Stock Market Reaction to Mergers and Acquisitions: A Review of the Event Study Literature

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ABSTRACT

Mergers and acquisitions (M&A) are an important corporate restructuring strategy used for firm growth. This is evident with the number of M&A deals undertaken globally. One important aspect which the researchers investigate is how the stock market reacts to the M&A decisions and what impact does it bring to the shareholders. A widely used methodology to examine this impact is event study which measures the impact of M&A announcement on the stock prices. Event study is a short-term performance evaluation method applied to understand the abnormal returns in the event window post-M&A. This aim of this study is to understand the market reaction to the M&A decisions in prior research. A review of existing literature on M&A and event studies has been conducted in this study. This research synthesises the key findings from the empirical studies focused on event study and provides a comprehensive perspective of the different market reactions on M&A decisions. The stock market's response to M&A announcements varies greatly, and the initial gains are frequently short term based on empirical examination. The outcomes are significantly influenced by the payment method and geographic context, highlighting the necessity of thorough assessment of these factors by the stakeholders involved, particularly in emerging markets. This study may provide crucial policy implications to the top management for making strategic choices and choosing the ideal target for the M&A deals.

Keywords: *Merger, Acquisition, Event Study, Abnormal Return (AR), Cumulative Abnormal Return (CAR).*

Introduction

The contemporary business environment is marked by rapid changes, fierce competition, pursuit for growth and efficiency. Mergers and acquisitions (M&As) have become essential corporate restructuring strategy, enabling organizations to increase market share, diversify product lines, and realize synergistic benefits. The extensive scale and worldwide impact of M&A transactions highlight their importance as a catalyst in shaping the modern business landscape. With globalization and technological progress, the strategic significance of M&A is increasingly pronounced, necessitating a comprehensive understanding of the diverse effects of these transactions.

Event studies are a statistical methodology employed to evaluate the influence of particular events on a firm's value, primarily through the examination of stock prices. This methodology is based on the premise of market efficiency, which asserts that stock prices completely incorporate all accessible information, thereby acting as an effective indicator of a company's true value (Collevecchio et al., 2024). The principal aim of an event study is to ascertain the "residuals" or abnormal returns, defined as the

discrepancies between actual and anticipated returns during the interval when new information, such as M&A is publicly released (Leepsa & Mishra, 2016). The methodology entails establishing an event window, the timeframe for analyzing the event's effects, and an estimation period, utilized to compute expected returns based on historical data. Abnormal returns are determined by contrasting actual returns with anticipated returns, frequently employing models such as the market model or the Capital Asset Pricing Model (CAPM) (Tampakoudis et al., 2021). Event studies are adaptable and can be utilized for diverse corporate events, such as M&A announcements, earnings reports, and the regulatory changes, to assess their influence on the stock prices (Yadav & Jang, 2021). Empirical findings from the prior event studies explains the shareholder value enhancement or diminishment, as evidenced by research indicating that acquiring firms frequently realize positive abnormal returns following M&A, though with inconsistencies across different contexts (Reddy et al., 2019). Moreover, event studies can uncover the market inefficiencies, including the information leakage, which might lead to stock price fluctuations prior to the official announcements of the M&A(Kumar Pandey & Kumari, 2020).

Event studies are an effective instrument in financial research, providing a systematic method for analyzing the economic effects of major corporate events on market performance. The evaluation of M&A success primarily hinges on the assessment of their impact on shareholder wealth. Investors, analysts, and corporate executives are highly interested in comprehending the reactions of financial markets to M&A decisions and whether these transactions ultimately generate value for shareholders. This investigation carries significant implications for strategic decision-making, investment strategies, and corporate governance. Accurate evaluation of the stock market's reaction to M&A announcements is essential for ensuring these transactions align with the core objective of the wealth maximisation of the shareholders.

Researchers have extensively utilized the event study methodology to address the impact of M&A announcements on the stock market. This empirical method provides a framework for assessing the influence of particular events, such as M&A announcements, on stock prices. By analysing abnormal returns, the difference between actual and anticipated returns within a specified event window, researchers can discern the market's response to the announcement and measure its impact on shareholder wealth. The event study methodology is an effective instrument for comprehending the financial consequences of M&A decisions.

This paper seeks to enhance the existing knowledge base by synthesizing essential findings from numerous empirical studies that utilized the event study methodology to examine market responses to M&A announcements. This paper aims to deliver a detailed analysis of the varied market responses identified in prior studies, thereby enhancing the comprehension of the determinants affecting shareholder returns in the realm of M&A. This synthesis includes a critical analysis of several factors, such as the effects of payment methods (cash versus stock), the significance of geographical contexts (developed versus emerging markets), the impact of industry characteristics, and the consequences of diverse methodological selections.
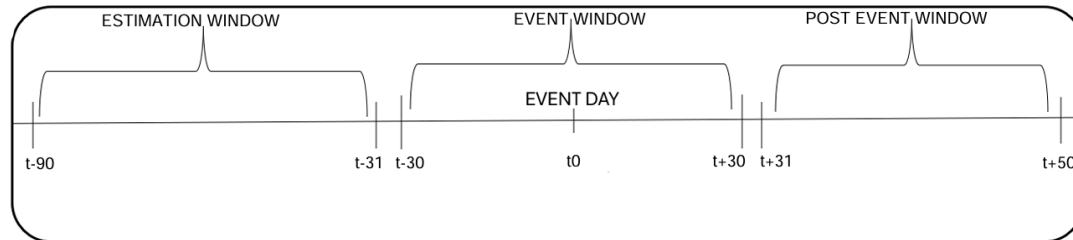
This paper acknowledges the practical significance of comprehending market responses to M&A announcements. This research aims to explain the factors influencing shareholder returns, thereby offering valuable insights for top management in strategic decision-making and the selection of optimal merger targets. The findings presented will provide a thorough perspective, allowing corporate leaders to make informed decisions that increase shareholder value and foster the long-term success of their organizations.

Literature Review

- **Event Study Methodology**

Brown & Warner, (1980) gave the standard methodology for event study. For conducting an event study, the event, event window, estimation window and the estimation model has to be determined (Kumar Pandey & Kumari, 2020). Here, the event is the announcement of the merger and acquisitions. The event date is the date of announcement of the merger and acquisition. It is the day when the stock exchange has been informed about the board's sanction of the M&A transaction by the acquiring company (Gulati & Garg, 2022). The event window consists of the days preceding to and succeeding to the event date which is the date of announcement, in order to analyse the stock price's reaction. The estimation window is the period preceding the event window (Gulati & Garg, 2022). Figure 1 shows the event study estimation model, for the estimation window of 60 days from -90 to -31. The post even

window is of 20 days from +31 to +50. The event window is of 61 days from -30 to +30(Kumar Pandey & Kumari, 2020).

Figure 1. Event Study Model

Source: (Kumar Pandey & Kumari, 2020)

Calculation of the abnormal return, average abnormal return and cumulative average abnormal return

Abnormal return is calculated for each day in the event window. It is the excess of the expected return over actual return of the stock. The average abnormal returns of the sample are measured by dividing the aggregate abnormal return (day wise) with the abnormal returns of the sample (Kumar Pandey & Kumari, 2020). Cumulative average abnormal returns is the aggregate of average abnormal returns over a specified period of time, and gives a better view on the shareholders insights (Prasad & Bakhshi, 2024).

Reglero et al. (2024) contests the prevailing belief that cash acquisitions surpass stock acquisitions by examining "transformative" M&A transactions in Spain. Their investigation found that stock-financed transactions significantly surpassed cash transactions through event studies. This contradicts previous studies and indicates that market participants are becoming more sophisticated, taking into account factors such as tax implications, long-term integration expenses, and the strategic reasoning behind management's selection of payment method. The research underscores the significance of country-specific variables and the necessity for a more nuanced examination of M&A performance, ultimately offering valuable insights for corporate executives and investors. Sayed (2024)analysed the effect of M&A on the stock prices of Saudi Arabian insurance companies through the perspective of Cumulative Abnormal Returns (CARs). The results were varied, with certain companies demonstrating favourable long-term stock responses, whereas others faced adverse impacts, underscoring the complexities of the M&A outcomes. The research underscores the necessity for due diligence by the stakeholders, such as investors and corporate executives, prior to the finalization of M&A.

- **Positive Stock Market Reaction**

The stock market has demonstrated positive returns post-merger announcements as measured by the event study methodology across diverse sectors and regions. Marisetty & Koluru (2024) demonstrated that prices of the stock shows a peak on the announcement day and subsequently diminishes when the stock market assimilates the information, this is consistent with the semi strong from of the efficient market hypothesis. Kumar Pandey & Kumari (2020) examined the stock price response to M&A announcements for 14 acquiring banks in India and the United States utilizing the event study methodology. Their study revealed that M&A announcement news substantially influence stock prices, producing abnormal returns near the announcement date, even though with a distinctly adverse effect. Here, Indian banks exhibited a more pronounced response, with substantial cumulative abnormal returns (CAARs) during the event and post-event periods, in contrast to the temporary reaction of US banks. This indicates that the Indian market, as an emerging market, exhibits heightened sensitivity to such information, thereby reinforcing the concept of semi-strong efficiency in the Indian stock market.

I. Gupta & Raman (2022) employed event study methodology to examine the effect of M&A announcements on the shareholder value of acquiring firms in India from 2011 to 2020. The results demonstrate statistically significant positive abnormal returns (AR) on the announcement day and positive cumulative abnormal returns (CARs) across multi-day event windows, indicating that investors initially view M&As as value-enhancing due to anticipated synergies. Following, the event window,

negative abnormal returns were noted, likely indicating investor overreaction and subsequent corrective measures, in alignment with behavioural finance theories. Although, initial market responses were favourable, reflecting confidence in M&A synergies, subsequent adjustments indicate a tendency towards initial over-optimism.

Two approaches for evaluating the competitive impacts of significant mergers: stock market responses (ex-ante) and accounting data assessment (ex-post) have been examined (Duso et al., 2010). The study included mergers scrutinized by the EU Commission from 1990 to 2001, concluding that stock market reactions can forecast post-merger profitability for both the merging entities and, to a degree, their rivals. Significantly, employing extended pre-announcement intervals enhances this correlation. Liargovas & Repousis (2011) examined the effects of M&Aon the Greek banking sector from 1996 to 2008, employing event study and operational performance methodologies. Event studies demonstrated substantial positive cumulative average abnormal returns (CAARs) prior to announcements, indicating information leakage and refuting the semi-strong form of the efficient market hypothesis (EMH). Cash transactions provided greater advantages to bidder shareholders compared to stock transactions, while horizontal and diversifying transactions favoured target shareholders. M&A did not generated wealth and the operating performance did not enhance following the M&A.

The effects of bank mergers in Nepal on shareholder returns through market and mean adjusted models revealed no significant abnormal returns either before or after the merger (Chhetri & Baral, 2018). This indicates that mergers, primarily coerced and policy-oriented, have not affected the investor perceptions or generated shareholder wealth. The research corroborates the semi-strong variant of the Efficient Market Hypothesis (EMH) in Nepal, signifying market efficiency.

- **Negative Stock Market Reaction**

Ghosh (2023) determined in their research whether the merger announcement generated any abnormal returns for shareholders on the event day and during the designated pre- and post-event periods. The ordinary least squares market model of event study has been utilized to compute the returns. The study determined that the merger announcement generated abnormal returns for shareholders on the event day; however, it did not produce any abnormal returns during the designated pre- and post-event periods. Reddy et al. (2019) examined the effect of M&A announcements on the stock returns of acquirers in China and India from 2004 to 2007, employing three models. In China, although the mean adjusted model demonstrated value creation, the ordinary least squares model revealed no significant effect, indicating that M&As prioritized growth rather than shareholder value. In their research they highlighted that in India, all of the three models demonstrated no enhancement in the returns, the reason for which is the family-owned enterprises prioritizing their personal interests. The study concluded that M&As generated no value in either market, with debt exerting a positive influence on returns and sales growth exhibiting minimal beneficial effects. Furthermore, the results of this study align with the agency theory.

Prasad & Bakhshi (2024)examined the effect of takeover announcements on stock returns for both target and acquiring companies, employing event study methodology alongside market and four-factor models. Both groups experienced positive returns on the announcement day, with target firms realizing more substantial gains. Prior to the announcement, target firms exhibited favourable returns, indicating possible information leakage. Subsequent to the announcement, target firms encountered adverse returns. The analysis of cumulative abnormal returns validated these trends. The selection of model affected outcomes, demonstrating the influence of systematic risk. Extended bidding and extraneous industry acquisitions advantaged shareholders of the target firm. The study elucidates the intricacies of M&A wealth effects, providing valuable insights for investors and policymakers. Smimou (2015)investigated the wealth effects of cross-border M&A announcements on target and acquirer firms in emerging markets, demonstrating substantial positive returns for targets at the announcement date, succeeded by positive returns for acquirers. However, target returns diminish over the time, differing by the region (BRICS, Eastern Europe, Africa), presenting market timing opportunities for investors. The study emphasizes the significance of regional market conditions, transaction orientation, and timing in the success of M&A, offering insights for institutional investors and hedge fund strategies. It recommends that managers take into account regional market conditions, especially bearish trends, when scheduling M&A announcements.

The valuation of synergies in M&A within the Indian steel sector by S. R. Gupta & Bhattacharya (2021)was done to identify whether the companies accurately enumerate synergies and these synergies

result in increased shareholder wealth. A neural network model predicting target prices based on changes in financial ratios indicated that acquirers frequently overpay, implying overestimated synergy gains. Cumulative Abnormal Return (CAR) analysis revealed no substantial wealth generation for shareholders of the acquiring company, suggesting that M&A generally do not confer advantages in the short to medium term. The study concludes that although synergy is a principal driver of M&A, its precise measurement and actual attainment pose challenges, especially in generating shareholder value. Rani & Sangeeta (2023)evaluated the effects of M&A on shareholder wealth in India's banking sector from 2013 to 2020, revealing that these transactions generally had an adverse effect on stock returns, as indicated by negative Abnormal Returns (ARs) and Cumulative Abnormal Returns (CARs). Although several banks experienced favourable abnormal returns on the announcement day, the overall results demonstrated an absence of substantial wealth generation for shareholders. It advises banks to investigate alternative growth strategies and urges the government to establish supportive regulations to enhance the performance of merged banks. Aggarwal & Garg (2022)examined the immediate effects of M&A announcements on shareholders of Indian acquiring companies, demonstrating substantial positive abnormal returns (AR) on the announcement day and cumulative abnormal returns (CARs) within short event windows. Cross-border acquisitions, non-public targets, cash transactions, and total control produced greater returns. The most profitable investment period was identified as five days prior to the announcement date.

Dilshad (2013)also analysed the immediate effects of bank merger announcements on stock prices, contrasting 18 acquiring banks and 18 target banks with the FTSE100 index. It was determined that stock prices respond on or near the announcement day; however, the merger's direct impact is not consistently evident. Acquirer banks observed transient positive returns, reflecting initial investor confidence in their capacity to enhance target bank efficiency, whereas target banks experienced substantial abnormal returns on the announcement day but failed to achieve sustained improvement. The study determined that mergers generate positive value for acquirers solely within a two-week period, indicating the necessity for extended analysis to evaluate the lasting advantages of these transactions.

The effects of M&A announcements on stock prices in the Asia-Pacific region from May to September 2013 were analysed taking into account 37 transactions through event study methodology with multiple event windows(Shah & Arora, 2014). It was found that the target firms exhibited statistically significant and progressively positive cumulative abnormal returns (CAARs) over extended event windows, reflecting investor responses. Furthermore, bidding firms revealed no statistically significant cumulative abnormal returns (CAARs), indicating the absence of abnormal returns following M&A announcements. Paired sample analysis indicated that the post-announcement returns of target firms were high, implying investor responsiveness to announcements. The pre-announcement returns of bidding firms were marginally higher, suggesting weak evidence of insider trading, yet it failed to conclusively establish strong-form efficiency. This research determined that M&A announcements predominantly advantaged shareholders of target firms in the short term.

Conclusion

This paper synthesized findings from prior empirical research employing event study methodology for investigating stock market responses to M&A announcements, uncovering a complex and diverse landscape of shareholder wealth effects. The literature reveals a range of outcomes, from substantial positive returns to negative returns, and even cases of negligible impact. This diversity highlights the complex nature of M&A transactions and the various factors affecting market perceptions.

A prominent theme arising from the review is the temporal aspect of market responses. Although numerous studies indicate positive abnormal returns (AR) and cumulative abnormal returns (CARs) on the announcement day and within brief event windows. Subsequent corrections following announcements are prevalent, indicating that initial market enthusiasm may be succeeded by a more pragmatic evaluation of the deal's long-term potential. This underscores the significance of differentiating between transient market responses and enduring value generation.

The selection of payment method of cash or stockis also an important consideration. Contrary to the prevailing assumptions, certain research, especially those examining transformative transactions, revealed that stock-financed agreements surpassed cash transactions in performance. This indicates that market participants are becoming more sophisticated, taking into account factors such as tax implications, integration expenses, and strategic alignment. This nuanced comprehension contests simplistic beliefs regarding the pre-eminence of cash transactions.

The geographical context also affects M&A outcomes. Emerging markets, such as India and Nepal, frequently display unique patterns in contrast to developed markets like USA. Research in these areas underscores the influence of elements such as family-owned enterprises, policy-induced consolidations, and information asymmetry. The existence of information leakage and the semi-strong form of the Efficient Market Hypothesis (EMH) in certain emerging markets highlight the necessity of accounting for country-specific variables. The methodologies utilized in event studies, including the selection of market models and the duration of event windows, significantly influence the outcomes. Furthermore, analysing operational performance with event studies offers a more thorough comprehension of the effects of M&A.

The results of this review hold considerable significance for corporate executives, investors, and policymakers. Managers must accurately evaluate the strategic justification for M&A. Investors ought to exercise prudence, acknowledging the transient nature of market responses and the necessity of thorough investigation. Policymakers must prioritize the establishment of a transparent and efficient market environment, tackling concerns such as information leakage and ensuring that M&A foster overall economic growth. In conclusion, the stock market's response to M&A decisions is a multifaceted phenomenon shaped by numerous factors. Event studies offer significant insights for stock market reactions; however, their findings must be interpreted judiciously. Future research must concentrate on investigating the long-term effects of M&A and taking into account the distinct attributes of various market contexts.

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