigorous due diligence before finalizing M&As. Saudi Arabian insurance companies contemplating mergers or acquisitions should meticulously assess the financial compatibility and the strategic alignment, operational synergy, and cultural fit between the entities involved. This holistic approach can better inform decision-makers and mitigate the risks associated with adverse stock price reactions post-M & A.

Further, regulatory bodies in Saudi Arabia could consider developing more robust frameworks and guidelines to facilitate smoother M&A processes and to ensure that such activities align with the overarching economic objectives and market stability. Enhancing transparency and disclosure requirements surrounding M&A deals can also aid in fostering a more informed and resilient market environment.

Finally, ongoing research is pivotal to understanding M&A impacts in the Saudi Arabian context. Future studies could delve into the qualitative aspects of M&As, exploring the underlying reasons for the varied stock price reactions. They could also examine the post-merger integration processes and their relation to long-term value creation or erosion in the Saudi Arabian insurance industry.

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Conflicts of Interest

The author declares no conflict of interest.

Data Availability Statement

The data that support the findings of this study are openly available in:

- (a) Tadawul site at [<https://www.tadawul.com.sa/wps/portal/tadawul/home?locale=en>].
- (b) Investing.com site at [<https://www.investing.com/>].
- (c) Disclosures submitted to the Saudi Capital Market Authority (CMA, 2022).

JEL Classification: D00, G34, G11, G22, G20

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