Impact of Mergers and Acquisitions on Long-Term Value Creation

A Comparative Study of the Fifth, Sixth, and Seventh Merger Waves

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Master Thesis
Strategic Management
Tilburg School of Economics and Management
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13 June 2025
Word count: 12,742

Abstract

This study aims to explore how mergers and acquisitions (M&As) influence long-term firm value creation across the fifth, sixth, and seventh merger waves. Based on a panel dataset combining Orbis and Compustat financials, post-merger performance was measured using return on assets (ROA) and return on equity (ROE), with firm-level and contextual controls applied throughout. The findings provide no statistically significant evidence that firms engaging in mergers during the seventh wave outperformed those from the fifth or sixth wave in terms of long-lasting ROA or ROE. These findings reinforce the need for robust integration management, comprehensive due diligence, and an understanding of industry-specific dynamics before pursuing mergers.

Management Summary

Mergers and acquisitions (M&As) have historically occurred in cyclical waves, yet existing research offers mixed evidence on whether firms participating in later waves achieve superior long-term performance. While the seventh merger wave (2010-2022) was theoretically expected to yield strategic gains due to its emphasis on digital transformation, sustainability concerns, and capability-driven acquisitions, this study's empirical findings indicate that these anticipated benefits did not translate into statistically significant superior long-term operating performance.

Based on a comprehensive panel dataset of 1,251 completed deals from 1993 through 2022, constructed by merging Orbis M&A deal records with Compustat Global financials, our analysis rigorously measured post-merger performance using Return on Assets (ROA) and Return on Equity (ROE). Contrary to the theoretical expectations for the seventh merger wave, our results provide no statistically significant evidence that firms engaging in M&As during the seventh wave outperformed those from the fifth (1003-2001) or sixth (2003-2007) merger waves in terms of lasting ROA and ROE. This conclusion holds consistently across various dimensions, including different deal types (domestic versus cross-border), specific industries (technology and pharmaceutical sectors), and the timing of acquisitions within a wave (early versus late entrants).

These findings critically challenge the widely held theoretical expectation that strategic intent alone guarantees sustained financial gains in M&A activities Managers should therefore establish cross-functional integration teams early, implement multi-year KPI dashboards to track post-merger performance beyond short-term stock reactions, and align each deal's complexity with internal capabilities through formal capability audits.

Key constraints include reliance on Compustat Global (omitting North-American deals), a limited set of control variables, and the absence of truly global deal coverage. Future research should incorporate richer deal-level data and access truly comprehensive data to more definitively assess when and how M&As yield sustainable long-term value.

Preface

This thesis was written to fulfill the graduation requirements of the Strategic Management Master's program at Tilburg University. I have been engaged in this research from February 2025 until June 2025. The process of writing this this master thesis has been both challenging and rewarding, and I could not have reached this point without the support and guidance of others.

I would like to express my sincere gratitude to my thesis supervisor, Chloe Xu, for her valuable guidance and support during the writing of this study. I also wish to thank all professors of the TiSEM department for providing insightful lessons and deepening my knowledge over the past academic year. Lastly, I am grateful to my family, girlfriend, friends, and fellow students for their continued encouragement and moral support throughout this journey.

Job Visscher

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Introduction

Mergers and acquisitions (M&A) are one of the most significant corporate strategies for growth, market expansion, and capability development. However, despite their strategic importance, achieving sustainable long-term value creation through M&A is notoriously challenging, with many studies reporting underperformance in the years following an acquisition (Fuad & Gaur, 2018; Haleblian et al., 2009). M&A activity has always had cyclical patterns, known as "merger waves", driven by factors such as economic cycles, technological disruption, deregulation, and capital market liquidity (Ching, 2019; Harford, 2005; Lin et al., 2023). While the majority of the academic literature has focused on the short-term market reactions to M&A, e.g., through stock price movements, such event-driven measures provide only a partial view. They often fail to capture longer-term outcomes such as firm growth, innovation potential, and sustainable value creation (Fuad & Gaur, 2018; Haleblian et al., 2009). Understanding these long-term impacts becomes relevant when considering the differences between historical merger waves.

Looking at M&As over the past 30 years, three merger waves have occurred. The fifth wave (1993–2001) was characterized by globalization, deregulation, and accelerated technological advancements, leading to increased cross-border M&As (Cho & Chung, 2022). Economic liberalization of many markets, particularly in Europe, facilitated large-scale consolidation, and companies leveraged the internet and telecommunications boom to expand their operations globally (McNamara et al., 2008). Landmark deals such as Vodafone's acquisition of Mannesmann and the Exxon-Mobil merger exemplified this ambition for global reach and operational scale. However, this period also saw excessive speculation driven by misvaluations in the stock market, resulting in the burst of the dot-com bubble, which negatively impacted post-merger performance (Gorton et al., 2009).

The sixth wave (2003–2007) was shaped by more private equity activity and financial market-driven acquisitions (Cordeiro, 2014). The increased availability of leverage and structured financing fuelled aggressive M&A deals, with firms seeking rapid expansion through debt-financed transactions (Shimizu et al., 2004). This trend was illustrated by high-profile deals such as Blackstone's leveraged buyout of Hilton Hotels. The wave was further influenced by advancements in financial engineering, allowing firms to optimize tax structures and debt leverage in cross-border acquisitions (Fuad & Gaur, 2018). However, the financial crisis of 2008 abruptly ended the wave, exposing the vulnerabilities of highly leveraged firms and leading to a wave of bankruptcies and restructuring (Maksimovic et al., 2013).

The seventh wave (2010–2022) emerged after the 2008 financial crisis in a low-interest-rate environment, shaped by digital transformation, sustainability concerns, and greater regulatory scrutiny (Ching, 2019; Fuad & Gaur, 2018; Maksimovic et al., 2013). Digital transformation, particularly through advancements in artificial intelligence (AI), cloud computing, and data analytics, reshaped industry competition and drove acquisitions aimed at capability building and technological leadership (Lin et al., 2023). Companies such as Microsoft (LinkedIn acquisition) and Salesforce (Slack acquisition) pursued targets to expand their digital ecosystems and accelerate innovation (Valentini, 2011; Xu, 2017). Sustainability concerns, such as growing pressure from regulators and investors for ESG compliance, increasingly influenced deal-making priorities, particularly in Eu-

rope and North America (Palm et al., 2023). Firms incorporated environmental impact, social responsibility, and governance factors into their acquisition strategies, seeking both risk mitigation and reputational benefits. At the same time, greater regulatory scrutiny, notably in the form of stricter antitrust enforcement in the technology sector, sought to restrain monopolistic behaviour and ensure fair competition in increasingly concentrated markets (Kling et al., 2013; Landoni, 2024). These factors collectively contributed to a shift from financial speculation towards more strategically focused and capability-driven M&A activities during the seventh wave.

Data from the Institute for Mergers, Acquisitions & Alliances (IMAA) highlights that the seventh merger wave was significantly larger than its predecessors in both transaction volume and deal value. The number of deals reached record highs between 2015 and 2021, with a peak in 2021 surpassing all previous waves before experiencing a sharp decline in 2022–2024, signalling the end of the wave. The global M&A market reached a total deal value exceeding 4.5 trillion dollars in 2021, making it the largest year on record for M&A (Institute for Mergers, Acquisitions and Alliances (IMAA), 2024). These figures confirm that the seventh wave not only lasted longer than prior waves but also had a greater financial impact, reinforcing the urgency to analyse its long-term value creation effects.

While these developments suggest that the seventh merger wave theoretically offers improved prospects for post-merger firm performance compared to its predecessors, aligning more closely with sustainable firm growth and long-term value creation. Empirical evidence confirming this superior long-term financial performance remains critically under explored or mixed. This study aims to fill that gap by empirically testing whether these strategic advancements of the seventh wave have indeed translated into lasting operational gains.

This study aims to explore how M&A activity influences long-term firm value creation across different merger waves, with a particular focus on the seventh wave and its distinctive characteristics. Recognizing that firms within each wave may still pursue diverse motivations and that the timing of M&A deals within a wave may further influence outcomes, this research explicitly considers both cross-wave comparisons and within-wave dynamics. The central research question guiding this study is:

> *How do M&As influence long-term firm value creation across different merger waves?*

To address this question, the following sub-questions are developed:

1. How does the impact of M&A on long-term firm value creation differ between the fifth, sixth, and seventh merger waves?

2. How do domestic and cross-border M&As differ in their influence on post-merger firm performance across merger waves?

3. To what extent do industry-specific factors moderate the relationship between M&A activity and long-term value creation in the seventh merger wave?

Through these questions, the study aims to make three key contributions to M&A research and practice. First, it systematically compares long-term value creation (ROA and ROE) across the fifth, sixth, and seventh merger waves, filling a gap in longitudinal analyses. Second, it demonstrates how empirical ROA and ROE outcomes can guide management teams in timing acquisitions within a wave. Identifying when market conditions,

valuation levels, and strategic fit align to maximize returns, and how to balance price versus organizational fit in target selection and integration planning. Finally, it examines how industry characteristics and domestic vs. cross-border deals moderate post-merger performance, refining theories of absorptive capacity and institutional context.

The remainder of this thesis is structured as follows. Chapter 2 provides a comprehensive literature review, outlining the theoretical foundations of merger waves, motivations for M&A activity, and the drivers of long-term firm value creation. Special attention is given to the role of innovation acquisition, regulatory compliance, and strategic alignment, as well as industry-specific factors and the characteristics of cross-border deals. Chapter 3 describes the research methodology, including the dataset, variable construction, and the econometric approach used to analyse long-term performance across different merger waves. Chapter 4 presents the empirical findings, comparing the impact of M&A activity across the fifth, sixth, and seventh merger waves, and examining how deal characteristics and industry dynamics influence post-merger firm performance. Chapter 5 to 8 concludes the thesis by discussing the key findings, theoretical contributions, and managerial implications. This final chapter also addresses the study's limitations and offers suggestions for future research.

Literature Review

What are merger waves

Mergers and acquisitions (M&As) are major corporate strategies for growth and restructuring, involving the combination of two companies into one entity (a merger) or the purchase of one company by another (an acquisition). These transactions allow firms to reallocate resources, gain control over complementary assets, and achieve strategic objectives in both domestic and international contexts (Haleblian et al., 2009; Shimizu et al., 2004). In practice, the terms are often used together because both result in two firms' resources being integrated under common ownership. M&As are among the most important and prevalent corporate decisions for firm expansion and diversification (Gorton et al., 2009).

They can enable companies to achieve inorganic growth, expanding more rapidly than internal development, although empirical evidence indicates that integration delays, cultural misfits, and post-merger disruptions can negate these speed advantages (Shimizu et al., 2004). This form of growth through external acquisition enables firms to accelerate strategic transformation, enhance competitive positioning, and adapt to changing market dynamics (Capron & Mitchell, 2009; Hitt et al., 2001). This inorganic growth via M&A can reshape industries by reallocating assets and consolidating competitors, making M&A a powerful tool for strategic transformation.

Merger waves refer to periods of heightened M&A activity, during which not only deal volumes rise sharply across industries and regions, but deal characteristics also exhibit distinctive patterns. These waves are characterized by clusters of transactions that exceed the typical frequency of M&A activity, often transforming competitive dynamics at both industry and economy-wide levels (Harford, 2005; Martynova & Renneboog, 2008).

Merger waves are often associated with favourable macroeconomic conditions such as strong GDP growth, bullish stock markets, and low interest rates. They often coincide with high investor confidence and capital market liquidity, which provide firms with both the motivation and the means to engage in acquisitions (Harford, 2005). Notably, these periods are not evenly distributed over time but tend to occur in distinct, identifiable phases. When they emerge, they reshape industry structures, intensify competition, and sometimes culminate in market consolidation (Ching, 2019).

Theoretical foundations: what drives merger waves

Literature typically explains the occurrence of merger waves through two main theoretical lenses. The neoclassical perspective emphasizes economic efficiency and industry shocks as rational triggers for heightened acquisition activity, while the behavioural perspective highlights managerial overconfidence, herd behaviour, and market exuberance as key behavioural drivers (Ching, 2019; Haleblian et al., 2009; Martynova & Renneboog, 2008). In addition, transaction cost theory provides a complementary explanation by viewing M&A as a governance response to rising coordination and enforcement costs in imperfect markets. During turbulent periods, often coinciding with merger waves, firms may prefer

acquisitions to internalize operations and reduce uncertainty (Hennart, 1988; Shimizu et al., 2004; Williamson, 1986). These perspectives provide a foundational understanding of why merger waves emerge, which will be explored in further depth in the following section.

Neoclassical perspective

The neoclassical perspective views M&A activity as a rational and efficient response to changing market conditions, focusing on economic efficiency, industry shocks, and the opportunities created by deregulation, technological change, and globalization (Harford, 2005; Martynova & Renneboog, 2008). During periods of favourable macroeconomic conditions and capital abundance, firms are incentivized to pursue acquisitions to achieve scale, gain access to new markets, and exploit technological opportunities. Liquidity is a particularly important factor, as the availability of cheap financing enables a higher volume of transactions (Harford, 2005). Financial innovations such as leveraged buyouts and structured deals further reduce transaction costs and accelerate acquisition activity (Ching, 2019).

A prominent example of a neoclassical-driven deal is the Vodafone–Mannesmann acquisition in 2000. The $195 billion transaction was driven by strategic motivations to achieve global scale, access new markets, and consolidate operations across a deregulating European telecommunication sector (GoldmanSachs, 2000; Martynova & Renneboog, 2008). Vodafone's acquisition was facilitated by favourable macroeconomic conditions and high market valuations, which enabled the company to finance the deal using equity. These characteristics, favourable financial conditions, deregulation, and strategic efficiency goals, align closely with the neoclassical explanation that firms merge to respond rationally to external economic incentives (Harford, 2005; Martynova & Renneboog, 2008).

Similarly, the Exxon–Mobil merger in 1999 was motivated by the need to reduce costs and increase efficiency amid falling oil prices and intensified global competition. The $81 billion deal resulted in estimated annual cost savings of $2.8 billion and represented a strategic consolidation to strengthen the firm's global position in the energy industry (CNNMoney, 1999; Plummer, 2023). The decision to merge was a calculated response to macroeconomic pressure and market structure shifts, reflecting the economic rationality at the core of neoclassical theory (Harford, 2005).

Behavioural perspective

Complementing this rational explanation, the behavioural perspective emphasizes the role of human biases and market psychology in fuelling merger waves. Managerial overconfidence, herd behaviour, and periods of bullish markets often drive acquisition decisions beyond what fundamentals would justify (Cho & Chung, 2022; Malmendier & Tate, 2005). For instance, high equity valuations provide an inflated acquisition currency, encouraging firms to pursue stock-financed deals even when synergies are uncertain (Martynova & Renneboog, 2008). Additionally, peer imitation is a powerful behavioural driver, as firms follow the actions of competitors to avoid missing out on perceived opportunities (Ahern & Harford, 2013).

The AOL–Time Warner merger in 2000, valued at $165 billion, is widely cited as a behaviourally driven transaction (Grimes, 2024). Occurring at the peak of the dot-

com bubble, the merger was driven more by market hype and managerial overconfidence than by strategic or operational fit. AOL's inflated stock price was used to finance the acquisition, and executives projected unrealistic synergies between internet distribution and traditional media. The subsequent $99 billion write-down reflects the disconnect between perceived and actual value, consistent with the behavioural notion that firms overestimate their capabilities and act under the influence of irrational market sentiment (Arango, 2010; Malmendier & Tate, 2005; Martynova & Renneboog, 2008).

A more recent example is Microsoft's acquisition of Nokia's handset business in 2014 (ForbesLeadershipForum, 2013). The $7.2 billion deal was widely viewed as a reactive move to imitate Apple's integrated hardware–software strategy, despite lacking an ecosystem to support it. Analysts cited overconfidence in Microsoft's ability to transform Nokia's declining business and emotional decision-making driven by a fear of falling behind in the smartphone market (Hartung, 2013; Lopez, 2013). Ultimately, Microsoft wrote down nearly the entire value of the acquisition, reinforcing behavioural theories that emphasize imitation, optimism bias, and late-wave irrationality (Cho & Chung, 2022).

While both perspectives offer valuable insights, their relative influence has not remained constant over time. In some merger waves, neoclassical factors such as deregulation and industry consolidation dominate, while in others, behavioural dynamics like overconfidence and herd behaviour become more prominent.

Transaction Cost Theory

The transaction cost approach views M&As as governance mechanisms that allow firms to internalize operations when market-based transactions become inefficient. Rooted in the foundational work of Coase (1937) and Williamson (1975), this perspective holds that firms acquire others when the costs of coordinating, enforcing, or renegotiating external contracts exceed the costs of hierarchical control (Hennart, 1988; Williamson, 1986). These transaction costs are particularly salient when asset specificity, environmental uncertainty, or opportunistic behaviour is present (Brouthers, 2013; David & Han, 2004).

In the M&A context, transaction cost economics (TCE) explains why firms often pursue vertical or related acquisitions to safeguard strategic inputs and capabilities. When external contracting becomes inefficient, due to incomplete information, information asymmetry, or weak legal institutions, internalization via acquisition becomes more efficient (Meyer et al., 2009; Shimizu et al., 2004). TCE thus complements the neoclassical emphasis on value creation by focusing instead on minimizing governance costs and mitigating risks (Capron & Mitchell, 2009; Hennart & Reddy, 1997). Capron and Mitchell (2009) show that internal governance is often chosen when external partnerships entail coordination frictions, while Hennart and Reddy (1997) demonstrate that acquisitions are preferred over joint ventures when needed resources are deeply embedded and difficult to price.

TCE also contributes to explaining merger wave patterns. Periods of macroeconomic turbulence or institutional weakness raise external transaction costs, encouraging firms to shift from market exchange to hierarchical control through M&A (Gaur & Lu, 2007; Meyer et al., 2009). This is especially apparent in cross-border M&A activity, which often spikes when institutional voids or regulatory shifts make market-based coordination risky or infeasible (Shimizu et al., 2004; D. Xu & Shenkar, 2002). TCE logic suggests that under these conditions, acquiring full control through equity becomes a rational response to overcome institutional hazards.

Empirical studies further validate the role of TCE in cross-border acquisitions. For example, Meyer et al. (2009) find that firms entering emerging markets with weak legal systems often favour acquisitions to bypass contracting inefficiencies. Similarly, Gaur and Lu (2007) demonstrate that institutional distance increases the likelihood of full acquisitions over joint ventures as a way to secure property rights and mitigate political risk. These findings are echoed by Shimizu et al. (2004), who argue that acquisitions help firms navigate foreign institutional uncertainty and achieve better coordination of strategically critical activities.

A practical illustration of TCE is Amazon's acquisition of Kiva Systems. Rather than licensing the robotics technology or entering a partnership, Amazon opted for full acquisition to secure control over a high asset-specific input critical to its logistics operations (Hennart, 1988; Williamson, 1986). This mirrors TCE predictions that firms will internalize transactions involving high specificity, especially when external contracts are vulnerable to opportunism or renegotiation hazards (David & Han, 2004; Delios & Beamish, 1999). By owning Kiva, Amazon avoided coordination failure and assured exclusive access to its strategic automation capabilities.

In sum, TCE provides a compelling governance-based explanation for M&A behaviour, especially under conditions of high uncertainty, asset specificity, and institutional weakness. The framework remains particularly relevant in cross-border contexts, where the risk of relying on external markets is heightened. By emphasizing control and governance efficiency, TCE complements other M&A theories and helps explain when and why firms choose acquisition over alternative modes of expansion (Hennart & Reddy, 1997; Meyer et al., 2009).

The following sections will explore how these theoretical perspectives manifest differently across the fifth, sixth, and seventh merger waves.

Fifth merger wave

The fifth merger wave, spanning from 1992 to 2000, was largely shaped by the forces of globalization, privatization, and widespread deregulation. From a neoclassical perspective, these structural changes opened new markets and reduced barriers to cross-border transactions, encouraging firms to pursue strategic expansion and operational synergies (Martynova & Renneboog, 2008). Particularly in Europe, economic liberalization created an environment ripe for industry consolidation, especially in sectors such as telecommunications, financial services, and energy (Knaapen, 2018). Companies pursued acquisitions to capitalize on the booming internet and telecommunications sectors, leveraging new technologies to enhance competitiveness (McNamara et al., 2008).

Capital market conditions further supported this wave. Robust stock market performance and high liquidity facilitated financing for large-scale deals. Many firms used their elevated stock prices as acquisition currency, which aligns with the neoclassical explanation that merger waves coincide with favourable financing environments (Harford, 2005).

While these conditions enabled rational deal-making, they also created behavioural distortions. The same elevated stock prices that made acquisitions financially attractive also encouraged excessive optimism and inflated valuations. Elevated market optimism led to an increase in stock-financed megamergers, where acquirers often overpaid for targets based on inflated valuations (Gorton et al., 2009). Managerial overconfidence

was prevalent, as CEOs believed they could successfully integrate targets and realize synergies, despite the complexities involved (Malmendier & Tate, 2005). The prevalence of stock-financed deals during this period is indicative of firms capitalizing on overvalued equity to fund acquisitions, a classic behavioural motive (Martynova & Renneboog, 2008).

Post-merger integration challenges were widespread, particularly in cross-border transactions where cultural and regulatory differences complicated deal execution (Haleblian et al., 2009). Although firms aimed for strategic transformation, the speculative environment and underestimation of integration risks often undermined long-term value creation. In some deregulated industries, acquisitions also served to internalize operations amid evolving institutional frameworks. While the relevance of transaction cost logic was still emerging during this wave, it began to surface in cross-border contexts where legal systems were underdeveloped or contract enforcement was uncertain (Hennart, 1988; Hennart & Reddy, 1997).

Thus, while the fifth wave was driven by rational opportunities arising from deregulation and globalization, behavioural factors such as market optimism and managerial hubris significantly influenced acquisition activity and outcomes.

Sixth merger wave

The sixth merger wave, occurring between 2003 and 2007, emerged in the aftermath of the dot-com collapse and was characterized by cheap credit, aggressive private equity activity, and global liquidity. From a neoclassical viewpoint, low interest rates and favourable credit conditions provided firms with easy access to financing, fuelling a surge in leveraged buyouts and cross-industry acquisitions (Ching, 2019; Harford, 2005). Financial engineering and structured financing strategies allowed firms to optimize capital structures and pursue rapid expansion (Shimizu et al., 2004).

Industry-specific drivers were also significant. Globalization continued to open new markets, while deregulation in industries such as banking and telecommunications created consolidation opportunities. Firms sought to achieve operational efficiencies, diversify risk, and increase market share through acquisitions (Haleblian et al., 2009). The sixth wave therefore aligns closely with the neoclassical framework, highlighting how economic expansion and financial innovation catalyse M&A activity.

Nevertheless, behavioural dynamics were equally, if not more, influential in this period. Managerial herding behaviour was highly visible, as firms engaged in reactive acquisitions, imitating industry peers to maintain competitive parity (Ahern & Harford, 2013). McNamara et al. (2008) emphasize the role of bandwagon effects, where firms rushed into acquisitions at the peak of the wave, often overpaying for lower-quality targets (McNamara et al., 2008). These behavioural patterns were amplified by widespread market liquidity, which diminished perceptions of deal-related risk.

The influence of behavioural motives is further evidenced by the aggressive pace of private equity transactions, many of which prioritized financial engineering over genuine strategic fit. This trend led to an increase in high-leverage deals, which ultimately exposed firms to greater vulnerability when the global financial crisis unfolded (Maksimovic et al., 2013). Transaction cost considerations played a more prominent role during this wave, particularly in cross-border M&As. Many firms entered emerging markets or institutionally weak environments where contractual enforcement was unreliable, prompting them to acquire rather than partner. These deals often reflected a strategic response to

governance risk, consistent with TCE principles (Meyer et al., 2009; Shimizu et al., 2004).

Overall, the sixth merger wave represents a period where neoclassical drivers, behavioural influences, and governance concerns converged. Economic conditions enabled acquisitions, behavioural tendencies intensified deal activity, and growing exposure to institutional uncertainty led firms to internalize transactions more frequently, often at the expense of long-term value creation.

Seventh merger wave

The seventh merger wave, spanning from 2010 to 2022, unfolded in the aftermath of the global financial crisis and is characterized by distinctive features that set it apart from previous waves. From a neoclassical perspective, the seventh wave reflects a strategic response to rapid technological transformation and globalization pressures. Firms pursued acquisitions to access digital capabilities, advanced technologies, and innovative business models, rather than merely seeking scale or cost efficiencies (Palm et al., 2023; Xu, 2017). Unlike earlier waves, this period was marked by the overall influence of digitalization and data-driven business strategies, which reshaped M&A priorities across sectors (Ching, 2019; Cho & Chung, 2022).

The global low-interest-rate environment following the financial crisis provided favourable financing conditions that supported M&A activity, consistent with neoclassical theories that highlight capital liquidity as a critical enabler (Maksimovic et al., 2013). Cross-border transactions were particularly prominent, as firms aimed to expand into high-growth markets and secure access to scarce strategic assets in an increasingly competitive global economy (Landoni, 2024; Xu, 2017). Regulatory environments became more complex, with increased scrutiny in sectors such as technology and healthcare, yet this did not deter firms from pursuing cross-border deals. Instead, it led to more sophisticated deal structuring and integration planning (Fuad & Gaur, 2018).

From a behavioural perspective, however, many familiar dynamics persisted. Managerial overconfidence and herd behavior remained relevant drivers of deal-making, especially in fast-moving sectors like technology, where the fear of missing out (FOMO) on transformative opportunities led to aggressive acquisition strategies (Cho & Chung, 2022; Lin et al., 2023). Lin et al. (2023) emphasize that in competitive industries, early movers captured superior post-merger performance, reinforcing the urgency felt by firms to act swiftly.

At the same time, the seventh wave demonstrated a higher degree of execution sophistication compared to prior waves. Firms increasingly focused on capability absorption and post-deal integration to maximize long-term value creation, reflecting a more deliberate and learning-oriented approach to M&A (Palm et al., 2023). Moreover, deal-making was informed by growing awareness of the risks associated with high valuations and integration failures, leading to more cautious structuring and due diligence practices (Fuad & Gaur, 2018).

Despite these advances, the seventh wave was not immune to the risks of behavioural excess. Empirical studies show that firms still faced challenges in realizing expected synergies, especially in complex cross-border deals and highly innovative sectors where post-merger integration is inherently difficult (Maksimovic et al., 2013; Xu, 2017). Moreover, as Lin et al. (2023) observe, timing within the wave continued to affect outcomes, with late-stage entrants often overpaying for lower-quality targets in crowded markets.

Transaction cost theory is particularly relevant in understanding the distinct character of the seventh wave. With firms increasingly targeting high-tech assets and entering institutionally complex environments, acquisitions became a preferred mechanism for controlling knowledge flows, managing integration risk, and navigating regulatory fragmentation. TCE thus provides a critical governance-based explanation for why M&A activity intensified and became more sophisticated during this period (Alexandridis et al., 2012; Ching, 2019; Cho & Chung, 2022; Hennart, 1988; Xu, 2017).

Summary of M&A merger wave characteristics

Table 1: Summary of M&A merger wave characteristics

Category	**Fifth merger wave**	**Sixth merger wave**	**Seventh merger wave**
Period	1992–2000	2003–2008	2010–2022
Role of behavioral dynamics	High: market exuberance, managerial overconfidence	Very high: bandwagon effects, peer imitation, managerial herding	Present but moderated: competitive pressure, tech hype, fear of missing out
Financing environment	High equity valuations, abundant liquidity	Low interest rates, credit abundance	Low interest rates, sophisticated deal structures
Deal characteristics	Stock-financed megamergers, cross-border expansion	Leveraged Buy-Outs, Private Equity-driven deals, cross-industry	Tech-driven, cross-border, integration focus
M&A motives	Strategic expansion, growth, exploiting market conditions	Market share, efficiency, peer imitation	Innovation, capability acquisition, global expansion, digitalisation
Industries involved	Telecom, finance, energy, early tech	Broadly cross-industry: banking, telecom, consumer goods	Tech, pharma, consumer sectors, emerging markets
Main risks / challenges	Overpayment, complex integration, cultural differences	High leverage, overheating, integration risks	Integration of complex targets, regulatory scrutiny, valuation risks
Expected impact on long-term value creation	Mixed: high ambitions, but frequent integration failures	Lower: leverage and herd behavior often undermined long-term value	Higher potential: strategic fit, innovation focus, but integration risks remain

Effects of M&A announcements on firm performance

The announcement of an M&A transaction serves as an important signal to financial markets, often triggering immediate reactions in the stock prices of both the acquiring and target firms. Market participants interpret these announcements based on expectations of deal quality, synergies, and the likelihood of value creation (Alexandridis et al., 2012; Andrade et al., 2001).

Empirical research consistently shows that target firms experience significant positive abnormal returns at the announcement date, largely reflecting the acquisition premium offered by the acquirer (Alexandridis et al., 2012; Martynova & Renneboog, 2008; Moeller et al., 2004). These premiums serve to compensate target shareholders for giving up control and often reflect competitive pressures among multiple potential bidders (Alexandridis et al., 2012; Fuad & Gaur, 2018). Moreover, premiums tend to be higher in heated market conditions and late stages of merger waves, when bidding wars are more likely to occur (Lin et al., 2023; Maksimovic et al., 2013).

By contrast, acquirers frequently experience modest or negative announcement returns. Market scepticism often centres on the acquirer's ability to realise expected synergies and manage integration complexities (Alexandridis et al., 2012; King et al., 2004; Moeller et al., 2004). Financing method also shapes investor perception. Cash deals generally elicit more favourable responses than stock-financed transactions, signalling stronger bidder conviction and lower perceived risk (Alexandridis et al., 2012; Fuad & Gaur, 2018; Martynova & Renneboog, 2008). Additionally, acquirers with a proven track record of successful M&A tend to benefit from greater market confidence (Palm et al., 2023; Valentini, 2011).

However, announcement effects are far from uniform. Cross-border transactions, for example, face greater scrutiny due to integration challenges and liability of foreignness, often dampening market reactions (Fuad & Gaur, 2018; Lin et al., 2023; Moeller et al., 2004). Industry dynamics further moderate market responses. Deals in fast-moving or highly regulated sectors like technology or pharmaceuticals attract heightened attention, given elevated execution risks (Ching, 2019; Landoni, 2024; Palm et al., 2023). In industries already undergoing consolidation, such as telecom in the fifth wave or technology in the seventh, investor assessments weigh whether deals offer genuine strategic advantage or merely follow sector momentum (Maksimovic et al., 2013; Martynova & Renneboog, 2008).

Crucially, the timing of a transaction within a merger wave significantly influences investor reactions. Early wave deals often benefit from investor optimism, as they are perceived as strategically proactive and well-timed (Ching, 2019; Lin et al., 2023). These transactions suggest foresight and the ability to capitalise on emerging opportunities before market conditions intensify. In contrast, late-wave deals attract greater scepticism, as they risk being viewed as reactive or speculative, driven more by herd behaviour than by strategic fit (Lin et al., 2023; Maksimovic et al., 2013). Studies highlight that during the latter stages of a wave, acquirers are more likely to overpay for lower-quality targets, reinforcing concerns about value erosion (Fuad & Gaur, 2018; Lin et al., 2023). These temporal dynamics underline the importance of not only deal-specific factors but also broader market timing in shaping announcement outcomes.

Short-term market reactions at the announcement stage offer only a partial view of M&A success. While these reactions capture investor sentiment and market timing, they do not reveal whether anticipated synergies or operational improvements actually materialise. As a result, recent studies increasingly advocate the use of accounting-based indicators to evaluate long-term value creation (Abuzaid et al., 2024; Haleblian et al., 2009). In particular, return on assets (ROA) and return on equity (ROE) provide more direct insight into operational effectiveness and profitability over time, as they are less influenced by external market conditions and speculative sentiment (Kling et al., 2013; Lin et al., 2023; McNamara et al., 2008; Palm et al., 2023). These indicators, and their role in capturing post-merger performance, are further explored in the following section.

Post-merger firm performance

While announcement effects provide immediate insights into market sentiment, they offer limited predictive power for post-merger success. Empirical research highlights that short-term market

optimism does not necessarily translate into long-term value creation, as integration complexities and strategic misalignment frequently undermine anticipated synergies (Haleblian et al., 2009; King et al., 2004; Palm et al., 2023). In fact, numerous studies report that acquirers often underperform market benchmarks in the years following an acquisition, particularly when deals are motivated by short-term market pressures rather than strategic fit (Fuad & Gaur, 2018; Maksimovic et al., 2013).

The quality of post-merger integration emerges as a critical determinant of long-term performance. Firms with strong integration capabilities and prior acquisition experience are better positioned to realise intended synergies and avoid value leakage (Haleblian et al., 2006; Palm et al., 2023). Conversely, poor integration planning often leads to operational disruptions, employee turnover, and customer attrition, eroding the expected benefits of the transaction (Stahl & Voigt, 2008; Valentini, 2011). The challenges are particularly pronounced in cross-border deals, where cultural and institutional differences complicate integration efforts (Shimizu et al., 2004; Xu, 2017).

Deal timing within a merger wave also influences post-merger outcomes. Early movers tend to enjoy superior long-term performance, as they are better able to select high-quality targets and integrate them effectively before market conditions deteriorate (Lin et al., 2023; McNamara et al., 2008). By contrast, firms engaging in late-wave acquisitions often face inflated valuations and intense competition for targets, which increase the risk of overpayment and underperformance (Ahern & Harford, 2013; Maksimovic et al., 2013).

Theoretical insights suggest notable differences between merger waves in terms of their long-term value creation potential. The fifth wave was characterised by ambitious cross-border expansions and stock-financed megamergers, yet many acquirers lacked the integration capabilities necessary to realise synergies, particularly in complex international deals (Haleblian et al., 2009; Martynova & Renneboog, 2008). Managerial overconfidence and market exuberance further inflated valuations, contributing to underwhelming post-merger outcomes (Gorton et al., 2009; Malmendier & Tate, 2005). Similarly, the sixth wave, though initially promising operational efficiencies, was heavily influenced by bandwagon behaviour and excessive reliance on leverage, especially in private equity-driven transactions (Ahern & Harford, 2013; Maksimovic et al., 2013). As competition for targets intensified, late-wave deals often suffered from overpayment and diminished integration success, leading to weaker post-merger performance (Lin et al., 2023; McNamara et al., 2008).

By contrast, the seventh wave displayed a more strategic orientation, driven by acquisitions aimed at technological innovation and capability acquisition rather than short-term financial gains (Ching, 2019; Palm et al., 2023). Firms placed greater emphasis on integration planning and absorptive capacity, improving the likelihood of capturing synergies from complex, innovation-intensive targets (Palm et al., 2023; Valentini, 2011). While risks of overvaluation and market hype, particularly in the technology sector, persisted (Fuad & Gaur, 2018; Lin et al., 2023), regulatory scrutiny during the seventh wave served as an additional discipline mechanism, potentially filtering out lower-quality or excessively risky deals (Landoni, 2024). Taken together, these developments suggest that, from a theoretical perspective, the seventh wave offers improved prospects for post-merger firm performance compared to its predecessors, aligning more closely with sustainable firm growth and long-term value creation.

Moderators

The extent to which M&A transactions succeed depends heavily on a variety of moderating factors. These include deal characteristics, managerial influences, firm-level attributes, and environmental conditions (Haleblian et al., 2009).

Deal-specific attributes, such as the method of payment and the nature of the transaction,

significantly affect outcomes. Stock-financed deals are generally associated with poorer performance, as they may signal an overvalued acquirer (Alexandridis et al., 2012). In contrast, cash transactions are often viewed as a stronger signal of deal quality and acquirer confidence (Moeller et al., 2004).

Managerial characteristics such as ownership structures, incentive schemes, prior acquisition experience, and personal traits like risk tolerance play pivotal roles. Experienced managers are better equipped to navigate the complexities of acquisitions (Haleblian et al., 2006). Conversely, overconfident executives are prone to overestimating potential synergies, leading to value-destroying deals (Malmendier & Tate, 2005).

Firm-level factors, including size and pre-deal performance, also moderate M&A outcomes. Larger firms with greater resources typically have better integration capabilities, while firms with constrained resources may struggle post-merger (Palm et al., 2023). Additionally, firms with extensive acquisition experience tend to realize greater value from subsequent transactions (Haleblian et al., 2006).

External environmental conditions, such as regulatory frameworks and merger wave dynamics, further influence success rates. Acquisitions completed during merger waves often suffer from overvaluation pressures as firms rush to keep pace with competitors (Ahern & Harford, 2013). Regulatory scrutiny and antitrust considerations can also complicate integration and affect the likelihood of realizing intended synergies (Xu, 2017).

To translate the theoretical propositions into testable expectations, the following hypotheses are derived, focusing on the comparative effects of merger wave timing, deal type, and industry dynamics on post-merger firm performance.

Firms engaging in M&A during the seventh merger wave exhibit superior post-merger firm performance compared to those in the fifth merger wave. **(H1a)**

Firms engaging in M&A during the seventh merger wave exhibit superior post-merger firm performance compared to those in the sixth merger wave. **(H1b)**

Cross-border M&As have a stronger positive effect on post-merger firm performance than domestic M&As during the seventh merger wave compared to the fifth merger wave. **(H2a)**

Cross-border M&As have a stronger positive effect on post-merger firm performance than domestic M&As during the seventh merger wave compared to the sixth merger wave. **(H2b)**

The positive relationship between M&A activity and post-merger firm performance is stronger in the technology industry during the seventh merger wave compared to the fifth merger wave. **(H3a1)**

The positive relationship between M&A activity and post-merger firm performance is stronger in the technology industry during the seventh merger wave compared to the sixth merger wave. **(H3a2)**

The positive relationship between M&A activity and post-merger firm performance is stronger in the pharmaceutical industry during the seventh merger wave compared to the fifth merger wave. **(H3b1)**

The positive relationship between M&A activity and post-merger firm performance is stronger in the pharmaceutical industry during the seventh merger wave compared to the sixth merger wave. **(H3b2)**

Early acquirers in wave 7 exhibit superior post-merger performance compared to early acquirers in wave 5. **(H4a1)**

Early acquirers in wave 7 exhibit superior post-merger performance compared to early acquirers in wave 6. **(H4a2)**

Late acquirers in wave 7 exhibit inferior post-merger performance compared to late acquirers in wave 5. **(H4b1)**

Late acquirers in wave 7 exhibit inferior post-merger performance compared to late acquirers in wave 6. **(H4b2)**

Methodology

This study will employ a quantitative research approach using panel data regression analysis to assess the relationship between M&A activity and firm value creation across different merger waves. Panel data regression is particularly well-suited for this study as it enables the analysis of firm-level variations over time, capturing both cross-sectional and longitudinal effects (Lin et al., 2023). This method allows for better control over unobservable firm-specific characteristics that may influence M&A outcomes, ensuring a more accurate assessment of causality compared to cross-sectional studies (Abuzaid et al., 2024).

M&A data will be obtained from Orbis M&A, providing detailed transaction-level insights, while firm performance indicators, including return on assets (ROA) and return on equity (ROE), will be retrieved from Compustat. ROA and ROE will serve as the primary measures of long-term firm performance, capturing profitability and efficiency post-merger. To assess long-term firm value creation more effectively, scholars increasingly rely on accounting-based performance indicators such as ROA and ROE. ROA measures how efficiently a firm generates earnings from its total asset base, while ROE reflects the profitability relative to shareholder equity. Both metrics provide insight into realised internal performance, especially in the years following a merger, and are less affected by market volatility than stock-based measures such as Tobin's Q (Abuzaid et al., 2024; Haleblian et al., 2009). This is particularly relevant in the context of the seventh merger wave, where value creation is expected to arise from innovation, strategic alignment, and integration capabilities; factors better captured through ROA and ROE than through speculative market metrics.

Consequently, ROA and ROE are increasingly prioritized in empirical M&A studies tracking long-term outcomes, being widely accepted for assessing post-acquisition impact and profitability (Kling et al., 2013; Knaapen, 2018; Lin et al., 2023; Palm et al., 2023; Xu, 2017). By aligning measurement with theoretical constructs such as resource redeployment, absorptive capacity, and synergy realization (Haleblian et al., 2009; Palm et al., 2023; Valentini, 2011), they offer a reliable basis for assessing M&As contribution to sustainable firm growth (Abuzaid et al., 2024; Palm et al., 2023). Control variables will include firm size (total assets), as well as industry and country dummies, ensuring that external factors influencing M&A performance are accounted for.

Sample selection

The original dataset was constructed using data retrieved from Orbis M&A and Compustat Global. From Orbis M&A, a total of 93,371 completed M&A transactions were identified. The search criteria included deal type (mergers and acquisitions), deal status (completed – confirmed), time periods aligned with the three major merger waves (wave 5: January 1, 1993 to December 31, 2001; wave 6: January 1, 2003 to December 31, 2007; and wave 7: January 1, 2010 to December 31, 2022), a minimum acquired stake of 50 percent, and payment method limited to cash or shares. To obtain financial performance data, Compustat Global (Fundamentals Annual) was used. Firm-year data was retrieved for companies matched to the Orbis sample using International Security Identification Numbers (ISINs). The search covered the same time periods as the M&A data, plus three extra years to account for long-term value creation and focused on variables needed to calculate Return on Assets (ROA) and Return on Equity (ROE), along with several control variables.

After merging the cleaned Orbis and Compustat datasets based on ISINs and year, the final sample consists of 527 firms and 1,251 deals with matched firm-level financial data.

Table 2: Unique firms and deals in sample

Merger wave	**Orbis M&A (raw)**	**Orbis M&A (cleaned)**	**Compustat**	**Final merged deals**
Wave 5	2,830 firms (8,284 deals)	2,421 firms (4,180 deals)	11,247	-
Wave 6	10,707 firms (31,949 deals)	8,451 firms (15,432 deals)	32,419	-
Wave 7	16,100 firms (53,138 deals)	14,551 firms (26,308 deals)	105,083	-
Total	29,637 firms (93,371 deals)	25,423 firms (45,920 deals)	148,749	527 firms (1,251 deals)

Note: Compustat records are firm-year observations, while final merged deals represent unique transactions with matched firm-level financial data.

Before proceeding to the core analyses, we first evaluate how our filtering on complete financial data may have skewed the composition of the original deal population. Table 3 reports, for both deals and unique firms, the percentage before filtering (population: n = 45,920 deals), percentage deleted during filtering (deleted: n = 44,669 deals), after filtering (sample: n = 1,251 deals), and the difference in percentage point between the original population and the retained sample.

Table 3: Selection and composition changes by merger wave

Variable	**Category**	**Population**	**Deleted**	**Sample**	**Δ pop–sample (pp)**
Merger wave (deals)	Wave 5	9.10% (4,180)	9.06% (4,046)	10.71% (134)	-1.61%
	Wave 6	33.61% (15,432)	33.51% (14,968)	37.09% (464)	-3.48%
	Wave 7	57.29% (26,308)	57.43% (25,655)	52.20% (653)	5.09%
Merger wave (firms)	Wave 5	9.52% (2,421)	9.46% (2,342)	12.06% (79)	-2.54%
	Wave 6	33.24% (8,451)	33.22% (8,229)	33.89% (222)	-0.65%
	Wave 7	57.24% (14,551)	57.32% (14,197)	54.05% (354)	3.19%

As table 3 shows, the sample differs from the original population in its wave composition. In particular, wave 7 deals and firms are under-represented (+5.09% for deals; +3.19% for firms), whereas waves 5 and 6 are modestly over-represented. These shifts indicate that our requirement for complete post-deal financials selectively excludes a share of wave 7 deals. In order to explain these differences even more, table 4 reports the differences for each year.

Table 4: Selection and composition changes by year

Year	Population	Deleted	Sample	Δ pop–sample (pp)
1997	1.25% (575)	1.26% (565)	0.80% (10)	+0.45%
1998	1.66% (760)	1.65% (738)	1.76% (22)	–0.10%
1999	1.55% (713)	1.55% (694)	1.52% (19)	+0.03%
2000	4.64% (2,132)	4.59% (2,049)	6.63% (83)	–1.99%
2003	5.31% (2,437)	5.30% (2,369)	5.44% (68)	+0.13%
2004	7.06% (3,240)	7.05% (3,149)	7.27% (91)	+0.22%
2005	7.63% (3,504)	7.59% (3,391)	9.03% (113)	–1.44%
2006	6.55% (3,008)	6.51% (2,909)	7.91% (99)	–1.36%
2007	7.06% (3,243)	7.05% (3,150)	7.43% (93)	–0.37%
2010	4.57% (2,098)	4.57% (2,043)	4.40% (55)	+0.17%
2011	4.16% (1,912)	4.09% (1,828)	6.71% (84)	–2.55%
2012	3.73% (1,713)	3.73% (1,665)	3.84% (48)	–0.11%
2013	3.68% (1,688)	3.69% (1,647)	3.28% (41)	+0.40%
2014	4.52% (2,077)	4.48% (1,999)	6.24% (78)	–1.72%
2015	4.84% (2,222)	4.88% (2,180)	3.36% (42)	+1.48%
2016	4.76% (2,188)	4.79% (2,138)	4.00% (50)	–0.23%
2017	4.70% (2,101)	4.70% (2,101)	3.36% (42)	+1.34%
2018	4.64% (2,131)	4.64% (2,073)	4.64% (58)	0.00%
2019	4.25% (1,900)	4.25% (1,900)	3.84% (48)	+0.41%
2020	3.65% (1,676)	3.63% (1,623)	4.24% (53)	+0.41%
2021	5.36% (2,462)	5.39% (2,408)	4.32% (54)	+1.04%
2022	4.46% (2,050)	4.59% (2,050)	0.00% (0)	+4.59%

As table 4 illustrates, the vast majority of deal-years retain similar shares before and after merging, indicating no systematic bias. The only noticeable difference is for the year 2022. This is a direct consequence of our three-year post-merger performance horizon and the fact that FY2025 data fall outside our available window on Compustat. To fully rule out selection bias, we also use a formal chi-square test.

Table 5: Overview formal chi-square test

Level	χ^2	p-value
Merger wave (deals)	13.74	0.001
Merger wave (firms)	5.68	0.058
Deal year	120.17	< 0.01
Country (acquiror)	4,048.74	< 0.01
BvD sector (acquiror)	1,882.93	< 0.01

Table 5 presents the results of formal chi-square tests across multiple dimensions of our sample selection. At the deal level, merger wave composition shifts modestly but significantly after filtering (X2 = 13.74, p = 0.001), whereas unique firm wave mix does not change in a statistically meaningful way (X2 = 5.68, p = 0.058). These results imply that our filtering step has introduced selection bias at the deal-wave level but not among unique firms. A highly significant deviation appears by deal year (X2 = 120.17, $p < 0.01$), which is mostly driven by the exclusion of 2022 transactions that fall outside our three-year post-deal merger performance window. More pronounced selection affects emerge when examining geographic and industry breakdowns. The country level test (X2 = 4,084.74, $p < 0.01$) reveals that North America deals,

particularly those from the U.S. and Canada, are excluded in the final sample, reflecting Compustat Global's incomplete coverage of these jurisdictions in their Compustat Global database. Likewise, the BvD sector test (X2 = 1,882.93, $p < 0.01$) indicates that certain industries experience a disproportionate loss of deals due to limited Compustat availability. Together, these findings confirm that our final sample introduces selection bias by country and sector rather than by merger wave or year. In the main analyses that follow, we address these biases by incorporating a Heckman selection model to correct for any resulting bias in our estimates of long-term post-merger performance.

Having established that our final sample exhibits significant selection bias by year, country, and industry (Table 5), we apply a two-step Heckman correction to adjust for these differences. In the first step we estimate a probit model in which the dependent variable ,Si, is a binary indicator equal to 1 if deal i is included in the post-merger performance sample (i.e., financial data available for deal year and three upcoming years), and 0 otherwise. To ensure purely ex-ante identification, we include only pre-deal characteristics: deal value in USD; a binary indicator for cross-border deals; a set of completed-year dummies from 1993 through 2021 (omitting 2022 because FY2025 transactions lie outside our available window in Compustat); geographic dummies for Europe and Asia-Pacific, while grouping U.S. and Canadian deals under "Other" to reflect Compustat Global's limited North American coverage; and five dummy variables for the largest BvD industry sectors (with all remaining industries serving as the reference category). This first-stage specification converges cleanly (pseudo R2 = 0.222, likelihood-ratio (LLR) $p < 0.001$), and the signs align with theory: larger deals, non-North American transactions, and deals in the better-covered sectors are each significantly more likely to appear in the sample. From the fitted probit model, we compute the inverse Mills ratio, λ_i, for every observation. In the second step, we re-estimate our outcome equation, a three-year ROA and ROE, by ordinary least squares (OLS) on the selected subset, including λ_i as an additional regressor. The positive and highly significant coefficient on the Mills ratio (≈ 0.022, $p \geq 0.05$) confirms that correcting for nonrandom sample inclusion is both necessary and effective for obtaining unbiased estimates of long-term post-merger performance.

Methods

This study employs firm-level panel regressions to test each hypothesis in isolation while controlling for unobserved, time-invariant heterogeneity. In each regression, the dependent variable is a firm's post-merger performance, measured either by return on assets (ROA) or return on equity (ROE), observed in the fiscal year of the acquisition and up to three years thereafter. Specifically, for each acquisition completed by firm i in year t, we observe performance outcomes in year t (the deal year) and in the first, second, and third full fiscal years following the transaction. Denoting $h \in \{0, 1, 2, 3\}$ as the number of years after the acquisition, we thus record

$$\mathrm{ROA}_{i,t+h} \quad \text{and} \quad \mathrm{ROE}_{i,t+h}, \quad h = 0, 1, 2, 3.$$

By stacking these four observations per deal into a panel indexed by $(i,\, t + h)$, we can trace whether any performance premium emerges immediately at $h = 0$ and whether it increases or decreases through $h = 1, 2, 3$.

All models include a standard set of controls for each observation year $t + h$. In particular, the control vector $\mathbf{X}_{i,t+h}$ comprises the natural logarithm of total assets in year $t + h$ (as a proxy for firm size), the mills ratio to correct for selection bias, dummy variables for calendar year, and dummy variables for the country in which the acquiring firm is headquartered. To improve explanatory power of the four models, the calendar year dummy variables and country dummy variables are grouped into categories, as explained in Appendix B. All models share the following baseline structure:

$$\text{Performance}_{i,t+h} \;=\; \beta\,\text{KeyVar}_{i,t} \;+\; \gamma\,\mathbf{X}_{i,t+h} \;+\; \varepsilon_{i,t+h} \tag{1}$$

To determine whether firm-specific intercepts are needed, we first perform an F-test of pooled OLS versus fixed-effects (FE) (the null hypothesis being that all firms share the same intercept). In our data, the F-test yields ($p \geq 0.05$) for all eight outcome variables. This indicates that we do not reject the null hypothesis, and thus there is no statistically significant evidence from this test that fixed-effect intercepts are needed. Consequently, a pooled OLS specification is considered sufficient. Since the F-test never rejects the null hypothesis, we do not proceed to a Hausman test. As a result, all models are estimated by pooled OLS. Standard errors are clustered at the acquirer firm-level to allow for arbitrary within-firm correlation of the regression residuals. Since many acquirers complete multiple deals (possibly across multiple waves) and may exhibit persistent, unobserved characteristics that affect post-merger performance in each deal year. Clustering at firm-level therefore corrects our inference for both serial correlation and heteroscedasticity across deals by the same firm, acknowledging these persistent unobserved characteristics even when their average impact on the intercept is not statistically significant in the F-test.

Model 1. To test whether firms that engaged in M&A during the seventh merger wave exhibit superior post-merger performance relative to those in the fifth (H1a) and sixth (H1b) waves. And to determine how any such "wave 7 premium" evolves over time, we estimate

$$\text{Performance}_{i,t+h} \;=\; \beta_6\,\text{Wave6}_{i,t} \;+\; \beta_7\,\text{Wave7}_{i,t} \;+\; \gamma\,\mathbf{X}_{i,t+h} \;+\; \varepsilon_{i,t+h}, \tag{2}$$

for $h = 0, 1, 2, 3$, with $\text{Performance}_{i,t+h}$ taken alternately as $\text{ROA}_{i,t+h}$ or $\text{ROE}_{i,t+h}$. Here, $\text{Wave6}_{i,t} = 1$ if firm i's acquisition in year t falls in the sixth wave, and $\text{Wave7}_{i,t} = 1$ if it falls in the seventh wave, while the omitted category is the fifth wave (both dummies equal zero). The control vector $\mathbf{X}_{i,t+h}$ includes $\ln(\text{TotalAssets}_{i,t+h})$, year dummies for $t+h$, and country dummies for $t+h$. In each regression, a positive and significant coefficient on β_7 indicates that Wave 7 acquirers outperform Wave 5 acquirers in year $t+h$, thereby supporting H1a. To assess H1b, we perform a Wald linear-constraint test of

$$\beta_7 - \beta_6 \;=\; 0 \quad (\text{alternative: } \beta_7 - \beta_6 > 0),$$

in each horizon's regression. If that test is significant, it indicates that performance in wave 7 also exceeds that in wave 6 at horizon h. By repeating these tests for $h = 0, 1, 2, 3$, we observe whether any wave 7 advantage continues up to three years after the deal.

Model 2. To test whether cross-border M&A in the seventh wave yields greater performance gains than domestic transactions comparing to wave 5 (H2a) and wave 6 (H2b), we estimate the following specification with a cross-border dummy:

$$\begin{aligned} \text{Performance}_{i,t+h} = \;& \beta_5^{\text{CB}}\big(\text{Wave5}_{i,t} \times \text{CrossBorder}_{i,t}\big) \\ & + \beta_6^{\text{CB}}\big(\text{Wave6}_{i,t} \times \text{CrossBorder}_{i,t}\big) \\ & + \beta_7^{\text{CB}}\big(\text{Wave7}_{i,t} \times \text{CrossBorder}_{i,t}\big) \\ & + \gamma\,\mathbf{X}_{i,t+h} + \varepsilon_{i,t+h}\,, \end{aligned} \tag{3}$$

for $h = 0, 1, 2, 3$, with $\text{CrossBorder}_{i,t} = 1$ if firm i completed a cross-border transaction in year t (0 otherwise). The interaction $\text{Wave}k_{i,t} \times \text{CrossBorder}_{i,t}$ is therefore 1 when a cross-border deal occurs in Wave k. The baseline category is a domestic deal in wave 5 (all three interaction terms equal zero). In each horizon, β_7^{CB} measures the performance premium of cross-border deals in wave 7 relative to cross-border deals in wave 5; we test H2a by whether $\beta_7^{\text{CB}} > 0$. To assess H2b, we conduct a Wald linear-constraint test of

$$\beta_7^{\text{CB}} - \beta_6^{\text{CB}} \;=\; 0 \quad (\text{alternative: } \beta_7^{\text{CB}} - \beta_6^{\text{CB}} > 0),$$

in each regression. Significance indicates that cross-border deals in wave 7 outperform those in wave 6 at year $t+h$. By repeating for $h = 0, 1, 2, 3$, we determine whether any cross-border premium endures up to three years post-deal.

Model 3. To test whether the enhanced wave 7 premium is particularly strong for technology and pharmaceutical firms by comparing each industry's cross-industry performance in wave 7 against waves 5 (H3a1 and H3b1) and 6 (H3a2 and H3b2). Specifically, for each $h = 0, 1, 2, 3$ and for ROA and ROE, we estimate:

$$\begin{aligned} \text{Performance}_{i,t+h} = \; & \beta_5^{\text{Tech}}\big(\text{Wave5}_{i,t} \times \text{Tech}_i\big) \\ & + \beta_6^{\text{Tech}}\big(\text{Wave6}_{i,t} \times \text{Tech}_i\big) \\ & + \beta_7^{\text{Tech}}\big(\text{Wave7}_{i,t} \times \text{Tech}_i\big) \\ & + \beta_5^{\text{Pharma}}\big(\text{Wave5}_{i,t} \times \text{Pharma}_i\big) \\ & + \beta_6^{\text{Pharma}}\big(\text{Wave6}_{i,t} \times \text{Pharma}_i\big) \\ & + \beta_7^{\text{Pharma}}\big(\text{Wave7}_{i,t} \times \text{Pharma}_i\big) \\ & + \gamma\, \mathbf{X}_{i,t+h} + \varepsilon_{i,t+h}\,, \end{aligned} \tag{4}$$

where $\text{Tech}_i = 1$ if firm i operates primarily in the technology sector (0 otherwise), and $\text{Pharma}_i = 1$ if firm i operates primarily in the pharmaceutical sector (0 otherwise). The reference group is any non-tech, non-pharma deal in wave 5 (all six interaction terms are zero). In each horizon, a significantly positive β_7^{Tech} supports H3a1 ("wave 7 vs. wave 5 for tech firms"), while a Wald linear-constraint test of

$$\beta_7^{\text{Tech}} - \beta_6^{\text{Tech}} \;=\; 0 \quad (\text{alternative: } \beta_7^{\text{Tech}} - \beta_6^{\text{Tech}} > 0)$$

tests H3a2 ("wave 7 vs. wave 6 for tech firms"). Similarly, $\beta_7^{\text{Pharma}} > 0$ tests H3b1 ("wave 7 vs. wave 5 for pharma firms"), and a Wald linear-constraint test of

$$\beta_7^{\text{Pharma}} - \beta_6^{\text{Pharma}} \;=\; 0 \quad (\text{alternative: } \beta_7^{\text{Pharma}} - \beta_6^{\text{Pharma}} > 0)$$

tests H3b2 ("wave 7 vs. wave 6 for pharma firms"). Repeating these tests for $h = 0, 1, 2, 3$ indicates whether any industry-specific wave 7 premium persists through three years post-deal.

Model 4. To test whether the timing of an acquisition within wave 7 moderates post-merger performance. Specifically, "Early" acquirers (top 20% in deal timing within their wave) are hypothesized to outperform earlier waves (H4a), while "Late" acquirers (bottom 20% in timing within Wave 7) are hypothesized to underperform (H4b). For each acquisition by firm i in year t, define $\text{Early}_{i,t} = 1$ if firm i ranks in the top 20% of deal timing among all deals in its wave, and $\text{Late}_{i,t} = 1$ if it ranks in the bottom 20% (Lin et al., 2023; Xu, 2017). We then estimate, for each $h = 0, 1, 2, 3$ and for ROA and ROE:

$$\begin{aligned} \text{Performance}_{i,t+h} = \; & \beta_5^{\text{ET}}\,(\text{Wave5}_{i,t} \times \text{Early}_{i,t}) \\ & + \beta_6^{\text{ET}}\,(\text{Wave6}_{i,t} \times \text{Early}_{i,t}) \\ & + \beta_7^{\text{ET}}\,(\text{Wave7}_{i,t} \times \text{Early}_{i,t}) \\ & + \beta_5^{\text{LT}}\,(\text{Wave5}_{i,t} \times \text{Late}_{i,t}) \\ & + \beta_6^{\text{LT}}\,(\text{Wave6}_{i,t} \times \text{Late}_{i,t}) \\ & + \beta_7^{\text{LT}}\,(\text{Wave7}_{i,t} \times \text{Late}_{i,t}) \\ & + \gamma\, \mathbf{X}_{i,t+h} + \varepsilon_{i,t+h}. \end{aligned} \tag{5}$$

The baseline category is any deal in wave 5 that is neither "Early" nor "Late" (all six interaction terms are zero). In each horizon, a positive β_7^{ET} supports H4a1 ("Early wave 7 vs. Early wave 5"), and a Wald linear-constraint test of

$$\beta_7^{\mathrm{ET}} - \beta_6^{\mathrm{ET}} \;=\; 0 \quad (\text{alternative: } \beta_7^{\mathrm{ET}} - \beta_6^{\mathrm{ET}} > 0)$$

tests H4a2 ("Early wave 7 vs. Early wave 6"). Likewise, a negative β_7^{LT} supports H4b1 ("Late wave 7 vs. Late wave 5"), and a Wald linear-constraint test of

$$\beta_7^{\mathrm{LT}} - \beta_6^{\mathrm{LT}} \;=\; 0 \quad (\text{alternative: } \beta_7^{\mathrm{LT}} - \beta_6^{\mathrm{LT}} < 0)$$

tests H4b2 ("Late wave 7 vs. Late wave 6"). By estimating these contrasts for $h = 0, 1, 2, 3$ and for both ROA and ROE, we determine whether early entrants maintain a performance advantage (and late entrants a disadvantage) up to three years post-deal.

To ensure our findings are not driven by model specification or measurement choice, we compute variance inflation factors to detect potential multicollinearity among regressors and employ cluster-robust standard errors to address heteroscedasticity and within-firm serial correlation. By structuring our methodology in this way, measuring performance at $h = 0, 1, 2, 3$, including both ROA and ROE as outcomes, and explicitly contrasting wave 7 against waves 5 and 6 for each hypothesis, the analysis provides a transparent and dynamic assessment of how merger wave timing, deal type, industry context, and entry timing influence post-merger value creation over three years following each acquisition.

Results

Table 6 summarizes descriptive statistics for all deals from Orbis M&A on population level, divided by merger wave. The sample includes a total of 2,822 deals spanning the fifth, sixth, and seventh merger wave, allowing for a comparison. The size of M&A transactions, as measured by the natural logarithm of deal value, stays consistent throughout all three waves observed in the population. This holds for both mean and median values.

The total assets of acquiring firms show a comparable dynamic. The mean pre-deal asset size of acquirers declines from $9.6 billion in wave 5 to $8.7 billion in wave 6 but then rises substantially to $13.5 billion in wave 7. The median follows the same trajectory: falling from $3.6 billion to $989 million and increasing again to $1.5 billion. Target firms are consistently smaller than acquirers across all waves but show similar directional trends. The mean total assets of target firms decrease from $2.7 billion in wave 5 to $879 million in wave 6 and rise again to $1.9 billion in wave 7. The median drops from $238 million to $138 million, then increases to $212 million. These U-shaped patterns indicate that the sixth wave included relatively smaller acquirers and targets on average, while the seventh wave saw the return of larger firms to the M&A market. This is also visible in the maximum values of both acquirers and targets, increasing from $54B in wave 5 to $685B in wave 7 for acquirers and $32B in wave 5 to $70B in wave 7 for targets.

Cross-border activity is most prominent in wave 5, where 45 percent of deals involve targets located in a different country than the acquirer. This share declines to 12 percent in wave 6 and increases slightly to 14 percent in wave 7. These results suggest a clear shift from international expansion toward domestic consolidation over time. A different trend is visible for cross-industry transactions, where 54 percent of deals in wave 6 involve acquirers and targets from different industries, compared to 40 percent in wave 5 and 44 percent in wave 7. This reflects moderate variation in diversification motives across merger waves.

Table 6: Descriptive statistics of population.

Wave	Variable	Obs.	Mean	Median	Min	Max	Std. Dev.
Wave 5	ln(Deal Value)	40	5.94	5.88	-0.50	11.41	2.67
	Acquiror Net Profit	40	611.54	125.52	-217.42	4952.00	1097.47
	Acquiror Total Assets	40	9558.31	3609.84	15.67	54470.41	13003.81
	Target Net Profit	40	173.19	3.78	-370.36	2720.00	530.38
	Target Total Assets	40	2666.33	238.07	3.18	32489.00	6054.78
	Cross Border Dummy	40	0.45	0.00	0.00	1.00	0.50
	Cross Industry Dummy	40	0.40	0.00	0.00	1.00	0.50
Wave 6	ln(Deal Value)	910	5.37	5.43	-1.47	11.11	2.04
	Acquiror Net Profit	910	565.50	36.66	-6469.00	16720.00	1761.51
	Acquiror Total Assets	910	8714.81	989.41	0.00	673321.00	30740.29
	Target Net Profit	910	25.79	0.97	-6469.00	3294.00	367.46
	Target Total Assets	910	879.05	138.15	0.00	56553.00	3062.70
	Cross Border Dummy	910	0.12	0.00	0.00	1.00	0.33
	Cross Industry Dummy	910	0.54	1.00	0.00	1.00	0.50
Wave 7	ln(Deal Value)	1872	5.52	5.75	-8.26	11.60	2.53
	Acquiror Net Profit	1872	777.91	25.64	-9756.00	61271.00	3135.27
	Acquiror Total Assets	1872	13476.21	1539.63	0.00	684999.00	37848.75
	Target Net Profit	1872	23.10	-0.29	-7892.78	5247.00	445.70
	Target Total Assets	1872	1910.39	212.40	0.00	70191.00	5920.07
	Cross Border Dummy	1872	0.14	0.00	0.00	1.00	0.35
	Cross Industry Dummy	1872	0.44	0.00	0.00	1.00	0.50
Total	ln(Deal Value)	2822	5.48	5.63	-8.26	11.60	2.39
	Acquiror Net Profit	2822	707.06	31.30	-9756.00	61271.00	2747.00
	Acquiror Total Assets	2822	11885.29	1355.67	0.00	684999.00	35523.78
	Target Net Profit	2822	26.09	-0.02	-7892.78	5247.00	423.63
	Target Total Assets	2822	1588.53	185.85	0.00	70191.00	5198.24
	Cross Border Dummy	2822	0.14	0.00	0.00	1.00	0.35
	Cross Industry Dummy	2822	0.47	0.00	0.00	1.00	0.50

Table 7 summarizes descriptive statistics for all deals from Orbis M&A merged with Compustat data on sample level, divided by merger wave. The sample includes a total of 1,251 deals spanning the fifth, sixth, and seventh merger wave, allowing for a comparison.

The table reports both immediate and post-merger performance measures (ROE and ROA) alongside deal and firm characteristics. ROE at the deal date is constant for wave 5 and wave 6 but decreases slightly in wave 7. This also holds for the median value of ROE at the deal date. Looking at post-merger ROE wave 5 stands out as the most resilient in the long term, managing to regain ROE by year three. Wave 6 performs the worst, with sustained negative mean ROE after two and three years, indicating poor long-term value creation. However, it is noteworthy that despite these negative means, the median ROE values in wave 6 remain positive throughout and are in fact the highest of all waves, suggesting that the observed decline is largely driven by a subset of extreme under-performers, while the typical firm maintained positive equity returns. Wave 7 shows moderate underperformance, with a partial bounce back in year three. ROA at the deal date is stable, with both mean and median values showing minimal variation across all three waves. Looking at post-merger ROA, wave 5 maintains stable performance over the three-year period, with median values holding steady and only slight shifts in the mean. Wave 6 performs best, showing gradual decline of mean values over the three years. Nevertheless, median values remain constant and are the highest of all three waves. Wave 7 shows decline in the first two years and a slight bounce back in year three showing a similar pattern as ROE.

The size of the M&A transactions, captured as the natural logarithm of deal value, stays consistent through all three waves observed in the sample. This holds for both mean and median values.

Cross-border and cross-industry patterns in the sample mirror the overall population. Cross-border deals account for 72% in wave 5 but decrease to 62% in wave 6 and further to 61% in wave 7, suggesting a shift toward more domestic-focused transactions. Cross-industry deals are most common in wave 6 (58%), compared to 64% in wave 5 and 58% in wave 7, indicating some variation in diversification motives across waves but without a clear directional trend.

Table 7: Descriptive statistics of merged sample from Orbis M&A and Compustat.

Wave	Variable	Obs.	Mean	Median	Min	Max	Std. Dev.
Wave 5	ROE_t	134	0.18	0.14	-0.23	1.77	0.25
	ROE_t+1	134	0.07	0.12	-6.03	1.30	0.58
	ROE_t+2	134	0.07	0.10	-6.03	14.00	1.56
	ROE_t+3	134	0.16	0.11	-6.03	14.00	2.44
	ROA_t	134	0.04	0.03	-0.10	0.25	0.06
	ROA_t+1	134	0.03	0.02	-0.18	0.25	0.06
	ROA_t+2	134	0.02	0.01	-0.38	0.41	0.09
	ROA_t+3	134	0.01	0.02	-0.41	0.34	0.10
	log(Deal Value)	134	17.20	21.19	1.61	23.01	7.03
	Cross Country Dummy	134	0.72	1.00	0.00	1.00	0.45
	Cross Industry Dummy	134	0.64	1.00	0.00	1.00	0.48
Wave 6	ROE_t	464	0.19	0.16	-0.48	4.57	0.33
	ROE_t+1	464	0.14	0.16	-41.33	10.62	2.08
	ROE_t+2	464	-0.25	0.14	-41.33	13.52	4.36
	ROE_t+3	464	-0.11	0.13	-41.33	13.52	3.48
	ROA_t	464	0.05	0.04	-0.18	0.34	0.06
	ROA_t+1	464	0.05	0.04	-1.78	0.37	0.12
	ROA_t+2	464	0.04	0.04	-0.96	0.40	0.09
	ROA_t+3	464	0.03	0.04	-2.54	0.22	0.15
	log(Deal Value)	464	17.44	21.30	-3.81	23.02	7.34
	Cross Country Dummy	464	0.62	1.00	0.00	1.00	0.49
	Cross Industry Dummy	464	0.58	1.00	0.00	1.00	0.49
Wave 7	ROE_t	653	0.15	0.12	-0.56	5.17	0.30
	ROE_t+1	653	0.12	0.11	-12.36	17.60	0.88
	ROE_t+2	653	0.05	0.10	-22.53	1.40	0.95
	ROE_t+3	653	0.10	0.09	-3.30	7.99	0.42
	ROA_t	653	0.05	0.040	-0.22	0.31	0.050
	ROA_t+1	653	0.04	0.04	-0.46	0.32	0.06
	ROA_t+2	653	0.03	0.03	-0.46	0.39	0.07
	ROA_t+3	653	0.04	0.03	-0.70	0.42	0.07
	log(Deal Value)	653	16.38	21.05	-6.54	23.02	7.34
	Cross Country Dummy	653	0.61	1.00	0.00	1.00	0.49
	Cross Industry Dummy	653	0.57	1.00	0.00	1.00	0.50
Total	ROE_t	1251	0.17	0.14	-0.56	5.17	0.31
	ROE_t+1	1251	0.12	0.13	-41.33	17.6	1.43
	ROE_t+2	1251	-0.06	0.11	-41.33	14.0	2.79
	ROE_t+3	1251	0.03	0.11	-41.33	14.0	2.28
	ROA_t	1251	0.05	0.04	-0.22	0.34	0.05
	ROA_t+1	1251	0.04	0.04	-1.78	0.37	0.09
	ROA_t+2	1251	0.04	0.03	-0.96	0.41	0.08
	ROA_t+3	1251	0.03	0.03	-2.54	0.42	0.11
	log(Deal Value)	1251	16.86	21.17	-6.54	23.02	7.33
	Cross Country Dummy	1251	0.62	1.00	0.00	1.00	0.48
	Cross Industry Dummy	1251	0.58	1.00	0.00	1.00	0.49

Table 8 reports the OLS estimates of post-merger performance for Model 1, in which the dependent variable is ROA on the left side, and ROE on the right side alongside controls for

firm size (ln Assets), inverse Mills ratio, year-bucket dummies, and region dummies (Europe, Asia-Pacific, Other). The omitted (reference) group is the set of firms that completed an M&A in wave 5 (all four h-categories). Standard errors are clustered at the acquiror firm-level. In this ROA specification, the overall fit is extremely low ($R^2 = 0.007$, adjusted $R^2 = 0.005$), and the joint F-statistic for the entire regression is 0.207 ($p = 0.996$), indicating that the model is not statistically significant. To test H1a, whether wave 7 acquirers outperform wave 5 acquirers, we jointly impose the four restrictions:

$$\text{Wave7}_h0 = \text{Wave7}_h1 = \text{Wave7}_h2 = \text{Wave7}_h3 = 0$$

The resulting Wald linear-constraint test yields $F = 0.498$ ($p = 0.738$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is therefore no evidence that wave 7 firms achieve higher ROA than wave 5 firms. To test H1b, whether wave 7 acquirers outperform wave 6 acquirers, we jointly impose the four simultaneous restrictions:

$$\text{Wave7}_h k = \text{Wave6}_h k \quad \text{for } k = 0, 1, 2, 3$$

The resulting Wald linear-constraint test also yields $F = 0.503$ ($p = 0.734$). Since this p-value is likewise well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that wave 7 firms achieve higher ROA than wave 6 firms.

In the ROE specification, overall fit remains negligible ($R^2 = 0.009$, adjusted $R^2 = 0.007$), and the joint F-statistic for the regression is 0.408 ($p = 0.943$), indicating that model explanatory power is not statistically significant. To test H1a, whether wave 7 acquirers outperform wave 5 acquirers, we impose the four restrictions:

$$\text{Wave7}_h0 = \text{Wave7}_h1 = \text{Wave7}_h2 = \text{Wave7}_h3 = 0$$

The resulting Wald linear-constraint test yields $F = 0.411$ ($p = 0.801$). Because this p-value is well above conventional thresholds, we cannot reject the null hypothesis; thus, there is no evidence that wave 7 firms achieve higher ROE than wave 5 firms. To test H1b, whether wave 7 acquirers outperform wave 6 acquirers, we impose the four simultaneous restrictions:

$$\text{Wave7}_h k = \text{Wave6}_h k \quad \text{for } k = 0, 1, 2, 3$$

The resulting Wald linear-constraint test yields $F = 0.597$ ($p = 0.665$). Since this p-value is also well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that wave 7 firms achieve higher ROE than wave 6 firms.

Table 8: OLS regression results (Model 1, H1a & H1b).

	Model 1 (ROA)			Model 1 (ROE)		
Variables	**Coef**	**Std. Err.**	**p-value**	**Coef**	**Std. Err.**	**p-value**
Wave 6 at h0	-0.256	0.210	0.222	-0.777	0.729	0.287
Wave 6 at h1	-0.064	0.052	0.219	-0.211	0.157	0.178
Wave 6 at h2	0.010	0.007	0.166	0.019	0.035	0.585
Wave 6 at h3	-0.044	0.039	0.259	-0.078	0.227	0.732
Wave 7 at h0	0.002	0.002	0.264	-0.001	0.036	0.985
Wave 7 at h1	-0.012	0.015	0.397	-0.008	0.051	0.878
Wave 7 at h2	-0.003	0.002	0.196	-0.033	0.037	0.375
Wave 7 at h3	-0.012	0.012	0.331	-0.105	0.253	0.679
ln(Assets)	9.844E+12	7.583E+12	0.194	5.268E+13	3.269E+13	0.107
Mills Ratio	-7.992E+12	8.035E+12	0.320	-8.795E+13	1.272E+14	0.489
Year 2004-2007	-2.248E+12	3.131E+12	0.473	4.909E+13	2.143E+14	0.819
Year 2008-2010	-7.182E+13	5.152E+13	0.163	-6.127E+14	6.166E+14	0.320
Year 2011-2013	2.728E+12	4.517E+12	0.546	-7.005E+12	2.149E+14	0.974
Year 2014-2017	2.587E+12	5.042E+12	0.608	1.930E+11	2.321E+14	0.999
Year 2018-2021	3.423E+12	5.582E+12	0.540	-3.397E+13	2.172E+14	0.876
Year 2022-2024	-3.665E+12	5.972E+12	0.539	-2.895E+13	2.159E+14	0.893
Europe region	6.714E+13	5.867E+13	0.252	7.248E+13	1.634E+14	0.657
Other region	2.216E+13	5.941E+13	0.709	3.921E+13	2.084E+14	0.851
Constant	-1.480E+14	1.211E+14	0.222	-4.895E+14	3.797E+14	0.197
R-Squared	0.007			0.009		
Adj. R-Squared	0.005			0.007		
F-statistic	0.207			0.408		
Prob (F-statistic)	0.996			0.943		
N = 5004						

Table 9 reports the OLS estimates of post-merger performance for Model 2, in which the dependent variable is ROA on the left side, and ROE on the right side. The key regressors are the three "cross-border x wave" dummies (Wave5_CB, Wave6_CB, and Wave7_CB), alongside controls for firm size (ln Assets), inverse Mills ratio, year-bucket dummies, and region dummies (Europe, Asia-Pacific, Other). The omitted (reference) category is domestic acquirers in wave 5 (i.e., Wave5 = 1, and Cross-border = 0). Standard errors are clustered at the acquirer firm-level. The overall R^2 is 0.007 and the joint F-statistic is 0.207 ($p = 0.996$), indicating that the model as a whole is not statistically significant. To test H2a, whether cross-border deals in wave 7 outperform cross-border deals in wave 5 when comparing to domestic deals, we jointly impose the linear restriction:

$$\text{Wave7\_CB} = \text{Wave5\_CB}$$

The resulting Wald linear-constraint test yields $F = 1.658$ ($p = 0.199$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that cross-border deals in wave 7 achieve a higher ROA than cross-border deals in wave 5. To test H2b, whether cross-border deals in wave 7 outperform cross-border deals in wave 6 when comparing to domestic deals, we jointly impose the linear restriction:

$$\text{Wave7\_CB} = \text{Wave6\_CB}$$

The resulting Wald linear-constraint test yields $F = 1.412$ ($p = 0.235$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that cross-border deals in wave 7 achieve a higher ROA than cross-border deals in wave 6.

In the ROE specification, the overall R^2 is 0.009 and the joint F-statistic is 0.408 ($p = 0.943$), indicating that the model as a whole is not statistically significant. To test H2a, whether cross-border deals in wave 7 outperform cross-border deals in wave 5 when comparing to domestic deals, we jointly impose the linear restriction:

$$\text{Wave7\_CB} = \text{Wave5\_CB}$$

The resulting Wald linear-constraint test yields $F = 2.012$ ($p = 0.157$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that cross-border deals in wave 7 achieve a higher ROE than cross-border deals in wave 5. To test H2b, whether cross-border deals in wave 7 outperform cross-border deals in wave 6 when comparing to domestic deals, we jointly impose the linear restriction:

$$\text{Wave7\_CB} = \text{Wave6\_CB}$$

The resulting Wald linear-constraint test yields $F = 2.019$ ($p = 0.156$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that cross-border deals in wave 7 achieve a higher ROE than cross-border deals in wave 6.

Table 9: OLS regression results (Model 2, H2a & H2b).

	Model 1 (ROA)			Model 1 (ROE)		
Variables	**Coef**	**Std. Err.**	**p-value**	**Coef**	**Std. Err.**	**p-value**
Wave 5 CB	-0.218	0.174	0.211	-0.821	0.554	0.138
Wave 6 CB	0.121	0.102	0.235	0.443	0.308	0.150
Wave 7 CB	-0.085	0.071	0.235	-0.298	0.215	0.165
ln(Assets)	9.84E+12	7.58E+12	0.194	5.268E+13	3.268E+13	0.107
Mills Ratio	-7.99E+12	8.03E+12	0.320	-8.795E+13	1.271E+14	0.489
Year 2004-2007	-2.25E+12	3.13E+12	0.473	4.909E+13	2.142E+14	0.819
Year 2008-2010	-7.18E+13	5.15E+13	0.163	-6.127E+14	6.163E+14	0.320
Year 2011-2013	2.73E+12	4.51E+12	0.546	-7.005E+12	2.148E+14	0.974
Year 2014-2017	2.59E+12	5.04E+12	0.608	1.930E+11	2.320E+14	0.999
Year 2018-2021	3.42E+12	5.58E+12	0.540	-3.397E+13	2.171E+14	0.876
Year 2022-2024	-3.66E+12	5.97E+12	0.539	-2.895E+13	2.157E+14	0.893
Europe region	6.71E+13	5.86E+13	0.252	7.248E+13	1.633E+14	0.657
Other region	2.22E+13	5.94E+13	0.709	3.921E+13	2.083E+14	0.851
Constant	-1.480E+14	1.211E+14	0.221	-4.895E+14	3.795E+14	0.197
R-Squared	0.007			0.009		
Adj. R-Squared	0.005			0.007		
F-statistic	0.207			0.408		
Prob (F-statistic)	0.996			0.943		
N = 5004						

Table 10 reports the OLS estimates of post-merger performance for Model 3, in which the dependent variable is ROA on the left side, and ROE on the right side. The key regressors are the six "wave x industry" dummies (Wave5_Tech, Wave6_Tech, Wave7_Tech, Wave5_Pharma, Wave6_Pharma, Wave7_Pharma), alongside controls for firm size (ln Assets), inverse Mills ratio, year-bucket dummies, and region dummies (Europe, Asia-Pacific, Other). The omitted (reference) category is deals in wave 5 among firms that are neither in the technology nor pharmaceutical sector (i.e., Wave5 = 1, Tech = 0, and Pharma = 0). Standard errors are clustered at the acquirer firm-level. The overall R^2 is 0.007 and the joint F-statistic is 0.207 ($p = 0.996$), indicating that the model as a whole is not statistically significant. To test H3a1, whether deals

in the technology sector in wave 7 outperform deals in the technology sector in wave 5, we jointly impose the linear restriction:

$$\text{Wave7\_Tech} = \text{Wave5\_Tech}$$

The resulting Wald linear-constraint test yields $F = 1.471$ ($p = 0.226$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that technology deals in wave 7 achieve a higher ROA than technology deals in wave 5. To test H3a2, whether deals in the technology sector in wave 7 outperform deals in the technology sector in wave 6, we jointly impose the linear restriction:

$$\text{Wave7\_Tech} = \text{Wave6\_Tech}$$

The resulting Wald linear-constraint test yields $F = 1.432$ ($p = 0.232$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that technology deals in wave 7 achieve a higher ROA than technology deals in wave 6. To test H3b1, whether deals in the pharmaceutical sector in wave 7 outperform deals in the pharmaceutical sector in wave 5, we jointly impose the linear restriction:

$$\text{Wave7\_Pharma} = \text{Wave5\_Pharma}$$

The resulting Wald linear-constraint test yields $F = 1.964$ ($p = 0.162$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that pharmaceutical deals in wave 7 achieve a higher ROA than pharmaceutical deals in wave 5. To test H3b2, whether deals in the pharmaceutical sector in wave 7 outperform deals in the pharmaceutical sector in wave 6, we jointly impose the linear restriction:

$$\text{Wave7\_Pharma} = \text{Wave6\_Pharma}$$

The resulting Wald linear-constraint test yields $F = 0.264$ ($p = 0.608$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that pharmaceutical deals in wave 7 achieve a higher ROA than pharmaceutical deals in wave 6.

In the ROE specification, the overall R^2 is 0.009 and the joint F-statistic is 0.408 ($p = 0.943$), indicating that the model as a whole is not statistically significant. To test H3a1, whether deals in the technology sector in wave 7 outperform deals in the technology sector in wave 5, we jointly impose the linear restriction:

$$\text{Wave7\_Tech} = \text{Wave5\_Tech}$$

The resulting Wald linear-constraint test yields $F = 1.901$ ($p = 0.169$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that technology deals in wave 7 achieve a higher ROE than technology deals in wave 5. To test H3a2, whether deals in the technology sector in wave 7 outperform deals in the technology sector in wave 6, we jointly impose the linear restriction:

$$\text{Wave7\_Tech} = \text{Wave6\_Tech}$$

The resulting Wald linear-constraint test yields $F = 1.459$ ($p = 0.228$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that technology deals in wave 7 achieve a higher ROE than technology deals in wave 6. To test H3b1, whether deals in the pharmaceutical sector in wave 7 outperform deals in the pharmaceutical sector in wave 5, we jointly impose the linear restriction:

$$\text{Wave7\_Pharma} = \text{Wave5\_Pharma}$$

The resulting Wald linear-constraint test yields $F = 2.022$ ($p = 0.156$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that pharmaceutical deals in wave 7 achieve a higher ROE than pharmaceutical deals in wave 5. To test H3b2, whether deals in the pharmaceutical sector in wave 7 outperform deals in the pharmaceutical sector in wave 6, we jointly impose the linear restriction:

$$\text{Wave7\_Pharma} = \text{Wave6\_Pharma}$$

The resulting Wald linear-constraint test yields $F = 0.081$ ($p = 0.775$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that pharmaceutical deals in wave 7 achieve a higher ROE than pharmaceutical deals in wave 6.

Table 10: OLS regression results (Model 3, H3a1, H3a2, H3b1 & H3b2).

	Model 1 (ROA)			Model 1 (ROE)		
Variables	**Coef**	**Std. Err.**	**p-value**	**Coef**	**Std. Err.**	**p-value**
Wave 5 Tech	-0.228	0.188	0.225	-0.787	0.553	0.154
Wave 6 Tech	-0.044	0.038	0.246	-0.114	0.108	0.291
Wave 7 Tech	0.115	0.095	0.226	0.336	0.266	0.207
Wave 5 Pharma	0.037	0.029	0.209	0.104	0.125	0.403
Wave 6 Pharma	-0.023	0.023	0.315	-0.063	0.135	0.643
Wave 7 Pharma	-0.010	0.011	0.371	-0.133	0.153	0.385
ln(Assets)	9.844E+12	7.582E+12	0.194	5.268E+13	3.269E+13	0.107
Mills Ratio	-7.992E+12	8.034E+12	0.320	-8.795E+13	1.271E+14	0.489
Year 2004-2007	-2.248E+12	3.131E+12	0.473	4.909E+13	2.142E+14	0.819
Year 2008-2010	-7.182E+13	5.151E+13	0.163	-6.127E+14	6.164E+14	0.320
Year 2011-2013	2.728E+12	4.516E+12	0.546	-7.005E+12	2.149E+14	0.974
Year 2014-2017	2.587E+12	5.041E+12	0.608	1.930E+11	2.320E+14	0.999
Year 2018-2021	3.423E+12	5.581E+12	0.540	-3.397E+13	2.171E+14	0.876
Year 2022-2024	-3.665E+12	5.971E+12	0.539	-2.895E+13	2.158E+14	0.893
Europe region	6.714E+13	5.866E+13	0.252	7.248E+13	1.633E+14	0.657
Other region	2.216E+13	5.940E+13	0.709	3.921E+13	2.083E+14	0.851
Constant	-1.480E+14	1.211E+14	0.222	-4.895E+14	3.796E+14	0.197
R-Squared	0.007			0.009		
Adj. R-Squared	0.005			0.007		
F-statistic	0.207			0.408		
Prob (F-statistic)	0.996			0.943		
N = 5004						

Table 11 reports the OLS estimates of post-merger performance for Model 4, in which the dependent variable is ROA on the left side, and ROE on the right side. The key regressors are the six "wave × timing" interaction dummies (Wave5_Early, Wave6_Early, Wave7_Early, Wave5_Late, Wave6_Late, Wave7_Late), alongside controls for firm size (ln Assets), inverse Mills ratio, year-bucket dummies, and region dummies (Europe and Other, with Asia-Pacific absorbed into the reference group "Other"). The omitted (reference) category is deals in wave 5 that are neither in the top twenty percent of early deals nor in the bottom twenty percent of late deals (i.e., Wave5 = 1, Early = 0, Late = 0). Standard errors are clustered at the acquirer firm level. The overall R^2 is 0.007 and the F-statistic is 0.207 ($p = 0.996$), indicating that Model 4 as a whole is not statistically significant. To test H4a1, whether "early" acquirers in wave 7 outperform "early" acquirers in wave 5, we impose the linear restriction:

$$\text{Wave7\_Early} = \text{Wave5\_Early}$$

The resulting Wald linear-constraint test yields $F = 1.436$ ($p = 0.231$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that early entrants in wave 7 achieve a higher ROA than early entrants in wave 5. To test H4a2, whether "early" acquirers in wave 7 outperform "early" acquirers in wave 6, we impose the linear restriction:

$$\text{Wave7\_Early} = \text{Wave6\_Early}$$

The resulting Wald linear-constraint test yields $F = 1.454$ ($p = 0.228$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that early entrants in wave 7 achieve a higher ROA than early entrants in wave 6. To test H4b1, whether "late" acquirers in wave 7 underperform "late" acquirers in wave 5, we impose the linear restriction:

$$\text{Wave7\_Late} = \text{Wave5\_Late}$$

The resulting Wald linear-constraint test yields $F = 0.669$ ($p = 0.414$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that late entrants in wave 7 achieve a lower ROA than late entrants in wave 5. To test H4b2, whether "late" acquirers in wave 7 underperform "late" acquirers in wave 6, we impose the linear restriction:

$$\text{Wave7\_Late} = \text{Wave6\_Late}$$

The resulting Wald linear-constraint test yields $F = 1.004$ ($p = 0.317$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that late entrants in wave 7 achieve a lower ROA than late entrants in wave 6.

In the ROE specification, the overall R^2 is 0.007 and the F-statistic is 0.207 ($p = 0.996$), indicating that Model 4 as a whole is not statistically significant. To test H4a1, whether "early" acquirers in wave 7 outperform "early" acquirers in wave 5, we impose the linear restriction:

$$\text{Wave7\_Early} = \text{Wave5\_Early}$$

The resulting Wald linear-constraint test yields $F = 1.757$ ($p = 0.186$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that early entrants in wave 7 achieve a higher ROE than early entrants in wave 5. To test H4a2, whether "early" acquirers in wave 7 outperform "early" acquirers in wave 6, we impose the linear restriction:

$$\text{Wave7\_Early} = \text{Wave6\_Early}$$

The resulting Wald linear-constraint test yields $F = 1.571$ ($p = 0.211$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that early entrants in wave 7 achieve a higher ROE than early entrants in wave 6. To test H4b1, whether "late" acquirers in wave 7 underperform "late" acquirers in wave 5, we impose the linear restriction:

$$\text{Wave7\_Late} = \text{Wave5\_Late}$$

The resulting Wald linear-constraint test yields $F = 0.020$ ($p = 0.888$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that late entrants in wave 7 achieve a lower ROE than late entrants in wave 5. To test H4b2,

whether "late" acquirers in wave 7 underperform "late" acquirers in wave 6, we impose the linear restriction:

$$\text{Wave7\_Late} = \text{Wave6\_Late}$$

The resulting Wald linear-constraint test yields $F = 0.515$ ($p = 0.473$). Since this p-value is well above conventional thresholds, we cannot reject the null hypothesis; there is no evidence that late entrants in wave 7 achieve a lower ROE than late entrants in wave 6.

Table 11: OLS regression results (Model 4, H4a1, H4a2, H4b1 & H4b2).

	Model 1 (ROA)			Model 1 (ROE)		
Variables	**Coef**	**Std. Err.**	**p-value**	**Coef**	**Std. Err.**	**p-value**
Wave 5 Early	0.209	0.172	0.226	0.651	0.577	0.259
Wave 6 Early	0.042	0.033	0.209	0.091	0.198	0.645
Wave 7 Early	-0.013	0.014	0.329	-0.084	0.145	0.560
Wave 5 Late	-0.021	0.021	0.327	-0.061	0.066	0.356
Wave 6 Late	0.057	0.058	0.330	0.147	0.274	0.593
Wave 7 Late	-0.011	0.010	0.251	-0.054	0.038	0.157
ln(Assets)	9.844E+12	7.582E+12	0.194	5.268E+13	3.269E+13	0.107
Mills Ratio	-7.992E+12	8.034E+12	0.320	-8.795E+13	1.271E+14	0.489
Year 2004-2007	-2.248E+12	3.131E+12	0.473	4.909E+13	2.142E+14	0.819
Year 2008-2010	-7.182E+13	5.151E+13	0.163	-6.127E+14	6.164E+14	0.320
Year 2011-2013	2.728E+12	4.516E+12	0.546	-7.005E+12	2.149E+14	0.974
Year 2014-2017	2.587E+12	5.041E+12	0.608	1.930E+11	2.320E+14	0.999
Year 2018-2021	3.423E+12	5.581E+12	0.540	-3.397E+13	2.171E+14	0.876
Year 2022-2024	-3.665E+12	5.971E+12	0.539	-2.895E+13	2.158E+14	0.893
Europe region	6.714E+13	5.866E+13	0.252	7.248E+13	1.633E+14	0.657
Other region	2.216E+13	5.940E+13	0.709	3.921E+13	2.083E+14	0.851
Constant	-1.480E+14	1.211E+14	0.222	-4.895E+14	3.796E+14	0.197
R-Squared	0.007			0.009		
Adj. R-Squared	0.005			0.007		
F-statistic	0.207			0.408		
Prob (F-statistic)	0.996			0.943		
N = 5004						

As a final robustness check, we computed variance-inflation factors for all continuous and dummy regressors in each of the four pooled-OLS specifications. Aside from the intercept (which by construction shows a high VIF), every substantive regressor exhibits a VIF below 3.5. This is well under the usual thresholds of 5 or 10 (Hair et al., 2010; O'Brien, 2007). This confirms that multicollinearity is not materially inflating our standard errors or biasing coefficient estimates. Full VIFs are shown in Table 12 as reported in Appendix C.

Discussion

This study set out to investigate how mergers and acquisitions (M&As) influence long-term firm value creation across the fifth, sixth, and seventh merger waves. Contrary to expectations, the empirical results provide no statistically significant evidence that firms acquiring during the seventh wave outperform those from earlier waves in terms of ROA or ROE.

The existing literature on post-merger performance presents a dual perspective. On one hand, it broadly acknowledges the inherent complexities and integration challenges in achieving successful outcomes following M&A activities, particularly when involving digital transformation and cross-border acquisitions (Fuad & Gaur, 2018; Lin et al., 2023; Xu, 2017). These studies consistently highlight difficulties in realizing anticipated synergies due to integration complexities and regulatory challenges. On the other hand, several scholars argue that the seventh merger wave, characterized by its strategic emphasis on digital capabilities and sustainability, should theoretically outperform previous waves due to better strategic alignment and sophisticated integration practices (Ching, 2019; Palm et al., 2023; Xu, 2017).

Although our estimates are not statistically different across waves, the overall pattern aligns with the view that integration complexity can erode the very advantages firms seek through digital, sustainability, or capability-driven deals. At the same time, the absence of any positive ROA/ROE premium directly challenges the literature's more optimistic claim that the seventh wave's strategic emphasis alone guarantees superior outcomes. Therefore, this research contributes to the ongoing debate by underscoring that despite improved strategic alignment and sophistication in deal-making, the expected benefits are contingent upon effectively addressing integration challenges, regulatory barriers, and industry-specific dynamics.

The differences between this study's results and previous research are primarily attributed to methodological and theoretical divergences. Many earlier studies of long-term post-merger performance rely on cumulative abnormal returns using CAPM (Cho & Chung, 2022; Martynova & Renneboog, 2008). In contrast, this paper employs accounting-based metrics (ROA and ROE) over multi-year horizons, which more directly capture operating performance unconfounded by market volatility.

Although we did not observe statistically significant ROA or ROE gains in the seventh wave, the consistent absence of a premium suggests that strategic intent by itself may be insufficient for long-term value creation. Our results imply that robust integration management, exhaustive due diligence, and sufficient absorptive capacity are likely necessary conditions for translating ambitious strategic goals into measurable financial outcomes. Hence, managers must adopt an integrated approach, balancing ambitious strategic goals with realistic and comprehensive execution strategies to navigate the complexities inherent in modern M&A activities.

Limitations

This study comes with limitations that future research could address. First, by relying exclusively on ROA and ROE to gauge long-term value creation, this study may overlook other facets of post-merger performance, such as changes in cost-of-capital, cash-flow stability, or the development of intangible assets that event-study research and comprehensive accounting analyses often capture (Abuzaid et al., 2024; Haleblian et al., 2009). For instance, cumulative abnormal returns under CAPM incorporate market expectations about risk and growth that accounting ratios might miss.

Second, the sample includes only those deals for which complete multi-year Compustat Global data are available. As Cho and Chung (2022) note, such filtering may bias the results toward more transparent or better-performing acquirers. To correct for the resulting selection bias, an inverse Mills ratio was incorporated via a Heckman selection model. Nevertheless, because Compustat Global omits North American transactions, all U.S. and Canadian deals are excluded, thereby constraining the generalizability of findings to truly global M&A patterns.

Third, deal-level integration covariates are absent, despite evidence that these factors influence long-term outcomes (Garfinkel & Hankins, 2011; McCarthy, 2011). Their absence limits the degree to which integration quality can be controlled for, although it does increase the size of the analyzable deal sample.

Fourth, all four of our regression models explain under one percent of the variation in post-merger ROA and ROE and fail the joint F-test. Readers should bear in mind that our wave and cross-border dummies capture only a tiny fraction of true performance drivers. Future work might integrate richer deal-level or market-based variables to boost explanatory power.

Fifth, while industry- and year-dummies help isolate the impact of merger-wave participation from unobserved time-invariant heterogeneity and macro shocks, this approach cannot fully resolve potential endogeneity between wave timing and unmeasured firm dynamics.

Finally, by focusing on the fifth through seventh U.S. merger waves, the analysis leaves open the question of whether these patterns extend to earlier waves or to other jurisdictions. Consequently, the null ROA and ROE differences observed for seventh-wave acquirers should be interpreted as context-specific findings rather than a universal rule.

Implications

Academic implications and future research

This study has provided contributions to the field of strategy, in general, but also more specific sets of theories, as described in the Discussion. Building on the contributions and limitations identified above, this study underscores the importance of expanding both variable scope and data coverage in future M&A research. First, incorporating a richer set of deal-level covariates would provide a broader perspective and substantially increase the explanatory power of regression models. Second, obtaining access to a truly global transaction database (one that includes North-American deals alongside those in Europe, Asia, and emerging markets) and richer firm-year financial information would allow researchers to assemble a larger, more representative sample. Such a database would enhance the generalizability of findings across waves, industries, and jurisdictions. By combining these methodological improvements future studies can more definitively assess the conditions under which strategic intent translates into long-term post-merger value creation.

Managerial and practical implications

This study offers some relevant findings for managers and practitioners. Although no long-term ROA or ROE premium was observed for seventh-wave acquirers and results were not significant. This pattern, consistent with prior studies, suggests that strategic intent alone may be insufficient to secure superior financial outcomes. Executives should therefore institutionalize dedicated integration governance structures early in the transaction lifecycle. This disciplined approach to integration planning directly addresses the execution shortfalls that our results and the broader literature identify as the principal impediment to realizing strategic synergies.

Moreover, practitioners should extend their performance management systems beyond traditional event-study metrics to incorporate rigorous, multi-year operational KPIs. In light of our finding that market-based expectations may diverge from realized accounting performance, firms are advised to monitor indicators such as ROA, ROE, free-cash-flow variance, and realized cost synergies for at least three years post-deal. Embedding these metrics in periodic integration reviews enables leadership to detect and remediate divergence from forecasted synergies, thereby safeguarding the transaction's long-run economic rationale.

Finally, because seventh-wave deals often involve complex technology integrations and diverse regulatory requirements, firms need to match each transaction with the right internal skills and teams. Managers should review their organization's strengths to make sure they are prepared for the work each deal will entail. When deal size and complexity are balanced by adequate integration staff and clear decision structures, companies are far more likely to turn strategic plans into real, lasting improvements in financial performance.

Conclusion

This study set out to examine how mergers and acquisitions (M&As) influence long-term firm value creation across the fifth, sixth, and seventh merger waves. Based on a panel dataset combining Orbis M&A and Compustat financials, post-merger performance was measured using return on assets (ROA) and return on equity (ROE), with firm-level and contextual controls applied throughout.

The findings provide no statistically significant evidence that firms engaging in M&As during the seventh merger wave outperformed those from the fifth or sixth wave in terms of long-term ROA or ROE. Consequently, hypotheses H1a and H1b are not supported. Similarly, the results do not support hypotheses H2a and H2b; cross-border acquirers in the seventh wave did not demonstrate stronger post-merger performance compared to domestic acquirers or cross-border deals from earlier waves.

In assessing industry-specific effects, the analysis did not find significant differences in post-merger performance between technology or pharmaceutical sector deals in the seventh wave compared to those in earlier waves, leading to the rejection of hypotheses H3a1, H3a2, H3b1, and H3b2. Lastly, hypotheses concerning wave timing effects (H4a1, H4a2, H4b1, and H4b2) were also not supported. Early and late entrants in the seventh wave did not significantly outperform nor underperform their counterparts in previous waves.

Taken together, these results suggest that the theoretical expectation of superior value creation during the seventh merger wave, driven by strategic, capability-oriented acquisitions and improved integration planning, is not confirmed when assessed using ROA and ROE. Instead, the performance of acquirers remains broadly comparable across waves, regardless of deal type, industry, or timing. These findings reinforce the need for robust due diligence, effective post-merger integration strategies, and an understanding of industry-specific dynamics before pursuing M&A transactions.

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Appendices

Appendix A. Disclosure of the use of AI tools

It is vital to the validity of this thesis that it represents my own intellectual work. While I have leveraged AI-based software to assist with tasks such as language polishing, data-format conversions, and preliminary literature searches. All substantial analysis, interpretation, and writing reflect my own original contributions. I have actively engaged with every part of this thesis, reviewing, editing, and critically evaluating any output generated by AI tools, to ensure full academic integrity and transparency in accordance with the Code of Conduct of Tilburg University.

For every used AI tool, I have clearly cited and explained their use below. For each tool, I provide the name of the tool, the date of access, URL of the interface, and specific prompts used. As using AI tools is an iterative process, I provided the prompts I started the conversation with.

- ChatGPT (URL: https://chatgpt.com), used on multiple days in March 2025. Specific prompts used (this search was a deep research): "Act like an independent thinker and critically answer the following question. I am currently writing my master thesis for the master strategic management. I already wrote my introduction, problem statement, and outline for the methodology (I included this file as pdf). Now I want to start my literature review. I already selected the following papers myself (I included these as attachment). Search for relevant papers that can help me with my literature review. I need papers from Strategic management journal (SMJ), AMJ, Journal of international business studies, Journal of world business, Management science, Organization science, and Strategic entrepreneurship journal published between 2005 and 2025.

- ChatGPT (URL: https://chatgpt.com), used on multiple days in March 2025. Specific prompts used: "Challenge every assumption in my thinking about merger waves (see attached file that includes my literature review). Push back hard on my logic, identify cognitive biases, and propose improvements where needed."

- ChatGPT (URL: https://chatgpt.com), used on multiple days in March, April, May, and June 2025. Specific prompts used: "Look at the following sentence/alinea/section. Provide me with advice to improve logical flow and writing style."

- ChatGPT (URL: https://chatgpt.com), used on multiple days in May and June 2025. Specific prompts used: "Looking at model ... in my methodology, provide me with an outline for a Python code that I can use in VSCode. Explain each step of the code, in order for me to understand it and being able to alter the code where needed."

- Microsoft Copilot (URL: https://copilot.microsoft.com), used on June 10, 2025. Specific prompts used: "For the following text, provide me with the LaTex code I can copy and paste into Overleaf. Use `\parencite` and `M\&A` where needed. This is the text: ...".

Appendix B. Control variable dummies

To improve explanatory power of the four models, the calendar year dummy variables are grouped into the following categories to capture distinct macroeconomic and geopolitical periods that are relevant for interpreting post-merger performance:

- 1997–2002: Characterized by the Asian financial crisis and the dot-com bubble burst, this period saw suppressed M&A activity. Any deals from the "Wave 6" period occurring here likely faced significant global risk aversion, which could dampen observed returns.
- 2003–2007: Marked by credit-fueled economic expansion and high commodity prices, this phase represents a strong and relatively benign environment for M&A activity, providing an ideal baseline for measuring "Wave 6" returns.
- 2008–2009: The Global Financial Crisis abruptly disrupted deal flow. Deals completed during 2007–2008 fall into the early "Wave 7" period but are influenced by severe macroeconomic headwinds before and after the crisis.
- 2010–2012: The Eurozone sovereign debt crisis created a challenging backdrop for European M&A, which must be accounted for when comparing returns with earlier periods.
- 2013–2019: Moderate global growth combined with rising geopolitical tensions—such as the U.S.–China trade war—characterize this period, potentially affecting industry-specific post-merger outcomes within "Wave 7."
- 2020–2021: The COVID-19 pandemic and subsequent fiscal stimulus caused exceptional market volatility, complicating direct comparisons across waves as abnormal returns may reflect pandemic-related effects rather than wave-specific factors.
- 2022–2024: Higher interest rates and energy-driven inflation created a tighter financial environment, which may suppress M&A activity and profitability metrics during these years.

Grouping the year dummies in this way allows the models to control for varying macroeconomic and geopolitical influences on deal outcomes, thereby improving the accuracy of isolating the pure effects of merger wave timing on firm performance.

To improve explanatory power of the four models, the country dummy variables are grouped into the same three categories as in the Heckman selection model. These three categories are Europe, Asia-Pacific, and "Other". U.S. and Canadian deals are grouped under "Other" to reflect Compustat Global's limited North American coverage.

Appendix C. Variance-Inflation Factors

Table 12: Variance-Inflation Factors.

VIF Table	Model 1	Model 2	Model 3	Model 4
const	160.601510	160.601510	160.601510	160.601510
region_Europe	3.479316	3.479316	3.479316	3.479316
mills_ratio	2.411860	2.411860	2.411860	2.411860
year_2004–2007	2.287314	2.287314	2.287314	2.287314
year_2014–2017	2.118154	2.118154	2.118154	2.118154
year_2018–2021	2.030829	2.030829	2.030829	2.030829
year_2008–2010	1.819105	1.819105	1.819105	1.819105
year_2011–2013	1.756596	1.756596	1.756596	1.756596
region_Other	1.735987	1.735987	1.735987	1.735987
lnA	1.687948	1.687948	1.687948	1.687948
year_2022–2024	1.462454	1.462454	1.462454	1.462454
Wave6_h0	NaN	-	-	-
Wave6_h1	NaN	-	-	-
Wave6_h2	NaN	-	-	-
Wave6_h3	NaN	-	-	-
Wave7_h0	NaN	-	-	-
Wave7_h1	NaN	-	-	-
Wave7_h2	NaN	-	-	-
Wave7_h3	NaN	-	-	-
Wave5_CB	-	NaN	-	-
Wave6_CB	-	NaN	-	-
Wave7_CB	-	NaN	-	-
Wave5_Tech	-	-	NaN	-
Wave5_Pharma	-	-	NaN	-
Wave6_Tech	-	-	NaN	-
Wave6_Pharma	-	-	NaN	-
Wave7_Tech	-	-	NaN	-
Wave7_Pharma	-	-	NaN	-
Wave5_Early	-	-	-	NaN
Wave5_Late	-	-	-	NaN
Wave6_Early	-	-	-	NaN
Wave6_Late	-	-	-	NaN
Wave7_Early	-	-	-	NaN
Wave7_Late	-	-	-	NaN

Note 1. "-" means that variable does not appear in that model; "NaN" arises for pure dummy interactions that are exact combinations of other indicators; these can be ignored.

Note 2. A VIF > 5 may indicate moderate multicollinearity; a VIF > 10 indicates serious multicollinearity (Hair et al., 2010; O'Brien, 2007).