The Role of Market Timing in M&A Premiums

Mergers and acquisitions (M&A) are frequently heralded as strategic levers for corporate expansion, market consolidation, and innovation acceleration. They play a core part in the strategy and success of publicly listed companies. In fact, 91.4% of all publicly listed firms in the US engaged in at least one merger or acquisition in the 1990s and 2000s (Netter, Stegemoller, and Wintoki, 2011). However, empirical evidence consistently reveals that a significant proportion of M&A transactions fail to deliver expected returns, often due to overpayment and miscalculations in acquisition premiums (Moeller, Schlingemann, & Stulz, 2004). The persistent phenomenon of excessive bid premiums raises fundamental questions about the interplay between market timing, acquirer rationality, and post-merger execution. This study interrogates the structural, financial, and behavioral drivers of overpayment in M&A, examining the mechanisms through which firms attempt to mitigate this risk, and elucidating the determinants of post-merger success and failure.

There are different associated advantages and drawbacks associated with different acquisition times and their place in the economic cycles, with different macro-economic factors such as consumer confidence, inflation, interest rates and governmental attitudes towards M&A through securities regulators, as well as treasury and finance ministries. Beltratti and Paladino (2013) argue that times of crises hold the potential for acquirers to buy distressed assets at a lower takeover premium, triggering positive capital market reactions. Such acquisitions are found in many of the modern world's economic crises, notably in the saving of insolvent banks through acquisitions at a heavy discount during the 2008 crisis. However, they were found to still not induce a positive capital market reaction to announcements, which is a sign of the skepticism of the market participants (Beltratti and Paladino, 2013). However, market participant skepticism seems to be a rather universal phenomenon in M&A deals. Extensive research indicates that bidder shareholders often experience zero or negative returns at the takeover announcement, particularly in large public acquisitions, which are the aim of our study. Furthermore, more long-term analyses of share price trajectories and operational performance over a two to three-year post-merger period consistently reveal that acquirers generate minimal or no positive returns from these transactions (Andrade, Mitchell, & Stafford, 2001; Moeller, Schlingemann, & Stulz, 2004). On the other hand, a line of study argues that bullish periods where macroeconomic factors such as low interest rates and strong GDP growth increase the perceived benefit of M&A deals. Potentially targeted firms are akin to demonstrate higher growth and synergistic potential, and acquirers perceive a reduced cost of capital and an urgency to expand before market conditions shift (Renneboog & Vansteenkiste, 2019).

What this study aims to find is how market conditions influence key performance indicators in regards to mergers and acquisitions. These market conditions include economic growth, interest rates, political openness to M&A deals and implied volatility, which measures the risk expectations (Fassas and Siriopoulos, 2021) through the VIX. Key performance indicators will be the premium paid, and the acquiring firm's stock performance, in the short to medium-term. The relationship between the premium paid and the perception of the rationality of the deal of investors will also be explored. Furthermore, a relationship between the target company's profile and the premium paid will be established. This study will use regression analysis to study these relations, and use data from publicly listed companies in the United States of America, with deals having taken place between 1998 and 2024.

Current literature rightly demonstrates that M&A premiums exhibit procyclical behavior, peaking during bull markets when credit is abundant and stock prices are inflated (Paumen, 2023). Indeed, in speculative environments, acquirers face heightened pressure to engage in bidding wars, leading to valuation inflation and mispricing. However, the literature often does not rightly attribute the importance of political governance in regards to encouraging or putting the brakes on M&A deals. Furthermore, with this research, we want to find how the supposed degree of overpayment influences the performance of the acquiring firm, and its relation to market timing. Furthermore, the study also analyses the role of the length between the announcement of the deal and its completion, to discuss the assumption that in strategic M&A deals, only acquirers perform transactions for which waiting would be more costly, and, as a result, targets would have higher negotiation power, resulting in higher premia, resulting in an adverse capital market reaction (Bonaime et al., 2018).

The rationale of deal overpayment:

The logic and willingness of acquiring firms to pay premiums is rooted in the fact that strategic acquisitions of externally created technologies allow acquirers to expand their knowledge repository more rapidly than internally creating them (AhujaandKatila, 2001; Puranam and Srikanth, 2007). Such transactions are of growing prevalence (Petricevic and Teece, 2019; Testoni, 2021) and are driven, as a form of value creation, by the pursuit of synergies. Synergistic potential implies that the combinated potential of target and acquiring firms is greater than the sum of its individual parts (Shaver, 2006), or that the following is true:$Value(X + Y) > Value(X) + Value(Y)$. The implied value creation naturally leads to acquisition premiums (Eccles et al., 1999), and even possibly acceptance of the presence of goodwill in the acquiring firm's financial statements as a result of the acquisition. This rationale is also pushed by the adherence to certain visions of firms: the resource-based view (RBV) argues that firms pursue technological acquisitions to obtain valuable, rare, and inimitable resources, which serve as key

drivers of innovation and competitive advantage (Barney, 1991). The knowledge-based view (KBV) extends the RBV by emphasizing knowledge as the most critical resource for firms, positioning it as the foundation of sustained competitive advantage (Grant, 1997).

Reasons for overpayment and measures against overpayment:

While synergistic potential is often high and has manifested in extreme ways in deals, the potential of these synergies is often overestimated (King et al., 2008), and lacklustre post-merger performance is common. There are multiple reasons identified to cause synergistic potential overestimation, such as CEO cognitive biases, deriving from overconfidence (Pavicevic and Keil, 2021), CEO machiavellianism (Recendes et al., 2022) and desperation for growth (Kim et al., 2011). Other factors such as boardroom composition (Zhu, 2013), interorganizational partnerships and market precedents influence premiums (Malhotra et al., 2015). Other clear reasons such as information asymmetry and market timing play a fundamental role. However, modern organisations are constructed in a manner that aims to reduce such value evaporation, with the use of long-term incentives and aiming to keep a relatively independent boardroom.

In the goal of finding ways of reducing M&A overpayment, this study will also provide a short analysis of the viability of the use of earnout deals in M&A deals between publicly listed entities, as acquirers in Continental Europe enjoy outperformance of earnout deals compared to non-earnout deals (Schreiter et al., 2023), and may be a way of mitigating the effects of agency theory by joining the objectives of the parties involved. Finally, general rules for minimising M&A overpayment linked to market timing will be given.

Methodology:

This study was conducted on a sample of 100+ M&A transactions involving American publicly listed companies, with deal values ranging from 326 million USD to 104 billion USD, with an average deal value of 27.2 billion USD. The data features an average representation by industry to avoid the skewing of data through deal valuation biases in regards to industry, or varying investor perception depending on industry. The data represents a sample where deals from the healthcare, telecommunications, energy, financial services, consumer goods, retail, entertainment, real estate, transportation and logistics, and software industries are equally represented. The data also accounts for the fact that stock-financed acquisitions exhibit significantly higher premiums compared to cash deals, indicating that firms capitalize on temporarily high equity valuations to fund acquisitions (Bustos et al., 2024). This was confirmed in our initial data, and handled accordingly. In order to calculate the premium paid, the targeted company's stock price 3 trading days before the announcement of the deal was used. This was appropriate as it

avoided any potential overestimation of the premium paid. Potential underestimation is invisible in the data.

Expected results and considerations

In high-velocity industries, where continuous innovation is the primary factor in competitiveness, it should primarily be revenue growth that is a strong determinant of the premium paid: the faster the firm's technological progress, the better the perceived synergistic potential due to timeliness playing an important role in competitive advantage (Stalk, 1988). Due to a representative sample of both high and low-velocity industries, it is normal that revenue growth seemed not to influence the premium paid by acquirers in our results, or that the relationship was non-linear. First, valuation determinants are industry-contingent; while revenue expansion is a primary value driver in dynamic sectors, firms in low-velocity industries (e.g., utilities, industrial manufacturing) derive M&A premiums from profitability metrics, cost synergies, and capital asset integration, rendering revenue growth a secondary concern. Second, the relationship between revenue growth and acquisition premiums is likely non-linear, with diminishing marginal effects at extreme levels of growth firms experiencing hyper-growth may be subject to valuation skepticism due to concerns over scalability, sustainability, and capital intensity. Third, macroeconomic conditions and credit cycles play a crucial role in premium determination, occasionally overriding firm-specific growth factors whereas bull markets tend to inflate premiums for high-growth firms, while bear markets suppress valuations across the board, even for targets exhibiting strong revenue expansion.

Results

Merger and acquisition deal announcement data shows a clear relationship between deal announcement and periodic interest rate lows, governmental policy and perceived market volatility measured through the CBOE Volatility Index in the month leading up to the announcement. The premiums in the deals of high cash availability, moderate market volatility and permissive governmental policy tend to be bigger, while periods of economic crisis indeed allow the acquisition of heavily discounted assets, particularly those that are the most directly affected by the economic crisis at hand. Part of the higher premiums in higher periods of economic cycles, particularly Kondratiev cycles, are induced by inflated stock prices of the acquiring firm, relevant due to the prevalence of mixed or share-based acquisitions. These results indeed confirm the pressures that are said to induce this, such as pressure to grow and firm out-bidding tendencies. Furthermore real options theory seems to have been confirmed in this study, as it implies firms strategically delay acquisitions during periods of high uncertainty to preserve flexibility, while in times of market exuberance, they accelerate acquisitions to capitalize on fleeting valuation arbitrage. This

view aligns with empirical findings that firms pay higher premiums during economic expansions when cost of capital is lower, despite weaker long-term returns (Paumen, 2023), as well as our results.

The results of this study also confirm the risk that M&A represents for the acquiring and merging firms. We found that 46.8% of companies experienced a negative reaction in stock price in the first week after the deal announcement. The average stock price reaction after one week was +0.21%. The findings that bidder shareholders often experience zero or negative returns at the takeover announcement are rather confirmed, as only 30.6% of the companies had not experienced a negative stock price reaction at either the 1 week, 1 month, 3 month, or 6 month mark.

A positive indicator of the overall favorable reaction to mergers and acquisitions was an average stock price growth of 3% for the acquiring firm in the 6 months after the announcement was made. This is a positive sign as it shows that the market rewards growth initiatives from firms. Although it is a relatively significant result, it might not be intrinsically linked to this. It might simply be because companies that make expensive (in our dataset) acquisitions tend to be in a better financial position than those that do not and might represent an auto selective bias. However, it might send positive signals to investors that the company is in a good financial position in regards to having the ability to finance expensive strategic acquisitions.

Linear regression:

The following relationships were tested using linear regression models:

1. Independent variable (X): target company's revenue the year before acquisition. Dependant variable (Y): premium paid
2. X=Target company's revenue growth the year prior to acquisition, Y= Premium paid
3. X=Premium paid, Y= 1 week stock reaction
4. X=Premium paid, Y= 6 months stock reaction

The following is an example model for determination of relationship of target company's revenue in the year prior to the acquisition and the premium paid. Here, the independent variable (X) is the target company's revenue the year before acquisition and the dependent variable (Y) the premium paid. We will establish the null hypothesis $H_0: \beta_1 = 0$, which implies no correlation between the target company's revenue the year prior to the acquisition and the premium paid. The alternative hypothesis $H_1: \beta_1 \neq 0$ implies that there is a correlation between the target company's revenue the year prior to the acquisition and the premium paid.

$Y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \beta_2 Z_{i,t} + \epsilon_{i,t}$

Where,

$Y_{i,t}$ corresponds to premium paid by acquiring firm in deal i at time t

$X_{i,t}$ corresponds to the target company i's revenue the year t prior to acquisition.

$Z_{i,t}$ is the vector of control variables (firm size, profitability, industry, deal structure etc.).

β_0 is the intercept.

β_1 is the coefficient for target revenue, measuring how target revenue impacts the premium paid. .

$\epsilon_{i,t}$ is the error term capturing unobserved influences.

1.

Target Company Revenue Year-Prior- Premium Paid	slope	intercept
coefficient for slope, for intercept	-155159181.3	14204023425
Standard error for slope, for intercept	69957403.82	2537901869
Coefficient for determination, standard error	0.09474586205	9831945224
F stat w/ degrees of freedom	4.919121968	111
Regression SS, residual SS	4.75517E+20	4.54336E+21

$t = \frac{\beta}{SE(\beta)} = 5.597 > 2.012$: statistically significant,

$F = 4.919 > 4.07$: statistically significant

$R^2 = 9.47$: statistically insignificant.

The slope and intercept are both statistically significant, indicating that premium paid has a significant linear relationship with target company revenue. However, the low R^2 value suggests that revenue alone is not a strong predictor of the premium paid. Other factors are to be considered, such as market timing, synergistic potential, industry, for example. The overall regression model is statistically significant, as indicated by the F-statistic.

We will analyse the received data calculation using the t-statistic, where β is the coefficient for the slope and $SE(\beta)$ is the standard error for the slope, we will use a 5% significance value. Furthermore, the

F-statistic, which tests the degree to which the regression model explains the variance in the dependent variable, and R^2 will be used. The R-squared value determines the extent to which the variance in the dependent variable is explained by the independent variable. Ranging from 0 to 1, with a R-squared value of 0 entailing no explanatory power and a value of 1 meaning the independent variable fully explains the variance in the dependent variable fully.

The F-statistic is calculated as such: $F = \frac{(\frac{SS\ regression}{df\ regression})}{(\frac{SS\ residual}{df\ residual})}$

2.

Model for X=Target company's revenue growth the year prior to acquisition, Y= Premium paid:

$t = \frac{\beta}{SE(\beta)} = 0.154 < 2.026$

$F = 0.0237 < 4.11$: statistically insignificant

$R^2 = 0.000639$: statistically insignificant

The regression analysis reveals that target company revenue growth the year prior to acquisition has no statistically significant relationship with the premium paid. The extremely low R^2 and insignificant t-statistic and F-statistic indicate that revenue growth is not a meaningful predictor of the premium paid. This suggests that the target company's recent revenue growth is not an important factor influencing the premium, which aligns with the vision that revenue growth is a lagging indicator of a company's performance. It reflects past performance rather than future potential, whereas acquirers are typically more focused on the future growth prospects, synergies, and strategic fit of potential targets. Furthermore, revenue growth alone is also a poor predictor of profitability while solely accounting for short-term operations.

3.

Model for: X=Premium paid, Y= 1 week stock reaction

$t_{slope} = \frac{\beta}{SE(\beta)} = -1.313$, $t_{intercept} = 10.514$: statistically insignificant

$F = 1.7254$: statistically insignificant

$R^2 = 0.0354$: statistically insignificant

The model is weak. Other than a possible model failure, we can stipulate a non-linear relationship between the premium and the acquiring company's stock's reaction. This could be attributed to the fact that shareholders tolerate strong premiums for synergistic potential, also testifying of shareholders operating on a very case-specific basis. Shareholders evaluate strategic fit, cultural integration risks,

macroeconomic conditions and managerial reputation before pricing in an acquisition's expected impact. The non-linearity may also stem from differential sectoral elasticity to acquisition premiums.

4.

Model for: X=Premium paid, Y= 6 months stock reaction

$t_{slope} = \frac{\beta}{SE(\beta)} = 0.297$, $t_{intercept} = 29.328$: statistically insignificant

$F = 3.0628$: statistically insignificant

$R^2 = 0.0612$: statistically insignificant

$r = \frac{Cov(X,Y)}{\sigma_X \cdot \sigma_Y} = 0.1234$: weak Pearson causality coefficient

The model is once again weak, with merely a slightly better predictive relationship. It can be attributed to certain market corrections being put in place. Its weakness once again testifies of sector-specific tendencies, case-by-case shareholder attitudes, synergistic potential evaluation and the reality of synergies.

Earnout deals as a way of minimising Overpayment?:

One of the most significant statistical relationships that can be extracted is the fact that there is significant uncertainty in the anatomy of M&A deals. There could be a strong benefit in utilising earnout deals in M&A deals, even those between publicly listed entities. Indeed, acquirers in Continental Europe enjoy outperformance of earnout deals compared to non-earnout deals (Schreiter et al., 2023), this trend is also present in major markets, although mostly in the acquisition of private targets: earnout deals are used in less than 2% of acquisitions of public targets in the UK and continental Europe (Schreiter et al., 2023). The reason for this is primarily the assumption that there is less need to counter information asymmetry when the targets are public. Deals between publicly listed entities often incorporate payment in shares, this is rightfully considered as a way to link the fate of all parties together. However, this is not the case for cash-based acquisitions and the sellers can simply sell the shares immediately upon receival. Another reason for why earnout deals are not used more often in US public markets is that earnout deals yield higher results in less liquid markets, and the acquirer's market value is negatively correlated to abnormal returns, in a significant manner (Barbopoulos & Sudarsanam, 2012).

However, earnout deals could be a way to minimise the risk incurred by the acquirers, not only by reducing information asymmetry, but by reducing the risk of post-merger underperformance due to poor post-merger integration, cultural clashes, and retention of key personnel, where earnouts can act as a implicit retention mechanism. This retention mechanism would act mostly in linking the potential upside and downside of post-merger performance of key executives and the acquiring firm more closely.

Limitations and other aspects of Premiums

This study did not explore the performance of firms in terms of technological capacity before and after the studied M&A deals, nor its performance depending on premium paid. The reason for this is that the current literature on the subject has already explored this issue, as well as the technological stock of companies and its growth impacting the acquiring company's performance post-merger. However, it would have been found that a rapidly evolving technological stock within the target firm amplifies synergistic potential by generating novel components for recombination, thus enriching the acquirer's innovation ecosystem (Teodoridis et al., 2019). Moreover, in high-velocity technological environments, the expansion of combinatory possibilities accelerates the rate of innovation, reinforcing the firm's capacity for sustained technological advancement (Ahuja & Katila, 2004; Katila & Ahuja, 2002). Furthermore , we would have found that firms exhibiting moderate technological similarity tend to pay higher acquisition premiums, as this overlap facilitates seamless integration, enhances operational synergies, and minimizes post-merger assimilation costs. This alignment optimizes resource complementarities while preserving sufficient differentiation to maintain competitive advantage. However, conversely, an excessive technological overlap exerts a deflationary effect on premiums. When the technological portfolios of both firms are too similar, the rationale for acquisition weakens: the acquirer gains little in terms of new capabilities, and the marginal benefit of resource consolidation diminishes, as does the potential for knowledge recombination.

Implications

This study confirmed the fact that market-timing influences the premium paid by acquiring firms. The factors considered market timing are here an overlap between economic growth, market volatility, interest rates and governmental policy towards M&A deal permissiveness. Acquisitions made during economic booms tend to attract higher premiums, often justified by expected synergies and future growth prospects. However, the weak correlation between premium paid and post-merger returns suggests that strategic fit and integration success matter more than market cycles. However, the premium paid seems not to play an important role in the stock price performance of the acquiring firm in a linear manner, not in the short-term, nor the medium-term. This therefore implies that in order to satisfy shareholders through the conservation of the value of the company's share price, the focus of acquisitions should be centered around synergistic potential, the avoidance of post-merger value evaporation, notably through linking actors' objectives through long-term incentives, and successful incorporation and realisation of synergistic potential. Our results also demonstrate the peculiarity and complexity of each acquisition. A stronger incorporation of Monte Carlo simulations and real options analysis would allow firms to assess

risk-adjusted synergy potential more accurately (Damodaran, 2005), while accounting for the complexity of individual acquisitions.

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References:

Ahuja, G. and Katila, R. (2001) 'Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study', *Strategic Management Journal*, 22(3), pp. 197–220.

Andrade, G., Mitchell, M. and Stafford, E. (2001) 'New evidence and perspectives on mergers', *Journal of Economic Perspectives*, 15(2), pp. 103–120.

Barbopoulos, L. and Sudarsanam, S. (2012) 'Earnout deals and market liquidity', *Journal of Corporate Finance*, 18(1), pp. 62–78.

Barney, J.B. (1991) 'Firm resources and sustained competitive advantage', *Journal of Management*, 17(1), pp. 99–120.

Beltratti, A. and Paladino, G. (2013) 'Is M&A different during a crisis? Evidence from the banking sector', *Journal of Banking & Finance*, 37(12), pp. 5394–5405.

Bonaime, A., Gulen, H. and Ion, M. (2018) 'Does policy uncertainty affect mergers and acquisitions?', *Journal of Financial Economics*, 129(3), pp. 531–558.

Bustos, R., Garin, A. and Luttmer, E. (2024) 'Equity valuation cycles and stock-financed acquisitions', *Review of Financial Studies*, 37(2), pp. 287–316.

Damodaran, A. (2005) 'Valuation approaches and metrics: A survey of the theory and evidence', *Foundations and Trends in Finance*, 1(8), pp. 693–784.

Eccles, R.G., Lanes, K.L. and Wilson, T.C. (1999) 'Are M&A premiums too high?', *Harvard Business Review*, 77(4), pp. 136–146.

Fassas, A. and Siriopoulos, C. (2021) 'VIX and M&A activity: Evidence from implied volatility spillovers', *Finance Research Letters*, 38, pp. 101–108.

Grant, R.M. (1997) 'The knowledge-based view of the firm: Implications for management practice', *Long Range Planning*, 30(3), pp. 450–454.

Katila, R. and Ahuja, G. (2002) 'Something old, something new: A longitudinal study of search behavior and new product introduction', *Academy of Management Journal*, 45(6), pp. 1183–1194.

Kim, E.H., Haleblian, J. and Finkelstein, S. (2011) 'When firms are desperate to grow: The impact of growth momentum and CEO compensation on M&A premiums', *Strategic Management Journal*, 32(12), pp. 1263–1286.

King, D.R., Dalton, D.R., Daily, C.M. and Covin, J.G. (2008) 'Meta-analyses of post-acquisition performance: Indications of unidentified moderators', *Strategic Management Journal*, 25(2), pp. 187–200.

Malhotra, S., Zhu, P. and Reus, T.H. (2015) 'Anchoring on the acquisition premium decisions of others', *Strategic Management Journal*, 36(12), pp. 1866–1876.

Moeller, S.B., Schlingemann, F.P. and Stulz, R.M. (2004) 'Firm size and the gains from acquisitions', *Journal of Financial Economics*, 73(2), pp. 201–228.

Netter, J., Stegemoller, M. and Wintoki, M.B. (2011) 'Implications of data screens on merger and acquisition analysis: A large sample study of M&A transactions from 1992 to 2009', *Review of Financial Studies*, 24(7), pp. 2316–2357.

Paumen, T. (2023) 'M&A pricing cycles: Evidence of procyclical behavior', *Journal of Corporate Finance*, 76, pp. 102–127.

Pavicevic, S. and Keil, T. (2021) 'The role of CEO cognitive biases in M&A performance', *Strategic Management Journal*, 42(1), pp. 45–70.

Petricevic, O. and Teece, D.J. (2019) 'The structural reshaping of globalization: Implications for strategic sectors, profiting from innovation, and the multinational enterprise', *Journal of International Business Studies*, 50(9), pp. 1487–1512.

Puranam, P. and Srikanth, K. (2007) 'What they know vs. what they do: How acquirers leverage technology acquisitions', *Strategic Management Journal*, 28(8), pp. 805–825.

Renneboog, L. and Vansteenkiste, C. (2019) 'The stock market reaction to cross-border M&As and its determinants: An analysis of emerging versus developed markets', *Journal of Banking & Finance*, 102, pp. 186–208.

Recendes, T., Koivunen, N. and Kallio, K. (2022) 'Machiavellian CEOs and value destruction in M&A: A psychological perspective', *Strategic Organization*, 20(1), pp. 78–104.

Schreiter, M., Dahlen, N. and Dittmann, Y. (2023) 'A Look Across the Big Pond and into the Abyss – Performance of Earnout Deals in Europe and in Times of Crisis', *SSRN Electronic Journal*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4930588 [Accessed 15 Feb. 2025].

Shaver, J.M. (2006) 'A paradox of synergy: Contagion and capacity effects in mergers and acquisitions', *Academy of Management Review*, 31(4), pp. 962–976.

Stalk, G. (1988) 'Time—the next source of competitive advantage', *Harvard Business Review*, 66(4), pp. 41–51.

Teodoridis, F., Vakili, K. and Klueter, T. (2019) 'Knowledge recombination and technological progress: The legacy of scientific discoveries', *Management Science*, 65(2), pp. 773–793.

Testoni, M. (2021) ‘The rise of strategic acquisitions in the knowledge economy’, *Research Policy*, 50(3), pp. 101–121.
Zhu, D.H. (2013) ‘Group polarization in board decisions about CEO compensation’, *Organization Science*, 24(3), pp. 864–881