

Review

Review of the Literature on Merger Waves

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Abstract: Over the past few decades, the rapid growth of mergers and acquisitions (M&As) has received interest from academics and practitioners. While M&As continue to be the subject of thorough investigation from a corporate governance standpoint, comparatively less effort has been made to organize and link empirical findings with neoclassical economic theories. Herein, we explore monumental studies from several strands of M&A literature, emphasizing the motives and outcomes of horizontal M&As in the US market.

Keywords: M&A; takeovers; firm performance; merger waves; sharing economy; cross-border acquisitions; innovations; R&D; post-merger performance; agency conflict; anti-takeover provisions

JEL Classification: G30; G32; G34

1. Introduction

Mergers and acquisitions (M&As) are among the most important and prevalent corporate decisions regarding growth and development. The market for corporate control has steadily expanded over the last century, witnessing rapid growth in recent decades. The M&A market's total transaction volume reached USD 3.7 trillion in 2017, making it the fifth most active year on record¹. This boom in takeover activities has produced a voluminous body of literature, and researchers continue to examine various aspects of M&As, such as the causes and effects of these deals. For example, the potential benefits of successful M&As include economies of scale from increased market share and diversification of products and market risks. Firms may also face serious ramifications from engaging in business combinations, especially when a deal's costs outweigh the benefits. The risks and advantages of M&A are extensive, but they are usually associated with shareholder value destruction caused by overpayments for target firms or organizational inefficiencies due to suboptimal synergies and overall integration failures.

This review aims to analyze historical and contemporary M&A literature to understand what motivates firms to engage in takeover activities, which factors contribute most to takeover gains or losses, and how each party in a transaction (i.e., the bidder or acquirer and the target) is affected by the successful completion of the deal. We acknowledge that excellent surveys of prominent works on these topics have already been completed, and we do not intend to replicate these efforts. For example, [Caiazza and Volpe \(2015\)](#) conduct a structured literature review of cross-border M&As while categorizing papers into three divisions: the detailed factors affecting merger decisions, post-merger integrational challenges (such as organizational and cultural difficulties), and post-merger value creation. They focus heavily on identifying organizational inefficiencies that arise from integrating businesses with employees from different cultural backgrounds and determine that management must devise a sound plan to facilitate synergy between the acquirer and target. Our paper is distinct from that of [Caiazza and Volpe \(2015\)](#) in that we organize the relevant strands of the M&A literature by extensively focusing on two theoretical explanations (i.e., neoclassical economic theory and corporate governance framework) regarding firms'



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motives for engaging in M&As. In addition, we rely on event studies that use stock price movements around merger announcements to capture post-merger firm performance. This measurement scheme is considered inaccurate by [Caiazza and Volpe \(2015\)](#) and many other conceptual papers because post-announcement stock price movement may also incorporate investors' anticipation of firm prospects in addition to actual value creation from the merger. We also examine how merger waves affect merger and post-merger returns. The literature has not reached a consensus on the cause of merger waves; however, most studies tend to favor one of the following two theories: First, managerial behavior theory states that merger waves are formed by many factors, including agency motives, a heightened climate, and market overvaluations of acquirers' equity. Second, the neoclassical theory argues that merger waves are formed owing to a set of capital market conditions initiated by exogenous industry shocks. In this survey, we examine the evolution of historical merger waves and use these two theories to identify patterns and determine the factors that propel these waves.

The supply chain bottleneck prompted by COVID-19 lockdown regulations, together with a series of tight monetary policies addressing soaring inflation, signals a recession looming ahead. Particularly, high current interest rates discount future expected cash flows, implying that firms risk massive corrections in their valuations of ongoing/future projects. Considering the amount of capital required to fund a deal, engaging in M&As in these uncertain times may be deemed as too risky an investment. Thus, it seems natural to expect that merger activity is discouraged, given such a hostile business environment. However, [Lee et al. \(2021\)](#) show that COVID-19 does not exert a meaningful influence on M&As, as almost five in six completed deals in 2020 involved targets from developed countries that could combat COVID-19 better than developing countries. Simultaneously, an adverse business environment might also provide a more cost-effective growth opportunity for financially stable firms. From this perspective, an M&A could be interpreted as an attractive growth opportunity when the acquirers have sufficient means to afford it. Regarding this fire sale point of view, [Bouwman et al. \(2009\)](#) show that deals made in the dot-com bubble era recorded better long-run performance than those completed in boom periods. As such, this contrast in the empirical evidence sheds light on the necessity of assessing multitudinous confounding factors when interpreting their impact on a firm's merger decision, especially given the current economic situation.

The authors conduct a review of classical and contemporary research to organize and evaluate the findings from various strands of M&A literature. We invite readers to reconsider the much-visited question of why firms merge using two frameworks: neoclassical economics and corporate governance. The reviewing process is designed as follows: We first collected business and management studies from 1950 to 2017 by searching relevant keywords (e.g., M&A, merger waves, cross-border acquisitions, post-merger firm performance, etc.) in the Web of Science database. Next, we sorted the list in descending order by the number of citations and the journal impact factor and classified the papers into groups by queried keywords. We manually trimmed down, from bottom to top, the articles that were not published in peer-reviewed journals so that there were no more than 50 references per category. However, we kept a handful of working papers, book chapters, and conference papers deemed fundamental to our review. Then, we added to the list more recent papers by searching for keywords (e.g., M&A and sharing economy) in Google Scholar. References published in the late 2010s to 2020s and open-access articles were added in this step. All authors contributed equally throughout the screening process, and the list of 83 papers was finalized after a reviewing process and discussions.

The remainder of this paper is organized as follows: Section 2 identifies five merger waves and discusses the acquiring firms' short- and long-term post-merger performance in each wave, the influence of payment method on post-merger returns, the relationship between cross-border deals and the level of capital market development, and the merger activity in the sharing economy and its tie with research and development (R&D). The following sections review neoclassical economic theories and analyze corporate governance

issues concerning the firm’s motives for M&A. Then, anti-takeover mechanisms and their effects on M&A performance are examined. The concluding section presents a summary, discusses managerial implications, and proposes future research avenues.

2. Merger Waves

Corporate merger activity in the US is known to follow cyclical patterns, forming so-called “merger waves”. Although the literature on merger waves is extensive, no unifying theory can explain the cause of these clusters. Nevertheless, many interesting facts emerge from studying each merger wave’s underlying forces, such as macroeconomic shocks, regulatory changes, and technological developments. In this section, we review relevant studies that attempt to identify the driving forces of merger waves and the evolution of merger activities over time across different waves.

2.1. The History of Merger Waves

Recent surveys and news articles often note that five merger waves occurred during the 20th century, and two additional waves have formed thus far in the 21st century². However, the existing literature focuses primarily on the first five merger waves. The earliest documented wave spanned the 1890s to the 1900s, and the fifth wave occurred around the end of the 20th century. Thus, we limit our focus to the academic findings of the first five merger waves. Figure 1³ shows the number of M&As in the US from the end of the 19th century to the present.

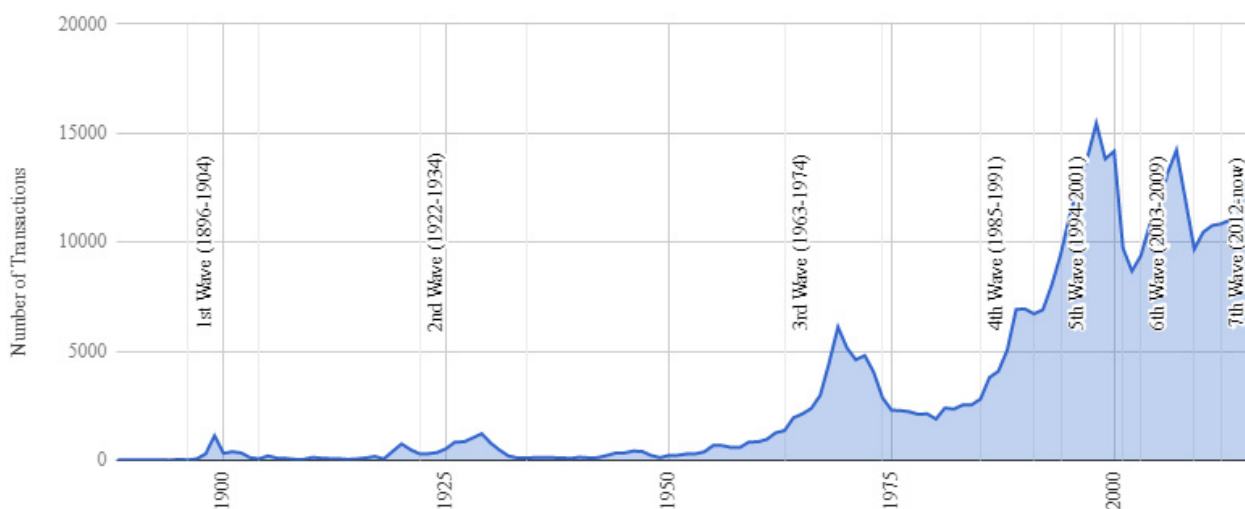


Figure 1. M&A waves in the US (1851–2017).

Martynova and Renneboog (2008) note that the US economy has experienced five distinct merger waves. These waves are easily identified in Figure 1 by observing the peaks in merger transactions in the early 1900s, 1920s, 1960s to the 1970s, 1980s, and 1990s. Historical insight can help identify the events that mark the end of these merger waves; such events are generally the outbreak of a major war or the beginning of a financial recession or crisis. We investigated the specific characteristics of each wave based on the findings of related studies.

2.2. First Wave: Horizontal Mergers

The first merger wave began at the end of the 19th century and is often called “The Great Merger Wave”. This wave was largely affected by economic expansion, structural changes in manufacturing industries, state- and country-wide corporate regulations, and, most notably, the growth of stock markets, such as the New York Stock Exchange (NYSE). It is especially noteworthy that this wave is characterized by a high level of horizontal merger activity among firms within the same industry. This trend in strategic alliances between

competitors gave rise to monopolies, such as the Standard Oil company. Stigler's (1950) survey of merger activities in the steel, mining, and oil industries noted that the Sherman Antitrust Act of 1890 was not adequately enforced to curb monopoly building. In addition, the lack of protection for entrepreneurs (i.e., unlimited liability) and the increased access to capital due to NYSE improvements incentivized risk-averse entrepreneurs to sell their businesses and risk-loving entrepreneurs to purchase these businesses to take control of the market (Stigler 1950). In addition, it is noteworthy that the primary means of payment for these transactions was cash (Stigler 1950). Given the historical context of the US economy from the 1890s to the early 1900s, it is unsurprising that the first merger wave lasted only about a decade. It ended abruptly owing to the stronger enforcement of the Sherman Antitrust Act, the introduction of new financial regulations protecting entrepreneurs, and the start of the First World War.

2.3. Second Wave: Vertical Mergers

The second merger wave followed the end of the First World War. It coincided with a time of economic recovery and was associated with stricter government scrutiny of monopoly mergers. Many mergers from the late 1910s to the mid-1920s were between small corporations that did not participate in the first merger wave. Stigler (1950) describes this process as a movement toward oligopolies. The primary motive behind the merger activities in this period was not to form monopolies, as in the previous decade, but rather to achieve economies of scale to compete with larger industry competitors through vertical integration. The primary payment method for transactions shifted from cash to equity during this period (Martynova and Renneboog 2008). The second merger wave, like the first wave, ended abruptly. After the equity market crash of 1929 (i.e., the Great Depression), merger activities came to a complete stop until the end of the Second World War.

2.4. Third Wave: Diversified Conglomerate Mergers

The third wave of mergers formed in the 1950s, a period in which antitrust laws were highly enforced. Since government hostility and negative market sentiments toward trusts and monopolies were at their peak, merger activities were forced to evolve, giving rise to a new trend in mergers. Unlike the previous two merger waves, in which mergers typically involved firms within the same industry, the third wave began with the consolidation of unrelated companies. In this period, firms used mergers to diversify their portfolios to reduce exposure to industry-specific risks, ultimately leading to the rise of large conglomerates. Specifically, firms with significant cash flow volatility and high asset specificity were more likely to engage in M&As to reduce firm-specific risks (e.g., Amihud and Lev 1981; Garfinkel and Hankins 2011; Servaes 1996). Like the second wave, these mergers were predominantly transacted using equity. The third wave lasted for two decades, ending with the global economic recession in 1973, prompted by the oil crisis.

2.5. Fourth Wave: Hostile Takeovers and Corporate Raiding

The fourth merger wave, which occurred from 1984 to 1989, was qualitatively different from the previous waves. Less intensive state-wide anti-takeover regulations, the use of a new financial instrument for transactions (i.e., debt), the development of the junk bond market, and the expansion of the electronics industry mainly contributed to the distinctive aspects of merger activities during this period (Jarrell et al. 1988). Previous mergers could be broadly defined as friendly combinations of two firms; however, in this period, hostile takeovers and corporate raids began to dominate due to changes in the takeover market. Martynova and Renneboog (2008) note that the number of unprecedented divestitures, hostile takeovers, and leveraged and management buyouts was unusually high. They identify the primary motive for this merger wave by citing Shleifer and Vishny (1991), who posit that the operations of many conglomerates formed in the third wave became inefficient by the 1980s. Thus, these conglomerates were forced to sell their subsidiaries and reorganize. Similarly, Morck et al. (1990) find that bids on target firms within a

bidding firm's industry are positively associated with that firm's shareholder returns. They also determine that bids on unrelated targets reduce an acquirer's shareholder value, which provides clear evidence of the negative market sentiment toward conglomerate mergers targeting diversification that was prevalent during the third merger wave. Like the preceding waves, the fourth wave officially ended when the stock market crashed in 1989.

2.6. Fifth Wave: Cross-Border Mergers and Megadeals

The fifth merger wave coincided with the economic and financial boom of the 1990s. The underlying theme during this time of rapid economic expansion was globalization; firms no longer only competed with their domestic rivals but internationally. Given this context, it is unsurprising that firms began to seek acquisitions outside their respective countries to obtain growth opportunities. This trend was not only specific to the US market but was also prevalent in the European market, and the Asian market began opening its borders to participate in this global trend. Figure 2, taken from [Martynova and Renneboog \(2008\)](#), illustrates this global trend graphically.

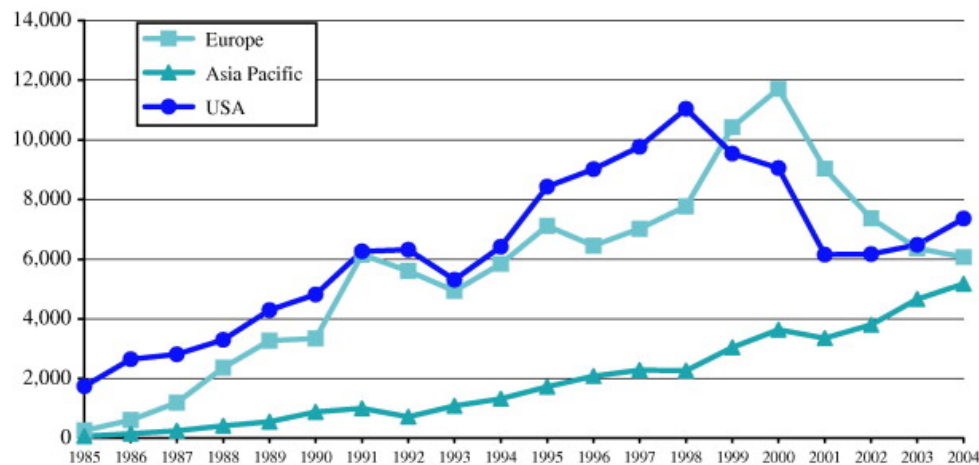


Figure 2. Global trends in M&A activities.

Two characteristics distinguish the fifth merger wave from previous waves. Larger firms began to consider M&As as a viable option for growth, whereas the previous waves featured mostly smaller firms merging to command market power. In addition, firms' target selection changed dramatically as more firms began to search for merger candidates beyond their countries' borders. These large mergers, known as megadeals, continued to dominate the market for corporate control in the 1990s, and many of these deals spanned multiple countries ([Andrade and Stafford 2004](#)). Some notable cross-border megadeals include the mergers of Vodafone (UK) and Mannesmann (Germany), with a total transaction value of USD 202 billion⁴; Vodafone (UK) and AirTouch (US), valued at USD 60 billion; and BP (UK) and Amoco (US), with a value of USD 53 billion. However, merger waves are cyclical with the economy, and the fifth merger ended following the burst of the dot-com bubble.

2.7. Merger Performance during Each Wave

Firms' post-merger performance in each wave is well documented⁵. However, few studies have investigated differences in post-announcement returns across wave and non-wave periods. To the best of our knowledge, [Duchin and Schmidt's \(2013\)](#) study is the only one to distinguish between agency motives and consider the differences in post-announcement returns for transactions conducted during in-wave periods and out-wave periods. Other studies use samples covering years that either belong to at least one of the merger waves or do not belong to a wave at all. Hence, we succinctly summarize firms' benefits and costs of engaging in M&A deals during the five merger waves.

2.7.1. Short-Term Post-Merger Announcement Returns

Most studies measure short-term post-merger announcement returns using cumulative average abnormal returns (CAARs) around bid or merger announcement dates with varying event windows. These studies unanimously report that M&As are expected to create value for the combined shareholders of target and bidder firms (Martynova and Renneboog 2008). In essence, target firms' shareholders are the clear winners of these deals, at least in the short run⁶.

Few studies gauge the short-term wealth effects of M&As during the first merger wave owing to empirical challenges stemming from data limitations. Using various weekly intervals to capture short-term post-merger announcement returns, Banerjee and Eckard (1998) study a sample of industrial and mining mergers and report a value gain of at least 12% for trust participants in mergers and a value loss for competing firms during the first merger wave. Regarding the second merger wave, Leeth and Borg (2000) show that mergers completed between 1915 and 1930 in the US stock market had significant abnormal returns of around 18% for target shareholders.

Similar results were obtained for the remaining three merger waves. For example, Eckbo (1983) reports significant positive CAARs for target firms around merger proposal dates based on a sample of horizontal mergers in the mining and manufacturing industries during the 1960s and 1970s. Bradley et al. (1988) investigate tender offers during the third merger wave, showing that successful deals enhance the net shareholder values of newly combined firms by an average of 7.4%. In the same period, the bidding firms' shareholders did not benefit as much from deal completion, with average abnormal announcement returns anchoring near zero (Asquith 1983; Eckbo 1983). This large gap between the returns to the target and bidder firms' shareholders widens in the subsequent merger waves. Schwert (1996) reports that this gap was approximately 10% during the fourth merger wave, with target firms' shareholders earning average returns of 11.9% and bidder firms' shareholders earning average returns of 1.4%. Similarly, in the fifth wave, which spans 1990 to 1999, target shareholders earned average abnormal returns of 21.2%, whereas bidding shareholders were 0.37% shy of breaking even (Mulherin and Boone 2000).

Most scholarly evidence suggests that firm performance generally improves after a merger, with target firms' shareholders earning most of the gains and bidding firms' shareholders receiving less of the gains or even losses (Bruner 2004 and Weston et al. 2004 provide detailed reviews of this). Overall, the empirical evidence suggests that deals provide net positive gains in combined shareholder value in the short run.

2.7.2. Long-Term Post-Merger Announcement Returns

Long-run M&A performance is also measured using CAARs, but the event window is extended for several years following a merger announcement. According to Martynova and Renneboog's (2008) survey, the market model and capital asset pricing model (CAPM) are the most common benchmarks for measuring abnormal returns. However, because an event window of several years following a deal is necessary to measure the long-run performance, it is empirically difficult to isolate a transaction's long-term wealth effect from other confounding effects. Jensen and Ruback (1983) express methodological concerns regarding studies on long-run post-merger performance. In addition, Martynova and Renneboog (2008) note that the results of these studies vary dramatically depending on deal characteristics, such as the transaction payment method, the target firm type (e.g., public or private), and the bid status (e.g., hostile or friendly takeover)⁷. Nevertheless, many studies support the view that takeovers generally do not create significant value for merged firms' shareholders in the long run.

Few studies examine the long-run impacts of deals in the first and second merger waves due to the limited sample size and potential selection bias (e.g., many sample deals were subject to antitrust regulation). Thus, we surveyed studies investigating these effects during or after the third merger wave. Of the studies that consider the US stock market in detail, those of Ellert (1976), Asquith (1983), Malatesta (1983), and Franks et al. (1988)

analyze sample deals completed in the years that roughly correspond to the third merger wave (1963–1974). Ellert (1976) examines 205 deals completed from 1950 to 1972 and finds a long-term abnormal return of -1.6% ; however, these deals were all challenged by the Federal Commission for violating antitrust regulations. Using a sample of 196 completed deals from the early 1960s to the mid-1970s, Asquith (1983) shows that acquirers' long-term returns are -7.2% , which is statistically significant. Similarly, Malatesta (1983) finds that acquirers' average abnormal returns over the 36 weeks after a merger announcement are approximately -7.6% , a statistically significant result consistent with earlier studies. Franks et al. (1988) use a comparatively larger sample of 392 deals completed in the US market over the 30 years from 1955 to 1984 and report an average abnormal return of -1.8% .

The long-term post-announcement returns in the fourth and fifth merger waves are not overly different from those in the third wave. Agrawal et al. (1992) and Rau and Vermaelen (1998) study transactions completed within the fourth merger wave using the CAPM model and show that acquiring firms' shareholders incur long-run losses of -10.3% and -2.6% , respectively. Loughran and Vjih (1997) also show that firms that engaged in merger deals other than tender offers from the early 1970s to the late 1980s experienced, on average, a 25% decline in share prices over five years. Similarly, Datta et al. (2001) report that deals completed during the fifth merger wave were detrimental to acquiring shareholders in the long run, with an average abnormal loss of -10.7% over the 36 weeks after the merger announcement. Overall, the large discrepancy in the stock market reactions to bid and merger announcements in the short and long term suggests that corporate takeovers may harm shareholder value in imperfect capital markets (Martynova and Renneboog 2008).

2.7.3. Method of Payment and Post-Merger Returns

Many studies investigate payment methods for financing M&A deals. The choice to bid in a takeover auction and the payment method selection for completing a merger deal send strong signals to both the target firm and the market about the bidder's or acquirer's internal growth prospects and the valuation of the target's assets⁸. At the same time, the payment method can also reveal whether the acquirer's stock price is over- or underpriced. As such, the acquirer's choice of payment is a strategically important corporate decision that reflects multiple factors, such as capital structure, tax deferrals, agency issues, and information asymmetries (Eckbo 2009). It is not surprising that the stock market reacts differently depending on the form of payment (e.g., all cash, all stock, or a mixture of the two) selected to fund a deal⁹.

For example, studies find that cash offers generate better target shareholder returns than stock offers. Acquiring firms' managers are incentivized to use cash rather than stocks as the primary mode of payment for financing M&A deals for several reasons. First, a manager of a firm that has accumulated sizeable internal cash reserves has limited options for using this excessive free cash productively. For example, a manager may decide to maintain a large cash balance within the firm for precautionary reasons, but maintaining the status quo does not generate any excess returns. Similarly, returning cash to shareholders as dividends is not optimal if the manager and shareholders are looking to use the firm's internal reserves for growth opportunities. In this case, managers must decide whether to use excess cash to acquire firms or invest in other positive net present value projects to pursue growth. Jensen (1986) highlights managers' empire-building motives and argues that they are more likely an attempt to acquire other firms to increase the size of the assets under their control and, thus, improve reputation and influence.

A manager can choose to complete an M&A deal with several payment methods, each of which yields drastically different announcement returns. Issuing seasoned equities or debt introduces more stakeholders to a firm and worsens agency problems (Jensen 1986). It may also signal to the market that the acquiring firm's equity is overvalued (Myers and Majluf 1984; Shleifer and Vishny 1991). Investors express concerns based on agency issues and asymmetric information on the valuation of corporate assets when they learn about equity-financed M&A deals, causing the security prices of the acquiring and target firms to

decline in the US market (Andrade et al. 2001; Asquith et al. 1990; Schwert 1996; Travlos 1987; Yook 2003). Following this reasoning, a cash offer indicates that a valuation is close to the fair value of the target's assets. Thus, cash offers generate better announcement returns than equity-financed deals do. However, target firms' shareholders prefer equity offers to cash offers, as they are required to pay taxes immediately after the sell-off in the case of cash offers. Hence, they demand higher premiums to compensate for these tax duties, resulting in greater announcement returns for target firms when deals are financed with cash rather than equity (Huang and Walkling 1987).

Privatization of state-owned enterprises (SOEs) can also be considered as a form of merger between an acquirer from the private sector and a target from the public sector. These deals are carried out quite differently from an ordinary transfer of ownership between two publicly listed firms and are often executed with a different motive, usually a political agenda that varies greatly from merger motives explained in later subsections¹⁰.

Studies also find that tender offers generate better announcement returns than other forms of mergers (Eckbo 2009). The proportions of cash-only and cash-mixed offers are greater for tender offers than for merger bids, ruling out the possibility that other factors drive the differences in announcement returns. In sum, the literature on payment methods lays a concrete theoretical foundation for explaining why cash is the most desired form of payment for financing M&A deals. This view is supported by empirical evidence.

2.7.4. Cross-Border Deals and the Capital Market

In Section 2.6, we briefly discussed the surge in cross-border M&As since the 1990s due to globalization. Most studies from the cross-border M&A literature examine whether similar findings based on the developed capital market can be observed in an international setting. In general, the literature agrees that cross-border deals are more likely to occur when there are more similarities than dissimilarities between the bidder and target firms regarding regulatory and cultural backgrounds (Erel et al. 2012; Ahern et al. 2015). Relatedly, Erel et al. (2012) analyze 56,978 cross-border mergers over a sample period between 1990 and 2007 and note that both the properties and performance of the cross-border transactions resemble those of within-border transactions when the geographical proximity and the accounting standards between the bidder and target firms are closely related. In addition, Ahern et al. (2015) study 20,893 international mergers from 52 countries over a sample period between 1991 and 2008 and find that cultural similarity, as measured by trust, hierarchy, and individualism, affects not only the likelihood of deal completion, but also the level of post-merger synergetic gains.

It is also well documented in law and finance literature that the differences in regulatory environments are among the most critical factors affecting merger completion and outcome (Rossi and Volpin 2004; Acharya et al. 2011). Rossi and Volpin (2004) study the differences in laws and regulations across 49 countries and explain the variations in volume, payment method, and post-merger performance. The authors find that countries with strong shareholder rights protection have higher transaction volumes but fewer cross-border deals and that successful deals generate greater returns and are more likely to be financed by stock payments. Given that better investor protection measures (both for creditors and shareholders) are often associated with more developed capital markets, it is unsurprising that target firms may withdraw from weak governance by engaging in cross-border deals with acquirers from more developed capital markets. Similarly, Acharya et al. (2011) show that stronger creditor rights induce risk-reducing corporate investment behavior. The authors find that these stronger creditor rights increase firms' propensity to engage in diversifying acquisitions, acquiring targets whose asset values show good recovery even in an expected decline in profitability and value after a deal. In sum, these studies shed light on the possibility that international mergers can serve as a two-way channel through which both parties achieve their respective goals. Bidders from a more developed market may reduce overall firm risk or capitalize on growth opportunities not present within national borders. Simultaneously, targets from a less developed market may

opt out of weak governance in an efficient way that is otherwise not possible given the existing business environment.

Gonchar et al. (2022) also support the notion that acquirers from a more developed capital market may choose to negotiate deals with targets from a less developed capital market. The authors study a sample of 4030 observations from 2000 to 2020 in Ukraine to analyze how various changes in the business environment affect the volume of domestic and cross-border M&As, as measured by the ease of doing business (i.e., regulatory environment), the size of the shadow economy, and geopolitical uncertainty. They report that despite the rapid expansion of the Ukrainian economy, overall M&A activities declined over the last two decades, hinting that economic growth alone cannot induce a larger merger market. The number of domestic mergers rose considerably in tandem with the improvement in the regulatory environment and the reduction in the size of the shadow economy over the sample period, which can be associated with a more developed capital market. In contrast, cross-border M&As decrease in a better business environment, adding empirical support to the hypothesis that foreign acquirers from developed markets may seek targets from less developed markets for a bargain sale opportunity not present within their own country (Rossi and Volpin 2004; Acharya et al. 2011; Gonchar et al. 2022).

2.7.5. M&As in a Sharing Economy and R&D

Despite the rapid growth of the sharing economy over the last few decades, there are minimal studies scrutinizing how the birth of this new business model may enhance the understanding of firms and their decisions. Indeed, it is difficult to categorize the sharing economy as a new distinct business model, as most of the peer-to-peer or platform services can be considered new devices or extensions built on top of existing products and services. For example, prominent firms offering collaborative consumption of space/storage, vehicles, and other physical/digital products (e.g., Google, Netflix, Microsoft, Uber, Airbnb) already belong to existing industries (e.g., artificial intelligence, software, automotive, hospitality). Regardless of this empirical challenge, many studies point out an interesting commonality among these firms. Specifically, most sharing economy businesses are innovative, as evidenced by the high number of patents and significant intellectual property valuations, and are the most active participants in the M&A market (Batoool et al. 2020; Pérez-Pérez et al. 2021). This positive link between corporate technological activities (or R&D) and M&As is the most prevalent phenomenon that sharing economy firms exhibit and thus must be thoroughly examined.

Then, what is the relationship between R&D and M&As? To answer this question, Bena and Li (2014) test four main hypotheses using conditional logit models with three different control samples and two technological overlap measures. The authors employ a unique merger–patent pair dataset between 1984 and 2006, provided by the Mergers and Acquisitions database of SDC. After filtering out some observations for clearer interpretation, the authors study 2621 deals with acquirer information and 1762 deals with both target and acquirer firm information. In addition, the authors use two measures to capture the similar (dissimilar) innovation characteristics between the target and acquirer firms in a deal. The first measure, Technological Proximity, suggested by Jaffe (1986), captures the similarity between two firms' innovation activities. The second measure, Knowledge Base Overlap, developed by Bena and Li (2014), captures the degree to which two firms base innovation on the same underlying knowledge (or patents). It is worth noting that Bena and Li's (2014) overlap variables provide a reliable measure of how two firms' technologies are interconnected, thereby offering a new way of capturing innovation synergy in mergers and acquisitions without being confined by conventional business classifications.

Using this experimental setting, the authors provide several interesting findings. Namely, Bena and Li (2014) find that both acquirers and target firms in a deal are active in technological innovations, but acquirers focus more on innovation output, while targets spend more on R&D expenditures. Second, they show that firms with more patents and lower R&D expenses are likely to consider acquisition a growth option. In contrast, firms

with higher R&D expenditure and fewer growth opportunities have greater chances of being acquired. Moreover, merger deals between firms with technological overlaps are more likely to be successful, although this impact is lessened when the firms compete in the same product market. Lastly, if the firms have a technological overlap before a merger, the merger greatly enhances the combined firm's overall innovation output after the deal completion. These findings contribute to the literature by identifying a specific characteristic (i.e., a firm's varying degree of innovation activity) that drives synergetic mergers between firms and affects post-merger outcomes.

Phillips and Zhdanov (2013) provide a valuable discussion regarding a theoretical perspective on why certain firms (e.g., companies with larger patent portfolios) choose to acquire other firms (e.g., companies with higher R&D spending). The authors model the incentive schemes for differently sized firms (i.e., large vs. small) to spend more on R&D or allocate resources to acquire other firms to attain the same innovation efficacy at differing states of the acquisition market. They find that it may be more profitable for large firms to absorb small firms with technology assets and patents rather than engaging in R&D themselves. The results from both their theoretical analysis and empirical experiment indicate that in an active merger and acquisition market, smaller firms may derive greater utility from spending more on R&D, as doing so increases the likelihood of being acquired by a larger company interested in enhancing their patent portfolios. Hence, smaller firms could potentially capture a more significant proportion of the acquisition surplus from a merger deal, motivating them to invest more in R&D than larger firms. However, note that the two papers reviewed so far only discuss the innovation motive behind horizontal merger activities. If we consider different types of mergers, namely a conglomerate merger, the established relationship between the merger and post-merger increase in innovation output of the combined firm may no longer be the case.

Related to this, Seru (2014) partially supports the notion that acquiring companies allocate fewer resources to internal R&D activities but more to strategic alliances and joint ventures for innovation. In addition, the author's quasi-natural experiment result shows that post-merger innovation productivity declines in conglomerate mergers, which supports the counterfactual finding of Bena and Li (2014) that if two firms have a technological overlap, then the merger increases the combined firm's post-merger innovation output. However, the findings of Seru (2014) are not directly in line with the above two works, which considered that target firms with technological assets and patents are of direct use to the potential acquirer, meaning that there is a technological overlap. In Seru's (2014) experimental settings, the author only considers a conglomerate merger, in which two candidate firms in a merger come from different industries. It is also important to note that there may be an intense agency conflict among subsidiaries in a conglomerate firm, as it is regulated by a holding company whose corporate decisions for the conglomerate may not necessarily represent the interests of the individual subsidiaries. Hence, the decision to invest more (less) in internal R&D for innovation may depend on the level of agency conflict between the holding company and member firms. Due to the distinctive organizational structures within conglomerate firms (and their benefits and costs), Seru's (2014) findings suggest that the post-merger innovation efficacy of a conglomerate merger relies on the autonomy among member firms and on the efficiency of the internal (inter-group) capital market, rather than on the technological overlap of the pre-merger firms.

The articles reviewed up to this point explain the incentives of large firms to use M&As to enhance R&D efficiently and gain a competitive edge. Unfortunately, this is based on the premise that there are no volatile changes in the overall business environment, as the samples used by Bena and Li (2014), Phillips and Zhdanov (2013), and Seru (2014) capture the impact of the financial crisis in 2000, but not that of 2008 and 2020. Given that the COVID-19 recession was qualitatively different from the Great Recession, it would be worth looking into how firms' incentives to engage in M&As for R&D purposes are still strong even in the presence of adverse exogenous shocks. Recent studies offer valuable insights into how M&A activities were affected by the onset of the COVID-19-led recession. For

example, [Kooli and Son \(2021\)](#) report that despite the initial sharp decline in M&A activity during the first two quarters of 2020, the total volume of M&A transactions during the third and fourth quarters quickly rebounded to a new record high due to the ease of lockdown measures. Firms in the technology and healthcare sectors were more actively involved in M&As during this period. In contrast, firms in the transportation and accommodation sectors were the least involved, hinting that financially stable companies continued to scale up by capitalizing on this economic downturn ([Batool et al. 2020](#); [Kooli and Son 2021](#)).

Similarly, [Lee et al. \(2021\)](#) study how cross-border M&As were affected by the onset of the COVID-19 pandemic. They report that COVID-19 cases do not exert a meaningful influence on M&As in general, as most of the deals conducted during the sample period involved target firms from developed countries that could cope with COVID-19 better than those from developing countries. This result hints that the cross-border M&As during COVID-19 times exhibit a different pattern from the traditional cross-border deals where target firms were mainly from less developed capital markets.

3. Causes of Mergers and Merger Waves

As the previous section briefly summarizes, mergers are widely acknowledged to generally come in waves, and these waves can be uniquely identified by their impelling forces. Thus, the question of what causes merger waves arises. The existing literature relies on two theoretical frameworks, described in the following subsections.

3.1. Neoclassical Economics Framework

The neoclassical framework focuses heavily on rational explanations for merger waves. The neoclassical view makes two primary assumptions: managers maximize shareholder value, and the capital market is efficient. Within this neoclassical perspective, two main theories are used to identify the causes of merger waves.

3.1.1. Changes in the Business Environment (Macroeconomic, Technological, and Industrial Shocks)

The fundamental framework for establishing a link between macroeconomic shocks and merger waves can be traced to [Gort \(1969\)](#). He argues that mergers occur when two conditions are met: when the bidder's estimated valuation of the target firm's equity is greater than the target firm's own valuation and when the bidder's expected surplus from the acquisition is greater than that from any alternative purchase or investment. Thus, economic disturbances that fundamentally change the expected value of a firm's assets increase the variation in both parties' valuations of these assets. [Gort \(1969\)](#) further notes that information asymmetry, which occurs when one party (either the acquirer or the target) holds more information on the actual value of the firm's assets than the other party, does not always increase discrepancies in firms' valuations. Instead, differences in expectations of an economic disturbance's effect on the value of a target firm's assets can also cause such discrepancies. Since corporate asset valuations are mere estimates that rely heavily on past data, [Gort \(1969\)](#) asserts that technological developments and stock price fluctuations may lead to more M&As. For example, when an industry undergoes rapid and irreversible technological development, new products or production processes are devised, making it difficult for investors to accurately evaluate income-yielding corporate assets ([Gort 1969](#)). According to [Gort \(1969\)](#), this outcome ultimately increases the frequency of mergers. [Gort \(1969\)](#) also argues that increases in stock prices may reduce the frequency of corporate mergers, as firms may be concerned about overpayment risks.

The industry shock theory considers exogenous shocks to the business environment, represented by economic, technological, and regulatory changes, as the primary causes of merger waves ([Harford 2005](#)). This theory directly extends [Mitchell and Mulherin's \(1996\)](#) finding that interindustry restructuring is associated with economic shocks within industries. Specifically, [Mitchell and Mulherin \(1996\)](#) isolate industry shocks believed to have driven the fourth merger wave and observe industry-level patterns in corporate

takeover and restructuring activities. Relatedly, they find that takeovers cluster at the industry level and that this time-persistent clustering is strongly associated with changes in technology and government regulations. They argue that corporate takeovers may be the most cost-effective firm response to macroeconomic shocks. Harford (2005) builds upon this empirical evidence by extending the period of analysis to the 2000s to determine whether industry shocks cause aggregate merger waves. He shows that a macroeconomic shock may lead to a merger wave conditional on the level of capital liquidity.

Maksimovic and Phillips (2001) analyze public and private firms in the manufacturing industry from 1974 to 1992 and find that it is optimal for firms to acquire less productive competitors even though it may lead to higher management costs. They note that industry shocks may change corporate asset valuations, incentivizing acquirers to reallocate these assets to more productive uses. Their empirical findings imply that a firm is more likely to be sold when the industry is experiencing positive demand shocks. In addition, the productivity of corporate assets (i.e., plants or divisions) relative to industry benchmarks can also affect the likelihood of a sell-off (Maksimovic and Phillips 2001). A firm is more likely to be the acquisition target if it owns productive divisions belonging to other industries or if the division for sale is less productive than the acquirer's division. In sum, firms tend to acquire the assets of their less productive peers when positive demand shocks occur, which, in turn, further decreases the market competitiveness of selling firms.

Martynova and Renneboog (2008) find that technological or industrial shocks that drive firms to restructure may also cause merger waves. Lambrecht (2004) supports the notion that merger waves are sensitive to positive macroeconomic shocks by developing a model that illustrates a positive relationship between market demand and post-merger gains, concluding that mergers lead to increased market power. This market power, in turn, strengthens firms' incentives to merge and accelerates their related activities. Andrade et al. (2001) support the argument that an industry shock (i.e., deregulation) was the most influential factor in M&A trends among US firms in the 1980s and the 1990s, suggesting changes in technology, market supply, and government policies may trigger significant merger waves.

However, Netter et al. (2011) raise concerns about the narrow sample screening processes used by most M&A studies, which can lead to premature conclusions about the factors that engender merger waves. For example, they note that conventional research relies heavily on restrictive samples that often exclude private and insignificant deals (i.e., deals with small or unreported target values) and that these datasets only represent the tip of the iceberg (2.4% of US deals and 1% globally). When they analyze a broader sample with more relaxed restrictions, they find that the merger waves are smoother and less conspicuous. This result provides evidence against the mainstream findings that exogenous macroeconomic and industrial shocks tend to spur turbulent merger activities. They also find that the clustering of mergers is mainly driven by large deals initiated by publicly traded enterprises.

Andriuškevičius and Štreimikienė (2021) conduct a review of M&A studies in the energy industry published between 1995 and 2020. Consistent with the merger wave literature, global merger activities in the energy industry are procyclical and tend to come in waves. The authors categorize political, economic, social, technological, legal, and environmental factors that contribute greatly to the likelihood of deal completion and post-merger performance in the energy industry. They highlight that distinct energy industry characteristics, geopolitical uncertainties causing wild fluctuations in commodity prices, technological advancements enabling the efficient production of renewable energies, and regulatory reduction of carbon dioxide emissions affect merger and acquisition activities in the energy sector.

3.1.2. The Q Theory of Mergers

The theoretical background for the Q theory of mergers can be traced to Tobin's Q theory of investment. Tobin's Q ratio is measured as the total market value of tangible assets

scaled by their replacement costs, and it captures the level of over- or underinvestment in a firm (Tobin 1969). A Tobin's Q ratio below 1 indicates that a company is most likely undervalued, and a ratio above 1 suggests overvaluation. The Q ratio is extensively used in corporate finance studies as a proxy for a firm's investment opportunities. Firms with higher Q ratios will likely be well managed and generate better asset returns (Tobin 1969). Thus, these firms should invest more in maximizing shareholder value. Given this context, acquiring lower-Q firms' assets may be an attractive investment opportunity for higher-Q firms.

Jovanovic and Rousseau (2002) further elaborate on the Q theory of investment. They claim that higher-Q companies desire to acquire lower-Q companies because the total takeover returns, or the combined returns from a merger, are higher when the acquirer's Q ratio is high and the target's Q ratio is low. To support this hypothesis, they provide time-series evidence that assets acquired through mergers are more strongly related to firms' Q ratios than assets acquired in the form of used plants and equipment. This finding indicates that a merger wave may occur because of the reallocation of assets from poorly managed companies (i.e., those with low Q ratios) to better-managed firms (i.e., those with high Q ratios). Thus, markets with large interfirm dispersions in Q ratios are likely to see an increase in M&As.

Dong et al. (2006) engage in a valuable discussion of the Q theory of takeovers. They investigate the motivation for mergers by studying the empirical relationship between market valuation and takeover characteristics within the context of the Q theory of mergers and the misvaluation hypothesis. We describe the misvaluation hypothesis in more detail in later sections, but a simple explanation is that bidders are often overvalued relative to their targets and attempt to exploit capital market inefficiencies (e.g., stock mispricing) by using either cash or overvalued equity to buy undervalued targets. Dong et al. (2006) examine a sample of 2922 successful and 810 failed acquisition bids from 1978 to 2000. Evidence for the Q theory of takeovers was stronger before the 1990s, and evidence for the misvaluation hypothesis was stronger from the 1990s to 2000.

3.2. The Managerial Behavior View

The managerial behavior view fundamentally disagrees with the assumption that managers act in the best interests of their shareholders. This view dismisses the assumptions that shareholders' and managers' interests are aligned and that the capital market is efficient and considers the intense agency conflicts behind corporate merger decisions. Studies from this perspective investigate how managerial behavior can affect merger outcomes. Below, we briefly review two relevant streams in the literature.

3.2.1. Agency Problems

Aligning managers' and shareholders' interests is critical in corporate decisions with the potential for value destruction. Although M&As are among a firm's largest investments, prior studies show that they generate slightly positive returns for acquiring shareholders and may generate negative returns if the acquiring firm faces intense agency conflicts.

The agency cost theory of M&As proposes that managers of acquiring firms initiate mergers to pursue personal benefits, such as increased salaries and job security. According to Jensen (1986), managers have incentives to engage in acquisitions that are not value-enhancing because managers with greater resources under their control are often more difficult for shareholders to replace. Moreover, managers are usually paid more when their companies grow. Given these incentives, sizeable free cash flows may prompt managers to make unnecessary acquisitions to grow their firms beyond the optimal size (Jensen 1986). Jensen (1986) argues that agency-motivated acquisitions due to large free cash flows can collectively create merger waves, especially around industrial shocks or when financial markets are booming.

It is plausible that easier access to capital markets due to better economic conditions triggers merger waves where firms benefit more from M&As than non-wave periods.

However, managers likely participate in M&As because of the heightened climate, reducing overall shareholder value for their companies. Regarding this possibility, [Duchin and Schmidt \(2013\)](#) find that deals completed during merger waves may be of poor quality, with worse post-merger returns, greater uncertainty about the deal value, higher CEO turnover, and weaker corporate governance compared to M&As conducted during non-wave periods. Overall, they argue that merger waves may provide opportunities for managers to engage in value-decreasing deals owing to the higher costs of external monitoring, providing evidence for the agency-driven motives of merger waves.

In a more recent study, [Phan \(2014\)](#) investigates CEOs' incentives to engage in M&As by comparing CEOs with higher and lower inside debt holdings. When a top executive has more inside debt holdings, the executive's interests are aligned more closely with the debtholders than the stockholders. Thus, it is unsurprising to find that firms with more inside debt holdings tend not to actively participate in merger activities, and these activities have different features. Such transactions generate higher bond returns but lower stock returns, are financed using less cash, and reduce firm-specific risks relative to other mergers ([Phan 2014](#)). [Phan \(2014\)](#) also highlights the importance of designing proper incentive contracts to align the interests of managers and shareholders.

As [Jaffe et al. \(2013\)](#) note, understanding CEOs' roles and characteristics is crucial for evaluating the performance of acquiring firms. [Jaffe et al. \(2013\)](#) report that CEOs with a history of successful deals may lead to significantly higher average shareholder returns when engaging in a merger. Conversely, CEOs with a history of unsuccessful mergers are likely to result in substantially lower average returns. Combined, these results suggest that CEOs' acquisition skills affect the probability of deal completion and post-merger returns, but these skill sets are not inherited by a firm when a successful CEO is replaced ([Jaffe et al. 2013](#)). Additionally, [Harford and Schonlau \(2013\)](#) study the reaction of directors to the outcome of a CEO's acquisition activity. They report that the more acquisitive a CEO is, the more positively the manager is viewed as a potential board member regardless of the actual outcomes of the acquisitions.

[Harford et al. \(2012\)](#) provide useful insights into the relationship between entrenched CEOs and acquisitions. They explore acquirer returns to explain why entrenched managers tend to make acquisitions that decrease shareholder value. They define CEO entrenchment as exercising 10 or more of the anti-takeover provisions of the Gompers, Ishii, and Metrick index ([Gompers et al. 2003](#)) and find that entrenched management is negatively related to post-merger acquirer returns. They argue that entrenched managers abuse defensive mechanisms not to erect barriers against hostile takeover attempts but to maintain their entrenched positions, resulting in lower post-merger acquirer returns relative to mergers conducted by value-maximizing managers.

[Aktas et al. \(2016\)](#) conduct an interesting but controversial study on the links between CEO characteristics and mergers. Unlike other reviewed studies, their study attempts to establish a relationship between CEOs' personal and psychological characteristics and the merger processes of acquirer or target firms. The main challenges in conducting this type of qualitative research come from defining measures of relevant psychological characteristics (e.g., narcissism in this case) and, more importantly, convincing colleagues and critics to accept the results. Nevertheless, [Aktas et al. \(2016\)](#) find that narcissistic CEOs are more likely to be self-centered, manipulative, and empathetic; negotiate transactions quickly; and have a lower probability of deal completion. Additionally, acquirers' cumulative abnormal returns are negatively related to their CEOs' narcissism levels.

3.2.2. Market Timing (Misvaluation)

The market timing (or misvaluation) hypothesis of mergers is not qualitatively different from the Q theory of mergers discussed in the previous section. In essence, a firm's equity is more likely to be temporarily misvalued during financial booms, and mergers prompted by stock mispricing collectively form merger waves during times of economic expansion. This hypothesis is based on [Myers and Majluf's \(1984\)](#) argument that managers

are often inclined to use overvalued equity to acquire other firms. However, this tendency only holds for transactions financed at least partly with stocks, as all-cash deals do not allow for the misinterpretation or misvaluation of the acquirer's payment. Similarly, [Baker et al. \(2004\)](#) highlight that managers may engage in acquisitions using overvalued equity to capitalize on temporary stock mispricing rather than pursuing personal benefits. As long as the post-merger returns are greater than the cost of acquisition, the manager can be seen as acting in the best interests of shareholders by enhancing short-term firm profitability.

Even when a merger driven by equity misvaluation incurs short-term losses for the acquiring firm, it should not be prematurely concluded that the merger was initiated because of managers' agency motives. Since the financial market is far from efficient, stock mispricing is often coupled with a market correction. When such a correction occurs, the acquiring firm's shareholders may incur short-term losses from the merger ([Shleifer and Vishny 1991](#)). However, this loss may be offset or outweighed by a value gain in the long run if the merger was carried out to enhance firm performance. Hence, it is critical to distinguish between the manager's agency motives and value-maximizing motives when assessing whether a merger prompted by stock mispricing creates or destroys shareholder value.

As such, [Shleifer and Vishny \(1991\)](#) argue that rational managers who are fully informed about the actual valuations of their firms' assets may exploit their temporarily overvalued stocks to acquire undervalued firms to protect and improve long-term shareholder value. Their claim is bolstered by [Andrade et al.'s \(2001\)](#) empirical evidence that acquirer value was greater than target firm value in two-thirds of mergers between 1973 and 1998. Similarly, [Rhodes-Kropf et al. \(2005\)](#) argue that firms with high firm-specific deviations from short-run industry pricing tend to acquire firms with low firm-specific deviations when both firms' assets are overvalued. They also provide evidence for the market timing hypothesis by showing that, for the 4025 mergers used in their study, the natural logarithm of the average market-to-book ratio of acquiring firms is 0.83, whereas that of target firms is 0.69. Merger intensity is also found to positively correlate with the short-term misvaluation of a firm's assets, suggesting that merger waves are likely to form during boom periods when equities are often traded at higher prices.

In contrast, an adverse business environment prompted by a recession might provide an opportunity for potential acquirers looking for a bargain. Cash-rich or well-diversified businesses less affected by an economic crisis may consider acquiring financially distressed firms forced to put their core or non-core divisions up for sale. Since recessions are often accompanied by a significant drop in stock prices, it becomes relatively cheaper for acquirers to fund the deals compared with normal times. The empirical evidence provided by [Bouwman et al. \(2009\)](#) shows that deals completed in the dot-com bubble era are associated with better long-term post-merger performance than deals completed in boom periods. However, [Ang and Mauck \(2010\)](#) warn that financially distressed targets, which are heavily underpriced with respect to their 52-week high and are often considered to be on a fire sale, do not generate positive returns even in the long run, hinting that an acquisition in a hostile business environment might simply be a bad investment decision stemming from managerial overconfidence.

[Krishnan and Yakimenko \(2022\)](#) examine the relationship between acquirers' leverage and M&A performance between banks and non-banks using a sample of 1410 observations from 2010 to 2017 in the US. The authors capture abnormal returns using 3-day and 7-day CAR windows to measure post-merger performance in the short-term and 6-month and 12-month CAR windows to measure the long-term performance. The authors find that banks with higher (lower) leverage perform worse (better) in the short run, whereas more (less) levered non-banks perform better (worse). Despite the lack of statistical significance, the relationship between leverage ratio and post-announcement returns in the long run is reversed for both banks and non-banks. These results are consistent with the market misvaluation hypothesis in that the acquiring firm's particular capital structure leads to stock mispricing.

4. Anti-Takeover Provisions and Their Effects on M&As

The empirical evidence we have reviewed thus far indicates that corporate takeover activity likely results in a revaluation of the target firm's equity. Most relevant studies report that target firms' share prices generally trend upward after announcing a successful merger. It is worth noting that given the gravity of the decision in terms of both the required capital and the involved stakeholders, an M&A attempt is likely to face opposition from various parties. Target firms, rivals, and regulatory authorities often contend that takeovers adversely affect consumer welfare by reducing competition and creating monopolies. The concern that market concentration poses an immediate threat to consumer interests has not gone unnoticed by lawmakers. Regulations to break up consolidations and discourage monopolies in the form of anti-takeover provisions and antimonopoly legislation have existed since the Sherman Act of 1890. Countless studies probe the effectiveness of anti-takeover provisions and antimonopoly laws and discuss how these measures may improve or reduce shareholder wealth. Nevertheless, the empirical evidence remains inconclusive¹¹. In this section, we review studies that investigate the impact of antitrust regulations on post-merger returns and firm performance.

By design, takeover defense mechanisms, such as poison pills, greenmails, and state anti-takeover regulations, are expected to safeguard target firms' shareholder value against corporate raiding and promote competition. However, numerous studies suggest that these mechanisms may not protect against managerial entrenchment. [Jarrell et al. \(1988\)](#) review studies conducted in the 1980s and find that anti-takeover measures that do not require major shareholder approval may induce managerial entrenchment and reduce shareholder value. However, measures that require such approval are unlikely to trigger losses due to conflicts of interest between shareholders and managers. Contemporary studies do not deviate much from the principle that anti-takeover provisions often tilt managerial incentives toward engaging in suboptimal mergers, increase monitoring costs, and, thus, reduce overall shareholder wealth¹². Government interventions in the form of state anti-takeover laws and antitrust regulations are no exception. For example, [Atanassov \(2013\)](#) utilizes event study methods to examine whether changes in state anti-takeover laws affect innovativeness, proxied by the number of new patents and citations per patent among firms headquartered in states that endorse anti-takeover laws. He reports that both numbers decline for firms in these states, suggesting that protections against hostile takeovers may incentivize managers to pursue myopic goals rather than investing in innovation that may benefit firms in the long run.

Recent findings from the US and international markets align with this evidence. For example, [Frattaroli \(2020\)](#) uses difference-in-differences regressions to examine whether passing the Alston decree has led to managerial entrenchment in French firms. He finds that reduced susceptibility to takeovers due to changes in the legal environment incentivizes managers to pursue personal benefits, but it does not significantly impact fundamental firm characteristics (e.g., employment, wages, investment, operating performance, capital structure, and payout policies). This result provides no evidence for the quiet-life hypothesis, the empire-building hypothesis, or the free-cash-flow hypothesis of managers. However, the proportion of equity in CEO compensation increases as a result of protectionist government intervention, suggesting that boards of directors directly bear greater monitoring costs and are forced to design better contracts for managers to realign the interests of managers and shareholders. [Dissanaike et al. \(2020\)](#) use the adoption of the European business combination reform in 2004 as a natural experiment to see whether government interventions lead to managerial entrenchment. They report that this regulatory change negatively impacted acquirers' post-merger returns, and they argue that reduced takeover threats may have prompted managers to engage in suboptimal, agency-motivated acquisitions that ultimately destroyed value for acquiring firms.

The reduction in shareholder value due to antitrust reform is not limited to Europe. For example, [Chung et al. \(2020\)](#) analyze firms and M&A deals in over 20 countries that adopted antimonopoly regulations. They consider these legislative changes as exogenous

shocks in a natural experiment setting and examine domestic M&A deals, finding that horizontal merger returns are approximately 4% lower after the reforms. Correspondingly, these deals are 27.6% smaller than pre-reform deals. Overall, [Chung et al. \(2020\)](#) argue that antitrust reforms decrease acquiring firms' shareholder value and that these losses may lead to improved consumer welfare. In sum, the literature shows that defense mechanisms to prevent takeovers and regulatory reforms most likely shift the alignment of shareholders' and managers' interests and increase monitoring costs, resulting in an overall decline in shareholder value.

5. Concluding Remarks and Directions for Future Research

This study provides a brief overview of the M&A literature with a focus on fluctuations in corporate takeover activities across different merger waves. First, we described the historical background of the formation and dissolution of the five M&A waves in the US market. We then reviewed academic studies to discuss firms' gains or losses from riding these waves. We showed that studies on M&A performance fail to find conclusive explanations for M&A potential value creation. In essence, target shareholders generally experience significantly better performance than bidding shareholders in the short term. A similar conclusion cannot be drawn regarding the combined gains across all shareholders. Prior studies indicate that acquiring firms may even perform worse in the long run. The acquirer's choice of payment reveals many important facts about the target firm's value. Since merger performance is measured using abnormal stock returns, we also reviewed the stock market's different reactions to varying payment methods for these transactions.

Next, we examined seminal studies that build theoretical frameworks to understand why firms engage in M&As and why merger waves form. We grouped these studies into those using the neoclassical economic framework and those taking the managerial behavior view. In each of these subsections, we reviewed historical and recent studies that attempt to explain why and when firms make acquisitions and how merger waves are formed. In essence, neoclassical theory endorses the view that a business combination occurs when an acquirer believes that a target's asset is undervalued. The managerial behavior view takes a slightly different approach and highlights managers' self-serving incentives to initiate acquisitions, especially when a firm can easily afford them. In the final section, we reviewed studies that examine the effects of anti-takeover mechanisms and regulations on shareholder value. In general, studies report that reduced takeover threats owing to either existing anti-takeover defenses or new antitrust reforms are associated with declines in shareholder value.

The studies documented in this review often discuss the empirical challenges associated with accurately measuring long-term post-merger performance. These issues include merging firms' independence of multiyear abnormal returns, as raised by [Mitchell and Stafford \(2000\)](#); selection bias in target choice; and the limitations of event studies. It must also be noted that conventional studies consider large M&A deals initiated by publicly traded companies as an extremely focused sample that represents only a small proportion of all deals ([Netter et al. 2011](#)). Empirical research on M&As is as likely to suffer from significant endogeneity issues as other corporate finance studies. These methodological concerns may persistently hinder corporate finance researchers from establishing cause-and-effect relationships based on empirical findings.

Furthermore, the market for corporate control seems to have developed very differently over the past few decades. In numerous cases, tech giants have acquired countless private firms to solidify their already large market positions. [Phillips and Zhdanov \(2013\)](#) indicate that large firms acquire small, innovative firms to maintain competitiveness and innovativeness. However, the sample they use to verify their theoretical hypothesis is extracted from publicly available data that generally do not include private acquisitions or negotiations. [Boone and Mulherin \(2007\)](#) note that public takeover activity represents only the tip of the iceberg when pre-public acquisitions, private acquisitions, and negotiations

are also considered. Future studies investigating why large companies purchase small, unlisted firms using extended datasets will contribute greatly to the literature.

Moreover, governmental authorities worldwide seem to be strengthening antitrust regulations via reforms to address the unprecedented consolidation of businesses in certain industries. Further studies are needed to determine how the recent horizontal mergers by corporate giants qualitatively differ from past monopolistic mergers. Similarly, future studies gauging the effectiveness of new antitrust regulations in curbing these giants' anticompetitive acquisitions and monopolistic pricing behavior will add value to the literature.

Our paper also appeals to academics and practitioners in re-examining the effect of mergers and acquisitions on long-term post-merger performance. Given the amount of capital required to fund a deal, an acquisition decision could be considered a long-term investment decision through which shareholders reap the benefits over a longer time horizon. From this perspective, the divide in the extant literature on post-merger stock returns is relatively less of a concern in the short run than in the long run. Recent studies pinpoint that growth in the M&A market brought dynamic changes in the determinants of long-term post-merger performance, such as environmental, cultural, regulatory, and technological factors. We briefly introduced some preliminary papers that closely look into how technological advancement, which enabled the sharing economy to thrive in the past decade, continued to fuel the growth of these firms via mergers, even in the presence of recessionary pressure. More active discussions must be made in this area of research to discern whether firms' takeover attempts in the sharing economy, both domestic and international, should be strictly regulated to ensure competition in the market and to protect shareholder rights. Similarly, there is a lack of literature that examines the association between M&A activity and environmental, social, and governance (ESG) challenges, as well as its ties with post-merger performance. This promising avenue awaits future research.

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Notes

¹ <https://imaa-institute.org/m-and-a-us-united-states/> (accessed on 1 January 2022).

² <https://www2.deloitte.com/us/en/pages/mergers-and-acquisitions/articles/ma-trends-report.html> (accessed on 23 May 2022).

³ <https://imaa-institute.org/m-and-a-us-united-states/> (accessed on 1 March 2022).

⁴ <https://money.cnn.com/2000/02/03/europe/vodafone/> (accessed on 15 June 2022).

⁵ Martynova and Renneboog (2008) provide a detailed summary of post-merger M&A returns during each of the five merger waves in their Tables 2 and 3. In addition, Mulherin et al. (2017) develop an extensive review of both contemporary works and past surveys of M&A literature.

⁶ Jarrell et al. (1988) survey event studies conducted in the 1980s and find that, in general, target shareholders experience large gains that often outweigh the losses of the bidder firm's shareholders.

⁷ For example, all-equity deals yield negative long-term returns, whereas all-cash deals provide positive returns (e.g., Loughran and Vijh 1997), and Mitchell and Stafford (2000) show that the payment method plays a crucial role in determining long-term post-merger returns. Huang and Walkling (1987), Agrawal et al. (1992), Rau and Vermaelen (1998), and Datta et al. (2001) show that tender offers may outperform other types of deals in the long run. Bradley and Sundaram (2006) claim that among all relevant factors, the target firm's type (i.e., whether it is publicly traded) contributes the most to post-announcement returns.

- ⁸ A disproportionate amount of attention focuses on understanding why target firms turn down bids or why choosing an auction over negotiations or vice versa requires a certain bidding strategy and will likely generate different returns for the bidder and target firms. Boone and Mulherin (2007, 2008) and Eckbo (2009) shed further light on these issues.
- ⁹ For brevity, we do not review articles on going-private transactions or on leveraged buyouts. Lehn and Poulsen (1989) suggest that the reduction in agency problems is the source of shareholder gains for going-private transactions. Renneboog and Vansteenkiste (2017) provide a detailed survey of leveraged buyouts.
- ¹⁰ Although there is rich literature on privatization, we do not review these articles as they are beyond the scope of our paper. For an extensive survey, please see the work of Megginson and Netter (2001).
- ¹¹ Interested readers can review the surveys of Jensen and Ruback (1983) and Straska and Waller (2014). These excellent reviews summarize earlier seminal studies and contemporary works that shed light on the impact of anti-takeover measures on takeovers, shareholder value, and post-merger firm performance.
- ¹² Cain et al. (2017) examine whether anti-takeover measures curb corporate raiding and hostile takeover attempts using an extensive sample that leverages 17 different state regulations passed between 1965 and 2014. They find that consolidation regulations and poison pills are ineffective in mitigating hostile takeover attempts. In addition, they find a positive relation between takeover susceptibility and firm value, suggesting that an active, competitive corporate control market is necessary for better governance and growth.

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