MASTER THESIS

M&A IN THE NORDICS: HOW STRATEGIC PATTERNS DRIVE SUSTAINED VALUE CREATION

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15 May, 2023

MSc in Economics and Business Administration
(*Finance & Strategic Management*)

Number of Characters: 244,755
Number of Pages: 141

ABSTRACT

The mergers and acquisition (M&A) literature is extensive and rapidly growing in line with the acquisition market. However, the discussion of whether M&As are effective in creating value is intensely contested, with a variety of opposing views and findings. Considering the size of the Nordic M&A market, surprisingly little evidence exists on the performance of Nordic acquirers. Furthermore, the scarcity of research assessing the performance of a program-level strategy is even more pronounced within this context. Through a sample of 2,328 Nordic transactions from 2001-2022, this thesis investigates the impact of strategic patterns on sustained value creation by formulating four strategies (*Programmatic, Large deal, Selective,* and *Diminutive*). The strategy typology combines different characteristics in terms of acquisition frequency and size. To assess the relative value creation, a long-term event study is conducted and supplemented with a regression analysis incorporating well-documented value drivers as control variables. The study employs a multitude of time lags and an amalgamation of seven market- and operating performance measures to provide a more detailed and encompassing assessment of value creation.

The thesis contributes to the current M&A literature with the following findings: (1) In the Nordics, M&A creates positive long-term abnormal acquirer stock market returns, albeit negative long-term abnormal acquirer profitability. (2) From a market perspective, the programmatic strategy creates significant value, whereas the selective and diminutive strategy deplete value. In this connection, the large deal strategy creates value, although the results are insignificant. (3) From an operating perspective, the programmatic strategy yields significant value depletion. The diminutive strategy looks to deplete value, whereas the large deal and selective strategy create value, although these findings are insignificant. (4) Overall, the large deal strategy exhibits the greatest potential for value creation, followed by the programmatic strategy, the selective strategy, and the diminutive strategy. When adopting previously documented value drivers to assess the robustness of the findings, (5) acquirer size, valuation, macroeconomic context, and bidder-target relatedness seem to play a significant role in explaining abnormal market- and operating performance, whereas target-target relatedness, means of payment and cross border transactions hold less explanatory power in a Nordic context.

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PART I

INTRODUCTION

1. INTRODUCTION

1.1 Background and motivation

In the contemporary global business arena, it is imperative for companies to continuously seek avenues for growth. This growth can be attained through organic or external means (Penrose, 1959), such as mergers and acquisitions (M&A)[1]. The magnitude of the acquisition market, which recorded a record total deal value exceeding $5 trillion in 2021, has resulted in significant scholarly attention towards research in the domain (Nishant, 2021). Although scholars acknowledge the critical role of M&A as a strategic mechanism to revitalize and restructure organizations (Haleblian et al., 2009; Brueller et al., 2014), an extensive body of research reveals that a majority of acquisitions fail to deliver the promised synergies or expected value (cf. Seth et al., 2002; Schweizer, 2005; Sirower & Sahni, 2006). Following 2021's deal value record, the year of 2022 presented a daunting set of challenges to deal-making as inflation, interest rates, capital availability, geopolitical tensions, and amplified regulatory oversight exerted unparalleled pressure on corporate M&A teams (Bain, 2023). While altering a firm's acquisition pattern is commonly perceived as an expensive endeavor (Greve, 2003), the changing environment and momentary decelerating momentum of M&A activity allows for a period of recharge, reflection, and renewal in terms of companies' long-term M&A strategy.

Although most M&A transactions have been associated with value depletion, research indicates that certain subgroups of acquirers generate positive value from such activity. Nonetheless, scholars have yet to fully identify these groups, leaving the long-term performance of firms engaged in M&A largely unexplained (Andrade et al., 2001; King et al., 2004). Prior research examining M&A performance has principally emerged in isolated silos of focus characterized by heterogeneity in theories and methodologies (Bauer & Matzler, 2014). As a result, research has contributed to fragmented findings and inconsistent application of methodologies (Cording et al., 2010; Meglio & Risberg, 2010), causing alternative explanations to be overlooked (Leik, 1997). As outlined by Barkema and Schijven (2008: 595) "*important contingencies are at play and, thus, researchers need to dig deeper*" in order to expound the impediments to M&A. A quintessential quandary in M&A literature is the need for a plurality of time lags and synergetic amalgamation of both market- and accounting performance measures (Thanos & Papadakis, 2012). This thesis aims to probe these gaps by applying market- and accounting metrics spanning over multiple time periods alongside a strategy typology framework that deviates from the dichotomous view in prior performance literature. The methodology applied in this paper should provide a more holistic perspective in hopes of contributing

[1] The concept of M&A is central to this study. Hence its definition is deemed crucial. M&A refers to the process in which two independent firms combine. Throughout this paper, the term M&A will be used as a single phenomenon, although it is essential to note that the concepts of merger and acquisition are distinct. According to DePamphilis (2015), a merger is defined as "*a combination of two or more firms in which all but one legally cease to exist*" (p. 727), while an acquisition is defined as "*the purchase by one company of a controlling ownership interest in another firm, a legal subsidiary of another firm, or selected assets of another firm*" (p.723). Despite being technically incorrect, "acquisition", "merger" , and "M&A" are used synonymously in this thesis.

to the development of more encompassing theories regarding the M&A phenomenon, especially in relation to long-term strategic patterns.

1.2 Research question

Expanding the Nordic empirical research on value creation associated with M&A is deemed both necessary and meaningful. Nonetheless, a more significant motivation lies in finding empirical evidence concerning the variations in long-term value creation across different M&A strategies. Accordingly, the principal aim of this thesis is to explore the following research question:

How does M&A strategy affect long-term acquirer value creation?

In order to provide a comprehensive answer to the aforementioned research question, the authors formulate the following sub-questions:

- *How does M&A strategy affect long-term market return of the acquirer post-acquisition?*
- *How does M&A strategy affect long-term profitability of the acquirer post-acquisition?*
- *To what extent can previously examined macro-, deal- and firm-specific variables explain abnormal performance across different M&A strategies?*

To answer these questions, the present study has constructed hypotheses guided by a literature review of prevalent theory and empirical evidence. The hypotheses are tested and analyzed on a sample of Nordic acquisitions. Two distinct methodologies are employed as a proxy for value creation. Initially, the study examines abnormal stock market performance to demonstrate the presence of value creation. Subsequently, the study evaluates abnormal operating performance by analyzing profitability in terms of five accounting measures. Last, macroeconomic conditions in addition to a selection of well-established deal- and firm-specific value drivers in the context of M&A is evaluated to ascertain their impact on value creation and explanatory power on the strategies.

1.3 Contribution to academia

The thesis can be distinguished from other research by its emphasis on distinct strategies in the Nordic market. Although a large body of research has investigated potential value drivers in M&A, these are still to be applied in a Nordic context. Moreover, the thesis allocates a split focus on both serial acquirers, which have gained a lot of attention in recent M&A literature, and infrequent acquirers, who have mostly been left out of the discussion. Through the formulation of M&A strategies, further defined in Part II, the paper aims to assess relative performance among acquirers. Much like a single decision made in business' day-to-day operations is a poor predictor in defining a company's overall strategy or assessing the company's managerial ability, single acquisitions are unlikely to be

representative of an acquirer's ability to create value from acquisitions. Still, contemporary literature mainly treats acquisitions as an isolated occurrence. Instead, this paper employs a process perspective by looking at acquirers at a program-level of analysis. The authors believe that this perspective may shed light on why there are competing views on M&A in current literature and hope to narrow the gap by better explaining the mediation between acquisitions and value creation. Thereby, provide actionable insights for managers, strategists and researchers alike.

1.4 Delimitations

To ensure validity and value of the research, the authors elect to delimit specific aspects, thereby allowing for a thorough and focused analysis. To begin, measuring value creation is contingent on various methodologies and stakeholder perspectives. In this thesis, the focus is limited to the value generated to shareholders. Moreover, the study centers solely on the value creation for the acquiring firm. Such perspective is taken given the thesis's aim to study distinct acquisition strategies but also given a significant degree of consensus related to value creation in target firms (c.f. Cartwright & Schoenberg, 2006; Alexandridis et al., 2010; Rose et al., 2017). An additional delimitation of the thesis pertains to the exclusive use of a long-term perspective. Specifically, the research employs a long-term event study to analyze stock returns and five profitability measures across three event windows. The employed event windows are primarily based on prior literature within the realm of M&A, thus increasing the validity of the findings. In addition to a temporal scope spanning from 2001 to 2022 and encompassing M&A transactions across various economic cycles, the study is geographically constrained to the Nordic market. The present research endeavors to fill a conspicuous gap in the current literature regarding M&A in the Nordic region. Moreover, studying these markets collectively is deemed appropriate on account of their analogous legal systems, corporate governance mechanisms, and business cultures (La Porta et al., 1998; Lekvall et al., 2014), thereby ensuring similar protection for shareholders and mitigating the influence of diverse accounting practices.

The thesis is likewise delimited by diverse methodological considerations. First, the M&A strategies are bound to a typology covering average acquisition frequency and relative size. Subsequently, the hypotheses developed are based on a review of the most pertinent literature. While the authors adopt a positivist perspective, as explicated in Section 6.1.1, it is worth noting that the hypotheses are confined to the literature review, which may incite subjective influences. The methodology also necessitates crucial prerequisites in terms of the accessibility of data for the sample firms. As such, the final data sample encompasses solely publicly listed firms, which consequently increases the likelihood of a survivorship bias (Brown et al., 1992) and reduces the generalizability of the outcomes. Additionally, the data selection criteria mandate a deal value, leading to the exclusion of a significant number of transactions, again reducing the generalizability of the findings. The methodology further entails a long-term event study, multiple regression, and various statistical tests – all of which are intended to promote the validity and reliability of the outcomes. Comprehensive

elucidations and critical reflections of the methodological choices are provided in Section 6. While more advanced approaches could have been adopted, the methods used are deemed sufficient to address the research problem and appropriate within the confines of the thesis scope.

1.5 Thesis structure

The thesis is structured in accordance with academic standards, albeit with an emphasis on presenting the reader with a coherent and logically arranged flow of information. The content has been partitioned into eight overarching chapters, each encompassing sections supplemented by sub-sections that have been methodically crafted to address distinct themes.

Part I - The initial part includes an introduction that provides a background, presents the research question, specifies the scope, and delineates the paper's overall structure.

Part II - The next part presents an elucidation and overview of the conceptual framework, which serves as a base for the methodological approach and analytical aspects of the thesis.

Part III - The third part encompasses a literature review and facilitates an introduction to M&A, elucidates strategic patterns, and presents prior empirical research findings. Subsequently, the hypothesis section serves as an extension to the literature review, proceeding to expound upon twelve hypotheses supported by relevant theories and empirical observations.

Part IV - The fourth part comprises a data and methodology section. Initially, the methodology enables a comprehension of the methodological choices and procedures implemented. Next, the data section reveals the sample selection process, followed by descriptive statistics pertaining to the final sample.

Part V - The succeeding part is devoted to the results alongside analytical insights and discussions. The chapter commences by employing the event study, whereby the outcomes are delineated, accompanied by statistical tests. The chapter ends with an explanatory regression to provide further insights.

Part VI - The sixth part offers a conclusion wherein the central findings are restated and expounded upon. Limitations of the study are delineated and followed by a discussion of future directions.

Part VII - The final part includes bibliography and relevant appendices.

PART II

CONCEPTUAL FRAMEWORK

2. M&A STRATEGY FRAMEWORK

The objective of this section is to provide an explanation and overview of the conceptual framework that will be used throughout the rest of the paper. M&A research, as well as strategy and management research in general, has experienced a noticeable decline in the use of typologies (Poulis & Kastanakis, 2020). Nevertheless, typologies are considered a highly appealing form of theorizing as they enable the systematic categorization of essential components of a phenomenon, thereby providing a foundation for the development of theory (Snow & Ketchen, 2014). After reflecting on the existing literature on M&A, the authors contend that the field requires a fresh perspective to advance our understanding related to the determinants of relative M&A performance between different firms. As such, new and innovative methodologies, approaches, and frameworks are necessary to revitalize the field and enable researchers to expand their knowledge beyond the current conventions.

Commonly, M&As are seen as unique events. Despite the knowledge that no two transactions are identical, current research tends to regard them as homogeneous occurrences, resulting in an over-generalization and oversimplification of the inherent complexities (Lubatkin, 1987; Bower, 2001). However, M&A has also been expressed as a process. This process perspective implies that M&A activity unfolds over time, is influenced by ambiguities, and that a lot of value creation occurs during the post-acquisition phase (Jemison & Sitkin, 1986; Haspeslagh & Jemison, 1991). In a similar vein, Yolubov et al. (2015) postulate that the source of M&A performance is not dependent on deal-specific but rather firm-specific characteristics. Accordingly, performance should be persistent over time, whereby good acquirers persist in making valuable acquisitions while bad acquirers persist in executing poorly. This notion is supported by empirical evidence highlighting certain subgroups of firms that appear to attain abnormal positive returns from M&A activity (Andrade et al., 2001; King et al., 2004).

Nevertheless, academic studies have not been able to identify these subgroups of abnormally good acquirers. Thus, the long-term performance of firms engaging in M&A remains largely unexplained (King et al., 2004). In addition, if M&A is understood as a process, it should also be studied as such (Meglio & Risberg, 2010). Ultimately, a research gap persists with regard to an extensive temporal outlook and a multi-level analysis of the impact of acquisition behavior. Prior dichotomous studies have propelled the conception of how individual factors influence post-acquisition performance, yet have restricted our knowledge of M&A by disregarding the interdependent nature of individual factors over a longer time horizon (Campbell et al., 2016). This is despite the prevalence of active acquisition behavior (Fuller et al., 2002; Hayward, 2002) and research demonstrating how acquisition programme strategies account for a discernible proportion of the observed fluctuations in post-acquisition performance (Rumelt, 1974; Kusewitt, 1985; Shaver, 2006; Ahern & Wedston, 2007; Laamanen & Keil, 2008). Nonetheless, categorizing M&A strategies into

clear and distinct types remains challenging. As outlined by existing M&A literature and further elaborated on by Haleblain et al. (2009), the perspectives and motives present within a firm will guide its acquisition behavior. Such acquisition behavior can be interpreted as a type of strategy employed by the firm. As follows, our strategy typology deviates from the dichotomous view and groups M&A strategies into four types (*Programmatic*, *Large deal*, *Selective* and *Diminutive*) on the basis of long-term strategic patterns related to frequency[2] and deal size.

These dimensions have been advanced as fundamental drivers of acquisition behavior (Kitching, 1967; Lubatkin, 1983; Kusewitt, 1985; Agrawal et al., 1992; Loughran & Vijh, 1997) and form a strategic framework that serves as a foundation for the thesis going forward. As some scholars find that the M&A climate has changed after the global financial crisis (GFC) 2007-2009 (c.f. Angelini et al., 2011; Alexandridis et al., 2017), we are adding a macroeconomic dimension, allowing firms to change strategy based on their most current strategic patterns. Thereby, the typology likewise captures variability of the acquisition rate within a firm's acquisition program. This is held important given that some scholars suggest that experience gained from acquisitions tend to gradually fade (Hayward, 2002). As there are no prior studies using the same typology, this paper lacks a literature base for cut-off points and strategy definitions. However, it has been deemed rational to categorize using a yearly frequency of one acquisition as a threshold instead of employing e.g. a k-median cluster analysis (Jain & Dubes, 1988), given the multidimensionality of the typology. The same argument applies to the relative size dimension, where a threshold of 40% is considered an appropriate marker of a transaction having a substantial impact on the acquiring firm. Conversely, when a company completes fewer than one deal every 10 years, or its average relative deal size falls below 0.5%, it is assumed to have a minor impact on the firm in question, although this is not always the case. We explain the typology of each strategy below, while Figure 1 provides a graphical representation.

Programmatic M&A – The acquirer is making more than 1 deal on average per year, where the average target enterprise value is greater than 0.5% of the acquirer's enterprise value.

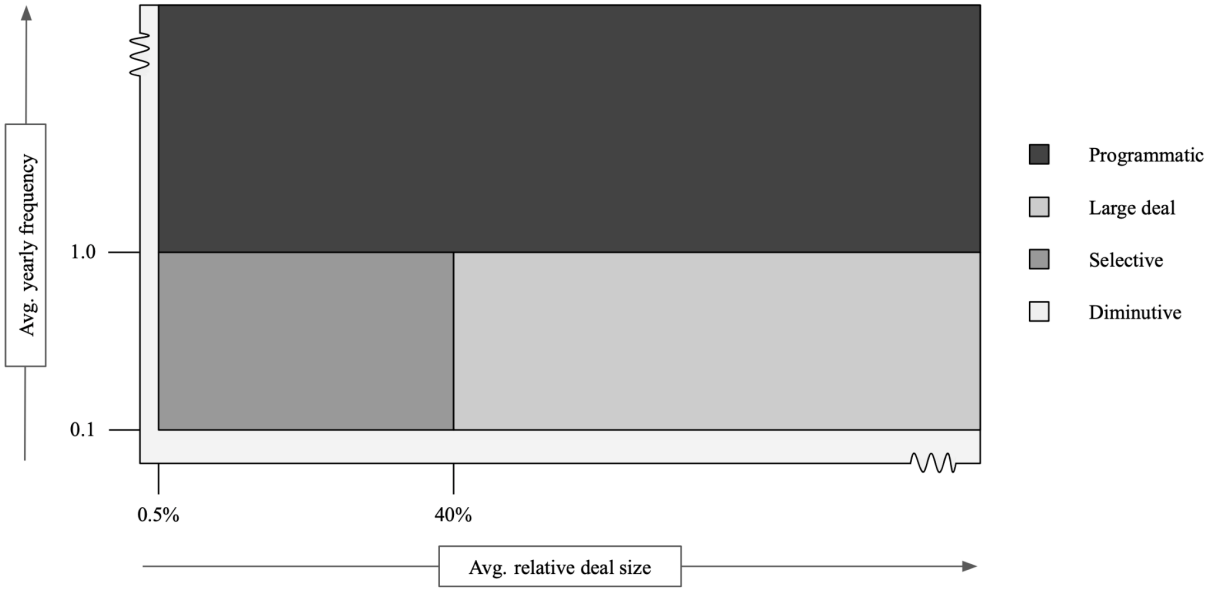
Large deal M&A – The acquirer is making more than or equal to 1 deal on average every 10 years, but no more than 1 deal on average every year, where the average target enterprise value is greater than 40% of the acquirer's enterprise value.

Selective M&A – The acquirer is making at least 1 deal every 10 years on average but less than an average of 1 deal a year, where the average target enterprise value is greater than 0.5%, albeit lower than 40%, of the acquirer's enterprise value.

[2] The frequency dimension encompasses both transactions with disclosed and undisclosed deal value, although transactions with undisclosed deal value are excluded from the final sample due to the inability to calculate the relative size dimension.

Diminutive M&A – The acquirer is making less than or equal to 1 deal on average every 10 years independent of relative size, or the average target enterprise value is lower than 0.5% of the acquirer's enterprise value, independent of frequency.

Figure 1 *Typology of M&A strategies*



Source: Own contribution

PART III

LITERATURE REVIEW & HYPOTHESES

3. LITERATURE REVIEW

This section delves into theoretical and empirical literature pertinent to the M&A domain. The literature review focuses on five fundamental areas: history, antecedents, strategic patterns, value creation, and post-acquisition performance.

3.1 History of M&A

M&A has been a well-established strategy for over a century (Barkema & Schijven, 2008), recently reaching unprecedented levels. However, the strategic attributes underpinning M&A activity have evolved throughout time, emerging in distinct clusters (Nelson, 1959; Yaghoubi et al., 2016). This episodic, wave-like pattern has been extensively covered in M&A literature and is generally divided into six waves 1897-2008 (Gaughan, 2002; Haleblian et al., 2009). These waves tend to coincide with external economic, regulatory, technological, financial or political events, presenting unique moderators in the bivariate relationship between M&A and performance (Martynova & Renneboog, 2008).

3.1.1 M&A waves

Early acquisitions between 1897 and 1904 were mainly focused on forming monopolies and horizontally consolidating production processes (Stigler, 1950). This episode was primarily steered by improved macroeconomic conditions and a period of economic expansion after the Depression of 1883 (Vazirani, 2015). As World War I brought the first era to a close, the second wave took place 1916-1929. A key attribute of this period was the emergence of oligopolies and increased industry concentration as firms leveraged anti-trust legislation to reduce the market power of monopolies (Stigler, 1950).

After the stock market crash of 1929 and an unparalleled period of uninterrupted growth, the third wave occurred between 1965 and 1969. Valuations were at record highs, and companies started acquiring firms with lower valuations instead of reinvesting as this effectively grew earnings of the combined entity (Vazirani, 2015). Hence, M&A activity transitioned towards diversification and the formation of large conglomerates, which was positively received by the stock market (Matsusaka, 1993; Holmstrom & Kaplan, 2001). The 1960s conglomerates were subsequently broken up in the fourth wave during the 1980s – a period characterized by hostile and leveraged takeovers focused on efficiency improvement (Andrade et al., 2001). As outlined by Jensen (1986; 1988), takeovers during the 1980s were ultimately guided by poor internal governance mechanisms and corporate misalignment. Technological improvements and deregulation led to excess manufacturing capacity in an array of industries. This invited capital markets to consider leveraged acquisitions, hostile takeovers and stock buybacks (McGinty, 1996).

After the early 1990s recession, the frequency and dollar value of transactions quickly

rebounded in the fifth wave, taking place 1992-2000. This wave was characterized by a high degree of relatedness between the merging parties, where the form of payment typically involved stocks (Andrade et al., 2001). As a result, firms grew large and major industries were consolidated through related acquisitions. Andrade et al. (2001) postulate that this development was a response to industry-specific deregulation. However, Holmstrom and Kaplan (2001) suggest that corporations started to imitate the beneficial attributes of the previous wave's leveraged buyouts. Meanwhile, the transition away from hostile takeovers is suggested to have been a voluntary development as firms naturally embraced a shareholder value perspective.

The sixth wave began after the dot-com bubble in the late 1990s and lasted between 2003 and 2007. This era was characterized by a surge in leveraged buyouts and private equity investments. The industry consolidation continued during the sixth wave but with a greater emphasis on internationalization through cross-border transactions (Yaghoubi et al., 2016). The most recent stream of M&A activity has taken place since 2014. In light of the great financial crisis, M&A activity sank to its lowest level since 2004. The short period following the financial crisis is characterized with a revamped regulatory framework, upswing in shareholder activism, litigations, and a reformed banking system (Angelini et al., 2011). Despite some ambiguity, given that it is still ongoing, researchers are currently investigating a seventh wave following the 2008 crisis (Vazirani, 2015; Junni & Teerikangas, 2019). Recent research has also taken a more holistic perspective, looking at the consequences of moving between or within waves to explain the fads and fashions regarding acquisitions behavior (Matsusaka, 1993; Malatesta & Thompson, 1993; Gupta & Leech, 2015; Ittner & Keusch, 2015). Different stages within an acquisition wave are found to have a critical effect on abnormal returns. For instance, the combined abnormal return of the bidder and target is seemingly higher when the acquisition takes place early in the wave (Carow et al., 2004). Similarly, McNamara & Haleblain (2009) finds that acquirers benefit from being early movers within waves, while later stage acquisitions tend to exhibit negative returns.

Table 2 *Summary of M&A waves*

Attribute	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7
Period	1897-1904	1916-1929	1965-1969	1981-1989	1992-2000	2003-2007	2014-present
Strategy	Monopolies	Oligopolies	Diversification, Conglomerates	Efficiency	Industry consolidation	Internationalization, Consolidation	Internationalization,
Geography	US	US	US, Europe	US, Europe, Asia	US, Europe, Asia	US, Europe, Asia	US, Europe, Asia
Relatedness	Focused	Focused	Diversification	Focused	Focused	Focused	Focused
Industries	Industrials (textile, iron)	Industrials, Transport	Electricity, Chemicals	Electronics, communication, aviation	Communication, information technology	Financials, energy, healthcare, technology	Industrials, advanced electronics, technology, financials
Method of payment	Cash	Equity	Equity	Debt/Cash	Equity	Debt/Cash	Cash/Equity
Cross-border	n.a.	n.a.	n.a.	Low	Medium	High	High
Macroeconomic context at beginning of wave	Technological advancements, industialization, economic expansion	Anti-trust legislation, post-WWI economic recovery	Post WWII economic recovery	Changes in anti-trust legislation, deregulation, innovative financial instruments	Globalization, technological innovation, deregulation	Economic recovery, abundant liquidity	Economic recovery, low interest rate environment
Macroeconomic context at end of wave	Stock market crash, stagflation, WWI	Great depression	Oil crisis	Stock market crash	Stock market crash, 9/11 terrorist attack	Great financial crisis	n.a.

Source: Own contribution

3.2 Antecedents to M&A

Although the attributes and characteristics of M&A have evolved, the underlying motives for engaging in M&A have remained fundamentally unchanged in the literature. Researchers have conceptualized these motives into four categories: value creation, managerial self-interest, environmental factors and firm characteristics (Haleblian et al., 2009). More broadly, the motivation for engaging in M&A relate to financial, strategic and managerial factors (Napier, 1989; Faulkner et al., 2012), generally classified into neoclassical and behavioral theories. These antecedents to acquisition behavior seemingly steer the performance outcome (Seth et al., 2002; Haleblian et al., 2009).

3.2.1 Neoclassical theories

Proponents of the neoclassical theory believe markets to be efficient, managers to aim for shareholder wealth maximization, and M&A to produce positive abnormal returns through synergies (Gugler et al., 2012). As per the neoclassical theory, the firm and its management will operate under complete rationality and make use of perfect information (Capron, 1999). Under these assumptions, corporations embark on M&A solely when there exists a possibility of generating shareholder value (Ahern & Weston, 2007). Neoclassical theory generally highlights three main rational motives for firms to participate in M&As: pursuing synergies, attaining market power, and acquiring strategically valuable resources and capabilities (Barney, 1988; Harrison et al., 2005).

3.2.1.1 Synergy hypotesis

The synergy hypothesis suggests that the post-merger value of a firm exceeds the sum of its individual components (Bradley et al., 1988). This value increase can be attributed to increased operational-, financial-, or managerial synergies (Singh & Montgomery, 1987; Trautwei, 1990). M&As with the primary objective of exploiting synergies tend to exhibit positive returns (Wang & Xie, 2009). Accordingly, Gaughan (2002) argues that synergies are the most established justification for pursuing M&A. However, the target usually captures such positive gain, as the acquirer tends to overestimate the synergies and overpay (Sirower & Sahni, 2006). Operational synergies can be realized through economies of scale or scope (i.e., cost-based synergies) or through the enhancement of sales and asset growth (i.e., revenue-based synergies) (Hakkinen & Hilmola, 2005). Nevertheless, some degree of integration is typically needed between the bidder and target to realize cost- and revenue-based synergies (Haspeslagh & Jamison, 1991).

Meanwhile, financial synergies entail a reduction in the cost of capital (Chatterjee, 1986). A firm can reduce its risk from various sources, one of which involves acquiring diversified income streams to decrease unsystematic risk. Alternatively, financial synergies can be achieved by utilizing internal capital markets to reallocate excess cash between units, leading to a more efficient capital allocation. Last, managerial synergies may be obtained by possessing superior knowledge and

capabilities, ultimately leading to improved strategic and financial decisions (Trautwei, 1990). It is proposed by agency theorists that M&A can be an effective way of disciplining an ineffective top management (Jensen, 1986) by terminating selected managers (Martin & McConnell, 1991) or reducing compensation packages (Grinstein & Hribar, 2004). Ultimately, the synergy hypothesis is underpinned by the fundamental connection between the longevity of a firm and its aptitude to effectively manage and expand tangible and intangible assets (Penrose, 1959).

3.2.1.2 Market power

According to market power theory, firms engage in M&A to increase monopoly power, thereby eliminating excess capacity, reducing competition, and augmenting pricing power (DePamphilis, 2010; Sudarsanam, 2010). The theory posits that a dominant firm can exert its influence by setting prices and quantities to maximize profits. Herein, Gugler et al. (2003) and Chatterjee (1986) find that larger firms are more prone to attain profitability through market power gains than efficiency gains. However, the transfer of wealth from consumers to producers due to augmented market power has necessitated anti-competitive regulations (De Graaf & Pienaar, 2013), thereby limiting the prevalence of acquisitions propelled solely by market power (Trautwein, 1990). Nonetheless, studies reveal that even in situations where M&As are challenged by regulators on the grounds of decreasing competition, there is limited evidence to support the assertion that such transactions boost the acquirer's market power (Eckbo, 1983; Stillman, 1983). Ultimately, while market power is a possible motivation for firms to engage in M&A, dispersed findings indicate that the prevalence of such motives may be restricted.

3.2.1.3 Resources and capabilities

A firm's ability to succeed in competitive markets is generally dependent on its resources and capabilities (Sudarsanam, 2010). The resource-based view of the firm argues that resources must possess attributes that make them a source of sustainable competitive advantage (Barney 1991; 1995). King et al. (2004) find post-acquisition abnormal returns of the acquirer to be positively related to the degree of complementarity of the merging parties' resources and capabilities. Karim and Mitchell (2000) also find a larger variation in acquirers' resources when compared to non-acquirers, indicating that M&As may be used to adapt over time. Supporting this, Douma and Schreuder (2017) suggest that dynamic capabilities are essential in modern business to adapt to rapidly changing environments. To overcome the lengthy process of internal resource and capability development, firms may acquire targets with relevant resources (Bower, 2001; Gaughan, 2002; DePamphilis, 2010). Anand and Singh (1997) argue that firms often combine their assets with those of another firm to realize strategic goals. However, identifying strategic fit, post-merger integration, and resource valuation are common challenges in this context (Hitt et al., 2001; Epstein, 2004; Sudarsanam, 2010). Empirical research suggests that revenue-driving and cost-reducing capabilities improve when resources are redeployed

from acquiring to target firms, while revenue-enhancing capabilities may be negatively impacted from such redeployment (Capron, 1999; Capron & Pistre, 2002; Grill & Bresser, 2013). Nevertheless, the benefits of resource sharing hinges on the organizational compatibility between firms (Anand & Singh, 1997).

3.2.2 Behavioral theories

While neoclassical view has governed the literature on M&A, scholars who subscribe to a behavioral view postulate that abnormal returns to the acquiring firm is simply a random error and that human cognition plays a critical role (Shi et al., 2012). This view has been helpful in explaining the conflicting performance results from M&A and why the majority of deals exhibit losses. Herein, cognitively limited motives related to managerial hubris (Roll, 1986), self-interest (Berkovitch & Narayanan, 1993), and opportunism (Trautwein, 1990; Sudarsanam, 2012) have been conceptualized to explain why many M&A deals fail. Such motives are also believed to cause a herd-like mentality within industries, thereby steering M&A behavior and forming an alternative explanation to distinct M&A waves (Faulkner et al, 2012).

3.2.2.1 The hubris hypothesis

The hubris hypothesis proposes that managers make mistakes when assessing potential acquisitions and that the acquisition premium simply represents a statistical random error (Roll, 1986). Branches within the hubris hypothesis further assume no synergistic effects, resulting in a transfer of the entire premium to the target firm (Seth et al., 2002). Less extreme versions of the hubris hypothesis agree with the synergy hypothesis to some extent, yet suggest that acquiring firms tend to experience negative return on account of overpayment stemming from managerial overconfidence (Seth et al., 2000). When evaluating potential synergies, managers of the acquirer usually overestimate these synergies and therefore transfer a substantial part of the value to the target firm. This further relates to behavioral biases such as winner's curse (Varaiya, 1988), anchoring bias (Baker et al., 2012), confirmation bias (Garbuio et al., 2010), availability bias (Thelisson & Meier, 2022), hindsight bias (Cartwright & Schoenberg, 2006), narrow framing (Kateeinan & Tverskyj, 1979), and escalation of commitment (Straw, 1976). These cognitive biases influence the decisions made by managers and typically translate into value depletion for the acquiring firm.

3.2.2.2 Managerial hypothesis

As opposed to the hubris hypothesis, where managers unknowingly overpay in acquisitions, the managerial hypothesis proposes that managers intentionally do so (Seth et al., 2000). Managers engage in so-called "empire building" at the expense of the shareholders (Hope & Thomas, 2008). This phenomena relates to agency problems, stemming from the separation of ownership and control. Managers will act in their own self-interest and generate personal benefits, regardless of the effect on

the firm and its shareholders. The difficulty for owners to monitor the operations of managers can further be amplified in line with the dispersion of ownership, making agency problems more prevalent in publicly traded companies (Bebchuk & Fried, 2003). In this connection, M&A is conducted by firms to either boost recognition or financially enrich managers. Managers can act in several ways to transfer wealth from shareholders to themselves. It typically involves aggressively growing the firm in size even though it reduces profitability and destroys firm value (Hope & Thomas, 2008). Mirroring this, Marris (1964) argues that self-interested managers are more likely to seek acquisitions with the aim of growing assets rather than profitability when compensation is linked to the assets under their control. Alternatively, managers may be incentivized to diversify activities to reduce firm-level risks (Amihud & Lev, 1981). Such activities are generally considered to be value destroying in an integrated capital market as shareholders can individually duplicate such strategies at a lower cost (Ramanujam & Varadarajan, 1989; Montgomery, 1994). Ultimately, numerous scholars have found support for the notion that M&A fail due to agency problems (c.f. You et al., 1986; Berkovitch & Narayanan, 1993; Fung et al., 2009).

3.3 Strategic patterns in M&A

In addition to the antecedents presented by neoclassical and behavioral theory, scholars have examined M&A from a strategic perspective, focusing on corporate development (cf. Lubatkin, 1987; Capron, 1999; Laabs & Schiereck, 2010). In literature, scholars traditionally examined M&A strategy with a framework for diversification (Rumelt, 1974). In this context, the success (or failure) of M&A is contingent upon the acquirer's competitive advantage, its market growth rate, and the extent to which these factors align with the target's ditto. If there is a high degree of strategic fit, whereby the acquirer and target exhibit cohesive features, the value created from M&A is likely to be higher (Lubatkin, 1983).

This view was prompted by the Federal Trade Commission's classification of M&A into horizontal, vertical, product and market concentric, or conglomerate, which served as an easily accessible measure to the level of strategic fit. Later, Howell (1970) argued that the latter two had become increasingly indistinguishable due to the ease of geographic market expansion. Consequently, three distinct types of M&A strategies emerged: vertical (i.e., acquisition of firms at different stages of production), horizontal (i.e., acquisitions between firms in the same line of business), and conglomerate (i.e., acquisition of companies in unrelated lines of businesses). While these strategies formed a foundation for the research on M&A strategy, the scope is limited to deal-specific characteristics (Brealey et al., 2020).

As scholars underscored a need for multidimensionality in performance research (King et al., 2021), the concept of strategic fit transformed from a static understanding of the alignment between two firms' environment and competitive advantage (Zajac et al., 2000) to a comprehensive framework

considering multiple contingencies at different levels, including industry, strategy, and management (Volberda et al., 2012). Subsequently, the strategy literature begun to consider factors at the macro-level (i.e. environmental level), meso-level (i.e. organizational level) and micro-level (i.e. management level) as potential drivers of M&A outcomes (Donaldson, 2001; Burton & Obel, 2004; Fainshmidt et al., 2019). In this context, considerable evidence of active acquisition behavior has been identified (Fuller et al., 2002; Hayward, 2002) whereby research indicates that the adoption of acquisition programme strategies and company-specific acquisition patterns contribute significantly to observed variations in post-acquisition performance (Kusewitt, 1985; Shaver, 2006; Ahern & Wedston, 2007; Laamanen & Keil, 2008).

When implementing a long-term strategy for external growth, various acquirer-, target-, and deal-specific factors must be considered by strategists and managers alike (Campbell et al., 2016). In this connection, literature on fundamental determinants of acquisition patterns and their role in value creation underscores the significance of frequency and relative size (cf. Kitching, 1967; Lubatkin, 1983; Kusewitt, 1985; Agrawal et al., 1992; Loughran & Vijh, 1997). Furthermore, altering a firm's acquisition pattern is often perceived as an expensive undertaking (Greve, 2003). Research indicates that executives heavily rely on prior strategies to mitigate cognitive load and streamline information processing (Amburgey & Miner, 1992; Hogarth & Einhorn, 1992). Consequently, strategic dependence inclines an organization towards strategic approaches that have been employed in the past, rather than exploring other paths. By logical extension, firms that have acquired frequently (or infrequently) and through large (or small) deals in the past, develop resources and capabilities which lead them to become increasingly dependent on such a strategy for future growth (Kim et al., 2011). This tendency to rely on recent strategic actions is further strengthened when previous strategic actions yield favorable outcomes (Haleblian et al., 2006).

3.3.1 Acquisition size

Beyond acquirer- and target-specific factors, the value created in M&A is impacted by relative attributes. Kitching (1974) postulates that the relative size between the target and bidder is one of the most influential elements in a superior M&A strategy. According to Asquith et al. (1983) abnormal stock returns tend to be greater in relatively large acquisitions. Similarly, Jarrell and Poulsen (1989) find that relative size has a positive impact on the outcome of M&A. In contrast, Sudarsanam et al. (1996) conclude that acquisitions of relatively smaller targets tend to generate higher abnormal stock returns. Dong et al. (2005) support this assertion by postulating that relatively larger deals, on average, yield negative stock returns. Several elements have been advanced to explain the inconsistent results. One explanation in favor of relatively large deals is that the difficulty of integrating larger targets into a combined entity reduces the pool of potential acquirers, thereby enabling acquirers to obtain more favorable transaction terms (Roll, 1986). This is supported by Alexandridis et al. (2013) who observe

an inverse association between offer premia and target size, suggesting lower premiums for larger firms.

However, from a resource-based view, integrating relatively large acquisitions necessitates an excessive use of firm resources as the acquirer must implement more complex integration methods to prevent synergetic disruptions in the current organization (Schweizer, 2005). Accordingly, Alexandridis et al. (2013) suggest that adoption of a strategy focused on smaller targets could reduce the adverse effects of integration challenges. The authors find that the negative association between relative size and post-acquisition performance is primarily driven by the target size. In line with Schweizer (2005), the scholars uncover an overall negative effect of large deals, mainly attributed to the amplified complexity of post-merger integration. Against this, Kitching (1967) argues that a relative size mismatch can be resolved through an effective organizational structure. In addition, Moeller et al. (2004) asserts that the relative size effect seen in prior research is attributed to small acquirers rather than large targets. More specifically, the authors suggest that the inconsistent performance results in small and large deals can be attributed to a greater caution and pre-acquisition planning exercised by smaller acquirers.

3.3.2 Acquisition frequency

In recent years, both western and emerging market enterprises have developed comprehensive programs aimed at carrying out serial acquisitions (Ismail, 2008). The large number of research indicates that high-frequency acquirers, also known as serial acquirers, demonstrate lower levels of performance compared to selective acquirers (cf. Schipper & Thompson, 1983; Loderer & Martin, 1990; King et al., 2004; Ismail, 2008; Billett, & Qian, 2008). Additionally, Laamanen and Keil (2008) argue that M&A performance is negatively correlated with deal frequency, indicating a decrease in abnormal returns with each additional acquisition. On the contrary, some scholars find evidence that frequent acquirers create significant value (c.f. Malatesta & Thompson, 1985; Croci & Petmezas, 2009). Rovit and Lemire (2003) further contend that high-frequency acquirers perform better when they systematically make purchases throughout economic cycles rather than concentrate their activity within specific phases, such as boom or recession.

Various explanations have been proposed for the conflicting evidence. Haleblian and Finkelstein's (1999) study discovers a U-shaped relation between the frequency and performance, suggesting both favorable and unfavorable consequences stemming from acquisition experience. It appears that the most effective acquirers are those who fall into one of two categories: either inexperienced acquirers who do not erroneously apply their acquisition experience to dissimilar future transactions or experienced acquirers who possess the ability to effectively differentiate among various acquisition opportunities. While these results are supported by Zollo and Reuer (2006), other scholars observe a strict positive relationship to organizational learning (cf. Fowler & Schmidt, 1989; Barkema et al., 1996). Conversely, some researchers identify a statistically insignificant relationship

(cf. Lubatkin, 1982; Zollo & Singh, 2004). The implications of these observations suggest the presence of critical contingencies, emphasizing the need for researchers to conduct further investigation. In this connection, Hayward (2002) argues that learning relates to the quality rather than the quantity of a firm's experience. According to other research, a firm that becomes reliant on acquisitions for sustained growth and, thus, engages in frequent acquisitions is more susceptible to the risks of overpaying (Kim et al., 2011). This, in turn, poses a significant challenge to long-term value creation (Hunter & Jagtiani, 2003).

3.4 M&A value creation

M&A transactions have a significant effect not only on the companies involved but also on other stakeholders including customers, suppliers, competitors, management, employees, and shareholders. Therefore, to effectively study the value created from M&A, it is essential to determine the adopted stakeholder perspective. In financial literature, M&A value creation is often studied in terms of shareholder value (Jensen, 1984; Singh & Montgomery, 1987; Brealey et al., 2020). Following this view, shareholders are positioned as the primary stakeholder within the scope of this paper. However, shareholder value can be approached from both a perspective of the acquiring firm and the target firm. Since there is a significant degree of agreement when analyzing value creation from the perspective of targets[3], this paper focuses on the acquirer's perspective, whereby a less unified understanding exists (Bruner, 2002).

The measurement of M&A value creation has been a longstanding topic of inquiry within the literature of strategic management, organization, and finance. Despite an extensive body of literature, there remains a lack of consensus across these disciplines regarding the appropriate methods for assessing the performance of acquisitions. Methods differ across several dimensions, from subjective (e.g., qualitative assessments of strategic synergy effects) to objective measurement (e.g., quantitative evaluation of abnormal returns), from short-term (e.g., a few days pre- and post-acquisition) to long-term (up to 20 years post-acquisition), and from a task level of analysis (e.g., alignment of control systems) to a transaction level (e.g., financial synergy realization and premium paid). Following the latter dimension, research postulates a positive and unidirectional causal link between task-level integration performance, transaction-level performance, and firms' long-term market- and accounting performance (Zollo & Meier, 2008). Accordingly, long-term market- and accounting-based studies neither take a task- nor a transaction level of analysis. Instead, the field is approached from a firm-level perspective, encompassing the performance of the combined entity beyond the value generated by single transactions. These empirical studies adopt a holistic perspective by taking into account the long-term ramifications of acquisitions.

[3] The mass of research suggests that target shareholders earn significant positive market returns, generally given a substantial premium received from the acquirer (cf.. Jensen & Ruback, 1983; Bruner, 2002; Capron & Pistre, 2002; Cartwright & Schoenberg, 2006; Alexandridis et al., 2010; Rose et al., 2017).

3.5 Empirical evidence on M&A value creation

The subsequent section provides an overview of the most prevalent approaches used to evaluate the success of M&A: market- and accounting-based performance studies. Empirical evidence is increasingly scarce when delimiting the research to value creation in the Nordic region. Furthermore, when narrowing the scope to the performance of different long-term M&A strategies, no prior studies are found. As a consequence, the empirical review adopts a global and more general perspective, outlining pertinent evidence on value creation in the context of M&A. Table 2 and 3 provides a summary of previous long-term studies and their respective sample characteristics, methodology, and results.

3.5.1 Market-based performance

Over decades of research, the findings on M&A acquirer performance have been varied and, at times, contradictory. A significant proportion of empirical studies have focused on the short-term rather than the long-term market performance. Overall, a majority of the short-term literature indicates that M&As have insignificant, or negative, effect on market performance (c.f. Eckbo & Thorburn, 2000; Mulherin & Boone, 2000; Campa & Hernando, 2004; Moeller et al., 2005; Doukas & Petmezas, 2007; Ismail, 2008; Billet & Qian, 2008). Still, Rose et al. (2017) find significant positive short-term abnormal returns for acquirers in the Nordic region. These findings are further supported by Goergen and Renneboog (2004) and Alexandridis et al. (2010).

Nonetheless, the aforementioned discoveries pertain exclusively to the immediate market reactions to M&A announcements and are indicative of investors' anticipations rather than tangible consequences, which naturally necessitate a considerable time frame to materialize (DePamphilis, 2015; Grant, 2018). Hence, prior research has acknowledged that short-term event studies do not accurately reflect M&A performance. Instead, these studies may be influenced by factors such as a collective cognitive heuristic and market sentiment. Given the complexity of acquisitions as a strategic activity, it is argued that the results of short-term event studies may lead to inaccurate inferences regarding the economic impact of such events (Oler et al., 2008). Therefore, research suggests adopting an extended event window to more accurately evaluate the financial impact (Harrison et al., 2005). Consequently, scholars have also examined long-term returns following acquisitions.

Agrawal et al. (1992) find that stockholders of US-listed acquiring firms experience a statistically significant loss over the 5-year post-acquisition period. Loughran and Vijh (1997) correspondingly find significant negative long-term abnormal returns for acquirers in their examination of US stock mergers between 1970 and 1989. Gregory (1997) conducts a comparable study on UK-listed companies and uncovers that the average abnormal return for up to 2 years post-acquisition is significantly negative. In addition, Andre et al. (2004) studies the long-term

performance of Canadian M&As between 1980 and 2000 and find that acquirers significantly underperform over a 3-year period. These findings are supported by King et al.'s (2004) meta-analysis and Cartwright & Schoenberg's (2006) evaluation of M&A research – both indicating that M&A activity negatively affects the long-term market performance of acquiring firms. In a comprehensive review of prevailing literature, Agrawal and Jaffe (2000) similarly conclude that long-term market performance in the years following an acquisition is generally negative, although a wide firm-level variation exists.

In contrast to the aforementioned studies, some scholars find indications of positive long-term market performance in the context of M&A. Jensen and Ruback (1983) conduct a comprehensive examination of the merger process ending 240 trading days following the transaction. The results of their study indicate that M&A can lead to positive abnormal market performance. Bradley et al. (1988) studies acquisitions 1963-1984 and finds a moderate positive average abnormal return for acquirers. In a similar study from 1966 to 1986, Loderer and Martin (1992) reveal that acquirers underperform during the 3 years following an acquisition but not when expanding the horizon to 5 years. Hazelkorn et al. (2004) uncover that, upon deal announcement, the shareholders of acquiring companies tend to experience small losses. However, acquirers tend to outperform industry peers over a longer horizon, such as 1- or 2 years post-acquisition.

Table 2 *Summary of long-term market performance studies*

Study	Market	Sample period	No. of deals	Benchmark	Method	Event window			
						1 year	2 years	3 years	5 years
Firth (1980)	UK	1969 - 1975	434	MM	CAR			(+)*	
Malatesta (1983)	US	1969 - 1974	256	MM	CAR			(-)*	
Eckbo (1986)	CA	1964 - 1983	1 138	MM	CAR	(+)*			
Magenheim & Muller (1988)	US	1976 - 1981	77	MM	CAR			(+/-)	
Bradley et al. (1988)	US	1963 - 1984	236	MM	CAR	(+)*			
Franks et al. (1988)	US/UK	1955 - 1972	820	MM, MAM, CAPM	CAR		(+/-)*		
Frank & Harris (1989)	UK	1955 - 1985	1 048	MM	CAR		(-)		
Buhner (1991)	DE	1973 - 1985	110	MM	CAR	(-)	(-)		
Limmack (1991)	UK	1977 - 1986	529	MM	CAR	(-)*	(-)*		
Franks et al. (1991)	US	1975 - 1984	399	Size, Dividend, Momentum	CAR			(+/-)*	
Agrawal et al. (1992)	US	1955 - 1987	1 164	Size, Beta	CAR				(-)*
Loderer & Martin (1992)	US	1966 - 1986	1 298	MM	CAR			(-)*	(+)*
Gregory (1997)	UK	1955 - 1985	420	CAPM, Size, Beta, FF3	CAR		(-)*		
Loughran & Vijh (1997)	US	1970 - 1989	434	Size and B/M	BHAR				(+/-)*
Higgson & Elliot (1998)	UK	1975 - 1980	305	Size	BHAR		(-)*		
Mitchell & Stafford (2000)	US	1961 - 1993	2 068	Size, B/M	BHAR			(-)*	
Cosh & Guest (2001)	US	1985 - 1996	181	Size, B/M	BHAR				(-)*
Morller et al. (2003)	US	1980 - 2001	12 023	Size, B/M	BHAR			(-)*	
Sudarsanam & Mahate (2003)	UK	1983 - 1995	519	Size, MAM, B/M, Mean	BHAR			(-)*	
Andre et al. (2004)	CA	1980 - 2000	267	Size, B/M	CTIME			(-)*	
Hazelkorn et al. (2004)	US	1990 - 2002	1 547	Industry	CAR	(+)*	(+)*		
Gregory & McCorriston (2005)	UK	1984 - 1992	343	Size, B/M	BHAR			(-)*	(-)*
Conn et al. (2005)	UK	1984 - 2000	576	Size, B/M	BHAR			(-)*	
Ang & Cheng (2006)	US	1984 - 2001	591	Size, B/M, Momentum	BHAR			(-)*	
Alexandridis et al. (2006)	UK	1993 - 1998	164	CAPM, FF3	CTIME			(+/-)*	
Croci (2007)	EU	1990 - 2001	156	Size, B/M	BHAR	(-)*	(-)*	(-)*	
Dutta & Jog (2009)	CA	1993 - 2002	1 300	Index	BHAR			(-)*	
Zaremba (2015)	EU	2001 - 2014	109	CAPM, FF3, FF5	CTIME	(-)	(-)	(-)	
Kiesel et al. (2017)	Global	1996 - 2015	826	Index	BHAR	(+)	(+)	(+)*	
Mager & Meyer-Fackler (2017)	DE	1981- 2010	338	Industry, Index	BHAR			(+/-)	
Dranev et al. (2019)	Global	2010 - 2017	178	MM	BHAR	(-)*			
Kolari et al. (2021)	US	2003 - 2015	5 592	Size, B/M	BHAR	(-)*	(-)*	(-)*	(-)*

** = Significant on at least a 10% level.*
Source: Own contribution

3.5.2 Accounting-based performance

The financial domain encompasses both market and operating measures of performance. While most empirical research on M&A has focused on market data, many scholars advocate for using accounting data as a performance measure. This approach is predicated on the assumption that any benefits arising from M&A will ultimately reflect in the financial statements (Tuch & O'Sullivan, 2007). While some scholars argue that multidimensionality can only be seized via indicators across different domains, others contend that multidimensionality can be achieved by using multiple indicators within a single domain (Venkatraman & Ramanujam, 1986). Several scholars favor the latter perspective as it allows for a more comprehensive understanding of the conflicting findings in M&A literature by capturing multiple dimensions of performance. An additional benefit of accounting-based metrics is that it measures actual, realized performance compared to market return, which measures expected future performance. Moreover, accounting-based measures allow researchers to evaluate the realization of synergies as those, if materialized, should be reflected in the accounting data (Harrison et al., 1991; Hitt et al., 1998).

The M&A literature adopts a diverse array of accounting-based measures to evaluate long-term effects on performance. Healy et al. (1992) conduct a study investigating the post-merger operating performance of the 50 largest US mergers between 1979 and 1984. Their examination reveals that merged companies demonstrate substantial enhancements in asset productivity compared to their respective industries, leading to improved operating cash flow. Furthermore, the improvements in post-merger cash flows are not attained at the cost of long-term performance as companies maintain their relative rates of capital expenditure and research and development (R&D) following a merger. Ghosh (2001) critically examines the methodical approach employed by Healy et al. (1992) by analyzing 315 US M&As from 1981 through 1995. His findings suggest that firms do not experience statistically significant improvements in operating performance when controlling for industry, size, and pre-acquisition performance. Later, Powell and Stark (2005) identified deficiencies in the research of Ghosh (2001) and conducted an independent examination, supporting improvements in acquirers' post-takeover operating performance.

Bruner (2002) review previous empirical evidence from M&A studies by examining 13 papers published between 1977 and 2001 that use accounting-based performance measures. Two studies report significantly negative performance post-acquisition, while three report significantly positive performance. The remaining studies are found to be in the non-significant middle ground. Correspondingly, Tuch and O'Sullivan (2007) review 10 studies published between 1977 and 2005, primarily with samples from the US and UK. They acknowledge that the field of research is still developing, and findings are hard to compare due to considerable variations in methods employed, yielding mixed results with no clear evidence of improved post-acquisition performance. In alignment with this, Martynova and Renneboog (2008) report that empirical evidence from accounting studies is conflicting and sometimes paradoxical.

Martynova et al. (2007) conduct an independent study to evaluate the long-term profitability of 155 European M&As completed between 1997 and 2001. Their findings suggest that acquirer's profitability decreases following acquisitions. Nevertheless, when controlling for industry, size, and pre-acquisition performance, the decrease is found to be insignificant. Thanos and Papadakis (2012) organize accounting measures into three broad categories: financial ratios, growth measures, and cash flows. Their study demonstrates that research testing financial ratios, such as return on asset, as a measure of M&A performance, on average, demonstrates that acquisitions negatively affect the performance of acquiring firms. The scholars find equivalent negative results in studies using growth measures. Nonetheless, studies employing cash flow to measure accounting performance seem to generally report positive long-term effects on the acquiring firms (Thanos & Papadakis, 2012). These results are consistent with findings reported by Linn and Switzer (2001).

Table 3 *Summary of previous long-term operating performance studies*

Study	Market	Sample period	No. of deals	Benchmark	Method	Event window			
						1 year	2 years	3 years	5 years
Meeks (1977)	UK	1964 - 1972	161	Industry, Accounting bias	EBIT/Net assets			(-)	(-)*
Ryden and Edberg (1980)	SE	1962 - 1976	25	Industry, Size	ROE, ROA, Sales growth			(+/-)	
Cosh et al. (1980)	UK	1967 - 1969	225	Size, Industry	ROA			(+)	(-)
Mueller (1980)	US	1962 - 1972	379	Industry	ROE, ROA, Sales Growth			(-)*	(-)*
Mueller (1985)	US	1950 - 1972	123	Size, Industry	Market share	(-)*			
Ravenscraft & Scherer (1987)	US	1975 - 1977	62	Industry	EBIT/Net assets			(-)*	
Healy et al. (1992)	US	1979 - 1984	50	Industry	Operating CF return, Asset turnover				(+)*
Dickerson et al. (1997)	UK	1948 - 1977	2914	Size, Company, Time	ROA				(-)*
Linn & Switzer (2001)	US	1967 -1987	565	Industry	CF/Market cap				(+/-)
Ghosh (2001)	US	1981 - 1995	315	Industry, Size, M/B	CF ROA, Sales growth, CF margins			(+/-)	
Gugler et al. (2003)	Global	1981- 1998	1250	Industry	ROA				(+)*
Zollo & Singh (2004)	US	1986 - 1994	228	Industry	ROA			(-)	
Powell & Stark (2005)	UK	1985 - 1993	191	Industry, Size, M/B	CF/Market cap			(+)*	
Martynova et al. (2007)	EU	1997 - 2001	155	Industry, Size	(EBITDA–ΔWC)/BV			(+/-)	
Bild et al. (2010)	UK	1985 - 1996	303	Company	ROE			(+)*	
Papadakis & Thanos (2010)	UK	1997 - 2003	50	Industry	ROA		(-)		

** = Significant on at least a 10% level.*
Source: Own contribution

Altogether, a lack of consensus exists regarding the value creation potential of acquiring firms – both when measuring market- and operating performance. This lack of agreement highlights a need for further research to better understand the underlying contingencies and factors that contribute to value creation in the context of M&A.

4. HYPOTHESIS DEVELOPMENT

Having provided a review of prior literature on M&A, this section narrows the scope to focus on literature pertaining to 12 null hypotheses developed to steer the empirical research. The thesis initial hypotheses seek to investigate the overall value creation of M&A. Each subsequent hypothesis is formulated to explore the value creation of specific M&A strategies, and how alternative value drivers impact the potential abnormal return arising from each strategy.

4.1 Value creation in the Nordics

As per the review of previous literature, extant research has yet to yield unanimity regarding the long-term value creation potential of M&A, specifically, whether such transactions create abnormal value for the acquiring firm. Under neoclassical theory, firms only engage in M&A activity if it creates shareholder value (Ahern & Weston, 2007). This is based on the assumption that management operates with complete rationality (Capron, 1999). Behavioral theories provide alternative explanations for such activity, including cognitive biases, overconfidence, and agency issues (Roll, 1986; Jensen, 1986; Seth et al., 2000). This disagreement serves as the impetus for investigating M&A value creation. Overall, the available evidence suggests that, at best, the long-term abnormal returns realized by the acquiring firm tend to be negligible or statistically insignificant. Meanwhile, Tuch & O'Sullivan (2007) argue that the outcome of acquisitions varies across geographical and legal boundaries. Given the dearth of publications on Nordic M&A (Hellgren & Schriber, 2003) and the similarities among Nordic countries in terms of legal systems, governance structure, and business culture (La Porta et al., 1998; Lekvall et al., 2014), it is of particular interest to investigate the value creation of Nordic acquirers. Accordingly, the following initial hypotheses are formulated.

Hypothesis 1$_a$ *M&A creates no long-term abnormal market returns to the acquirer*

Hypothesis 1$_b$ *M&A creates no long-term abnormal profitability for the acquirer*

4.2 M&A strategy

Contrary to the notion that acquisitions do not yield value, anecdotal evidence emphasizes some persistently successful M&A activity by distinct firms (cf. Andrade et al., 2001; King et al., 2004). Although research indicates that such firm-specific heterogeneity is consistent with several non-mutually exclusive explanations (Jemison & Sitkin, 1986; Haspeslagh & Jemison, 1991; Golubov et al., 2015), a significant need remains for a greater understanding of the overall variation in abnormal returns generated by M&A activity. Ultimately, literature postulates that the outcome of such activity is contingent upon a multitude of factors spanning across strategic, financial and managerial aspects. Nonetheless, if a comprehensive list of determinants cannot systematically account for the wide-ranging heterogeneity in acquirer returns, a question emerges regarding what

can. This has prompted critical questions within the field of strategic management about whether or not to pursue M&A, but more notably, the most appropriate M&A strategy to employ (Rumelt, 1974; Angwin et al., 2022). In essence, if there are systematic differences in firms' ability to create value through M&A beyond the well-documented determinants, there may be an unobserved, time-invariant, firm-specific factor such as long-term strategy, which can explain the variation. The above theoretical underpinnings and empirical findings provide a ground for the forthcoming sections and hypotheses.

4.2.1 Programmatic

Programmatic M&A represents a strategic approach that transcends a mere quantitative pursuit of transaction frequency, and instead, prioritizes the methodical development of new businesses, services, and capabilities. When companies use a programmatic approach, they tend to choose deals that align with their corporate strategy and competitive strengths. As a result, frequent acquirers proactively manage their growth and maintain an unwavering commitment to their M&A strategy, irrespective of the outcome of any individual transaction (Laamanen & Keil, 2008). Firms engaging in multiple acquisitions over time may experience a strategic momentum, thereby creating substantial value for shareholders that can last for several years (Amburgey & Miner, 1992; Frick & Torres, 2002). The overall performance of firms engaging in multiple acquisitions may not only be propelled by single-deal characteristics, but also the pattern of acquisitions. While single acquisitions may exhibit negative returns, the program-level performance can outweigh such losses from learning effects, leading to improved acquisition capabilities (Finkelstein & Haleblian, 2002). These acquisition capabilities encompass knowledge, skill, structures, systems and processes which can be utilized to facilitate improved performance in future acquisitions (Haspeslagh & Jamison, 1991).

Acquisition capabilities require multiple deals and take time to accumulate (Haleblain & Finkelstein, 1999; Zollo & Winter, 2002). As outlined by Laamanen and Keil (2008), developing such capabilities is simply not worthwhile for firms engaging in less frequent M&A activity due to the intense effort and time required. Furthermore, frequent acquirers whose acquisitions are irregular may find that these acquisition capabilities dissipate over time. On the contrary, too short periods between acquisition events can also be detrimental due to time compression diseconomies and a lack of learning (Dierickx & Cool, 1989). Accordingly, Hayward (2002) finds that there is an inverted U-shape relationship between prior acquisition velocity and acquirer performance. As outlined by Chao (2018), acquirer performance is positively correlated with the velocity of acquisition performance, while being negatively correlated with the squared term of the velocity of acquisition performance, further supporting an inverted U-shaped relationship. However, the empirical research on the association between acquisition experience and performance has manifested conflicting results, ranging from positive (Berkema et al., 1996), nonsignificant (Zollo & Singh, 2004), U-shaped (Haleblain & Finkelstein, 1999), invertedly U-shaped (Hayward, 2002), and negative (Uhlenbruck et

al., 2006). These findings indicate potential contingencies that may contribute to the varying results.

Organizational learning theory has drawn attention to explain the link between prior acquisitions and its effect on a focal acquisition. Hayward (2000) shows that learning curve effects are not bound to happen. Meanwhile, in more recent literature, scholars have investigated why some acquirers are better at learning from previous acquisitions compared to others (c.f. Muehlfeld et al., 2012; Basuil & Datta, 2015; Cuypers et al., 2017). The main areas of investigation in explaining this phenomenon revolve around the quality of experience (Collins et al., 2009), pattern of experience (Laamanen & Keil, 2008), and context of experience (Muehlfeld et al., 2012). Perkins and Salomon (1992) further emphasize the concept of near transfers and argue that there is a positive relationship between organizational learning and the relatedness of previous experience on account of routines. Such learning effects can furthermore be utilized in subsequent acquisitions and moderate the relationship between acquisition frequency and performance (Markides & Ittner, 1994; Basuil & Datta, 2015). Basuil and Datta (2015) find that experiences in industry-related and geography-related acquisitions have a positive impact on shareholder value creation when a subsequent focal acquisition exhibits similar traits. Similarly, Markides and Ittner (1994) shows that previous experiences in international acquisitions have a positive impact on future international acquisitions.

As argued by Finkelstein and Haleblian (2002), frequent acquirers tend to develop more profound acquisition capabilities over time. This should give programmatic acquirers a program-level advantage that acquirers with less frequent acquisitions lack. Hence, under the assumption that frequent acquirers have a more well-established capabilities of handling M&A internally, the impeding factors to M&A success should be less profound for firms with a large portfolio of previous acquisition experiences. Furthermore, engaging in frequent acquisitions can be a way of adapting to the ever changing external environment (Brueller et al., 2014). Hence, programmatic acquirers may exhibit more robust performance over time and through economic cycles. Following the line of reasoning presented above, a programmatic M&A strategy may have no significant impact on abnormal returns or profitability in isolation. The relative performance of programmatic acquirers could instead be heavily moderated by characteristics linked to industry-relatedness and geographic scope, elaborated on in the paper's last hypothesis. However, to measure the relative performance of programmatic acquirers in isolation, the following hypotheses are formulated.

> ***Hypothesis 2$_a$*** *The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies*

> ***Hypothesis 2$_b$*** *The long-term abnormal profitability of the programmatic strategy is nondifferent to that of other strategies*

4.2.2 Large deal

A rich core of studies has been devoted to examining the association between the relative size of acquiring- and target firms and their respective performance outcomes (Kusewitt, 1985; King et al., 2021). Various dimensions of firm size, such as assets, market capitalization, sales and number of employees, have been utilized to evaluate size differences (King et al., 2021). Early investigations suggest that both abnormally small and large relative size differences are associated with exacerbated performance (Kitching, 1967). This finding is in agreement with other studies highlighting the impending effects of a relative size mismatch (Kumar, 1985). Similar to the literature on M&A frequency, relative size is suggested to exhibit an inverted U-shape relationship with acquisition performance. For instance, Ahuja and Katila (2001) find that targets and acquirers of similar size tend to facilitate better knowledge integration and overall post-integration process. Furthermore, size relatedness can result in cost saving synergies (Ficery et al., 2007) by easilier identifying redundancies (Krishnan et al., 2007). Chatterjee and Wernerfelt (1991), Finkelstein and Haleblian (2002), and others (c.f. Heeley et al, 2006; Papadakis, 2005; Puranam and Srikanth, 2007; Slangen, 2006) support the notion of increased profitability when the acquirer and target exhibit similar size. Contrary, some authors argue that synergies tend to be higher when there is a relative size difference (Seth, 1990; Burton et al., 1994). Other scholars only find a slight correlation between size relatedness and performance (c.f. Hitt et al., 1991; Burton et al., 1994; Vermeulen and Barkema, 2001; Moeller et al., 2004).

In a meta-analytic study, King et al. (2021) find the size of an acquiring firm to have a negative short-term impact on stock market performance. This immediate reduction in stock prices aligns with shareholders' perceptions that large firms resort to M&A when they have exhausted internal growth opportunities. Similarly, Seth et al. (2002) use relative size to represent managerial preference for empire building. However, when the timeframe is extended above six months, King et al. (2021) discover a substantial and positive correlation between acquirer size and both short- and long-term accounting performance, as gauged by return on assets. Nevertheless, contradicting these results, Li et al. (2018) contend that regardless of acquisition frequency, large deals generate significantly less wealth than corresponding smaller ones. As such, King et al. (2021) advocate for cautious interpretation, as existing literature presents a range of confounding variables that impact the relationship between bidder size and performance.

Turning the focus to the absolute size of the target firm, both Dong et al. (2006) and King et al. (2021) demonstrate a significant negative impact on short term performance following large acquisitions. This outcome corroborates the theory that larger acquisition targets signal integration challenges to shareholders (Kusewitt, 1985; Dong et al., 2005). Roll's (1986) further posits that acquirers may be able to acquire large targets on more advantageous terms as the pool of potential acquirers tend to be smaller due to difficulties in assimilating the combined entity. Furthermore, when firms engage in large acquisitions, there may arise a higher level of caution as the potential financial

loss scales (Moeller et al., 2004). While several scholars uncover a positive and significant relationship between different size measures and performance (King et al., 2021), Higson and Elliot (1998) find that the significance of the size effect disappears when using multi-factor models. Powell (1997) contends that target firms in hostile takeovers tend to exhibit significantly larger market capitalizations as opposed to friendly takeovers. As hostile bids yield greater gains to the acquirer (Sudarsanam & Mahate, 2006), an indicated positive performance of relatively large deals may be a result of omitted variable bias.

Ellis et al. (2011) examines the influence of prior experience from small acquisitions on subsequent large acquisitions. The authors find that firms frequently engaging in small-size acquisitions tend to develop routines on the basis of such small acquisitions, making the developed capabilities less transferable to larger acquisitions (Sitkin, 1992). Moreover, as proposed by Shrivastava (1986), integrating small entities is highly distinct from larger acquisitions. Given that routines tend to exhibit inertial pressures (Szulanski, 1996), frequent acquisitions may be an impediment to isolated large deals when a firm engages in semi-frequent[4] acquisitions of varying sizes. Following the confounding theory and empirics, the following hypotheses will be tested.

> ***Hypothesis 3a*** *The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies*

> ***Hypothesis 3b*** *The long-term abnormal profitability of the large deal strategy is nondifferent to that of other strategies*

4.2.3 Selective

M&A literature typically refer to firms exhibiting infrequent acquisitions as non-serial or occasional acquirers. Although some of the existing literature suggest that serial acquirers tend to outperform non-serial acquirers (c.f. Malatesta & Thompson, 1985; Croci & Petmezas, 2009), these acquirers have also been found to generate positive abnormal returns from M&A (Huyghebaert & Luypaert, 2013). Correspondingly, Karolyi et al. (2015) finds that serial acquirers generate substantially less wealth for shareholders when compared to non-serial acquirers. As previously discussed under Section 4.2.1, a great deal of scholars have found the relationship between frequency and performance to exhibit an inverted U-shape. This relationship is due to the balance between time compression diseconomies and organizational learning (Dierickx & Cool, 1989). Although the internal acquisition capabilities and resources may be in a proportionate relationship to the number of acquisitions conducted, acquirers following the selective strategy may better balance the advantages and disadvantages of time compression diseconomies and dissipation of knowledge. The underlying assumption to such a proposition is that the selective acquirers are located further up on the inverted U-shape as the selective strategy definition lies somewhere between serial and non-serial acquirers.

[4] We define semi-frequent acquisition as such a frequency that does not fulfill the requirement of being defined as programmatic strategy but exhibits an acquisition frequency just slightly below the defined threshold.

Nonetheless, firms that rely too heavily on organic growth may encounter significant resource challenges. For instance, the persistent use of internal resources may give rise to organizational maturity, simplicity and inflexibility (Miller, 1994; Salvato et al., 2007), ultimately limiting a firm's knowledge base (Vermeulen & Barkema, 2001). Accordingly, firms that are too selective in their acquisition strategy may struggle to generate novel resources, thereby restricting the ability to innovate and adapt to changing market conditions (Brueller et al., 2014; Douma & Schreuder, 2017). Herein, M&A is proposed as a solution to break free from the damaging cycle (Salvato et al., 2007). By engaging in M&A firms are able to acquire new productive resources and capabilities, hence revitalizing the internal knowledge base (Penrose, 1959; Lockett et al., 2011). However, drawing inferences for solely frequency is subject to uncertainty due to a high level of ambiguity.

To untangle the causal ambiguity encircling the effect of prior experience on subsequent acquisitions, recent research has advanced the organizational learning theory by considering more detailed aspects relating to the quality, pattern, and context of experience. Collins et al. (2009) suggest that acquisition capabilities accumulated from previous acquisitions is more closely connected with the quality of learning rather than the quantity. Still, since establishing acquisition capabilities is a costly endeavor, it is typically not worthwhile for infrequent acquirers (Laamanen & Keil, 2008). However, Huyghebaert and Luypaert (2013) presents a novel way of assessing pre- and post-merger performance by analyzing the financial statements before and after the acquisition for non-frequent acquirers. The authors found a significant value-enhancement for the bidder through cost-based and revenue-based synergies. A more prudent approach by selective acquirers may underpin this result as selective acquirers are more concerned with ensuring compatibility, strategic fit, and allocating adequate time and resources on post-integration (Anand & Singh, 1997; Hitt et al., 2001; Epstein, 2004; Sudarsanam, 2010). Nevertheless, the quality of prior experience in terms of industry and geography is suggested to be critical moderators in achieving superior performance (Kengelbach et al., 2012; Brueller et al., 2014). Given the varied and uncorrelated findings, the following hypotheses are formulated.

> ***Hypothesis 4$_a$*** *The long-term abnormal market return of the selective strategy is nondifferent to that of other strategies*

> ***Hypothesis 4$_b$*** *The long-term abnormal profitability of the selective strategy is nondifferent to that of other strategies*

4.2.4 Diminutive

Strategy literature commonly investigates two different growth modes – organic growth and external growth by M&A (Penrose, 1959; Lockett et al, 2011). Compared to M&A, organic growth is achieved via internal resources and activities. The extant performance literature of these two modes is characterized by ambiguity and mixed results (Woodcock et al., 1994; Shaver, 1998; Brouthers et al., 2003). Moreover, in spite of the extensive scholarly literature, the knowledge of dynamic aspects of

growth through both external and organic means remains limited. Edith Penrose's theory (1959), widely regarded as one of the most influential theories of firm growth, posits that a firm's current growth rate is contingent on changes to its opportunity set and adjustment costs that arise from prior growth initiatives. The growth process is therefore subject to diverse constraints (Penrose, 1959). In extending Penrose's seminal work on firm growth, Lockett et al. (2011) assert that organic growth and acquisitive growth represent two distinct strategic options that exert varying impacts on a firm's future organic growth prospects. Specifically, the authors contend that prior organic growth initiatives act as a constraint on current organic growth, whereas past acquisitive growth has a favorable effect on current organic growth.

Penrose (1959) further suggests that acquisitive growth can enhance a firm's legitimacy in the stock market and reinforce its internal competence base, which consequently speaks against the diminutive strategy. Additional research finds that firms with a history of successful M&As are more likely to continue to engage in such activity (Shi et al., 2012), often attributed to organizational learning (Markides & Ittner, 1994; Basuil & Datta, 2015) and strategic momentum (Amburgey & Miner, 1992; Frick & Torres, 2002). Hence, the activity of acquisitions is expected to rise over time in response to positive outcomes and remain static or decline in response to negative outcomes. Following such logic, a firm that employs a diminutive strategy may signal unfavorable experiences in its past. Nevertheless, a recent study implies that as external growth reaches higher levels, the returns on investment tend to decline. In line with this rationale, a rise in acquisitive growth negatively impacts the otherwise positive effect of organic growth on profitability (Weiss et al., 2022).

These findings support the use of a diminutive strategy, however, firms that heavily rely on organic growth may encounter significant resource challenges. Although acquisitions can alleviate such growth constraints (Penrose, 1959; Lockett et al., 2011), they also present challenges within the scope of integration – a unique feature of the external growth process (Pablo, 1994; Zollo & Singh, 2004). These challenges are compounded in diminutive acquirers, where operational procedures tend to be routinized and conducted in a semi-automatic manner, even in circumstances where they may not be ideally suited, such as the integration process of M&As (Cohen & Bacdayan, 1994; Nadolska & Barkema, 2007). Jointly, these integration challenges adversely impact firms' profitability. Within the realm of managerial challenges, it is also essential to acknowledge the cognitive limitations that arise in connection to external growth. The adoption of a diminutive strategy should, as proposed by behavioral theory, mitigate the risk of managerial hubris (Roll, 1986), managerial self-interest (Rhoades, 1983), and managerial opportunism (Sudarsanam, 2012) – three motives advanced as explanations for negative outcomes in M&A.

Additionally, the process of acquisition is often accompanied by managerial diseconomies (Coase, 1995; McAfee & McMillan, 1995), challenges related to organizational acculturation and onboarding (Kitching, 1967; Nahavandi & Malekzadeh, 1988), as well as departure of top management (Krug et al., 2014). As a result, the pursuit of growth through M&A may give rise to

disruptions that compromise the benefits of organic growth (Paruchuri et al., 2006). On the contrary, organic growth fosters a gradual expansion of resources and capabilities, enabling organizational learning to develop in a controlled manner. Echoing such logic, research suggests that while M&A enhances market power in the short term, organic growth enhances operating efficiency over the long term (DePamphilis, 2010; Sudarsanam, 2010; Moatti et al., 2015). Still, based on the above findings, the efficiency of pre-acquisition planning and post-acquisition integration is a subject of inquiry when diminutive acquirers engage in M&A. Hence, the following hypotheses are formulated.

> ***Hypothesis 5a*** *The long-term abnormal market return of the prodiminutivegrammatic strategy is nondifferent to that of other strategies*

> ***Hypothesis 5b*** *The long-term abnormal profitability of the diminutive strategy is nondifferent to that of other strategies*

4.3 Alternative value drivers in M&A

While the primary focus of this paper centers around the relative value creation of specific M&A strategies, it is essential to recognize the presence of other factors influencing the value creation process of M&As. Therefore, this section presents recognized value drivers, suggested by scholars to impact the success (or failure) of M&As, to add nuance to the analysis and form a basis for the control variables[5] in the explanatory regressions.

4.3.1 Relatedness

When growing a business through M&A, management can generally choose between related acquisitions, where a bidder purchases a firm with some related aspect such as industry, or unrelated acquisitions (Rumelt, 1974). The core of the discussion about industry relatedness fundamentally rests on which synergies bear the greatest weight. Singh and Montgomery (1987) contend that related acquisitions provide more significant economies of scale and scope, while unrelated acquisitions, at best, deliver financial and administrative synergies. Other scholars argue that related acquisitions may increase operational synergies and sharpen the focus on core business through a better strategic fit, whereas unrelated acquisitions can provide a more efficient internal capital market, knowledge transfer, and resource sharing (Healy et al., 1992; Cartwright & Schoenberg, 2006; Rose et al., 2017). However, consolidating resources among previously independent entities also heightens the likelihood of adverse outcomes propagating through the newly-formed conduit, potentially engendering contagion effects. Furthermore, synergy-driven acquisitions increase resource use and intensify competition for finite resources. The presence of both contagion and capacity effects calls into question the belief that carefully planned, related transactions inevitably yield superior outcomes (Shaver, 2006). Unfavorable effects of related acquisitions have also been linked to a tendency among managers to overestimate operational synergies, ultimately causing a lower return on investment

[5] Further clarification of the variables is provided in Section 6.3.

(Rose et al., 2017).

Empirical research has shown that synergies take time to materialize (Maksimovic et al., 2011; Fulghieri & Sevilir, 2012). Similarly, Alhenawi and Krishnaswami (2015) conclude that synergies materialize over time, albeit differently in related and unrelated acquisitions. Gregory (1997) reports that unrelated acquisitions yield significantly negative abnormal returns in contrast to related acquisitions. Correspondingly, Maquieira et al. (1998) demonstrate that related acquisitions yield a higher increase in combined market value than unrelated acquisitions. In general, research finds that unrelated M&A elicit negative market responses and a decline in operating performance (cf. Doukas et al., 2001; Goergen & Renneboog, 2004; Tuch & O'Sullivan, 2007; Alhenaw & Krishnaswami, 2015). However, the effect of relatedness on value creation is not universally accepted given that value may also be created in unrelated acquisitions (cf. Lubatkin, 1987; Barney, 1988; Sudarsanam et al., 1996; Rose et al., 2017).

While relatedness is a crucial factor in M&A on account of strategic fit, resource and capability compatibility, and learning effects, Haspeslagh and Jemison (1991) contend that value creation in M&A is contingent upon the management of interdependencies rather than the degree of relatedness between the merging firms. Following this rationale, acquirers with profound acquisition capabilities are expected to exhibit superior performance, irrespective of relatedness. However, Kengelbach et al. (2012) and Brueller et al. (2014) postulates that relatedness will improve the quality of experience and result in better performance for subsequent acquisitions with similar traits. Still, acquisition capabilities involve a degree of specificity and are not a universal tool for succeeding in M&A (Haspeslagh & Jemison, 1991). All in all, prior research has yielded an ambiguous understanding of relatedness influence on M&A value creation, implying that these are motivated by different strategic rationales and should be analyzed separately.

4.3.2 Cross-border transactions

Another extensively studied value driver in M&A is the distinction between domestic and cross-border deals. As explicated in Section 3.1, the prevalence of cross-border transactions has increased during the 21st century. This trend can be largely attributed to the growing impact of globalization, economic integration, and competitive pressures (Sudarsanam, 2010). Within economic theory, there exists a compelling rationale for engaging in cross-border transactions. By entering a foreign market, the acquirer gains access to new customers, a larger earnings pool, and decreased country-specific risks. Additional strategic advantages include the ability to enhance market power, expand geographic reach, and economies of scale. Cross-border transactions can likewise offer financial benefits, such as the means to optimize tax structures and capitalize on favorable exchange rate fluctuations through operational relocation. Nonetheless, empirical studies yield inconsistent results in this regard (Goergen & Renneboog, 2004).

Acquiring a foreign company exposes the acquirer to a different legal system, which may

encompass distinct taxation and accounting principles, divergent political and economic environments, and other barriers of a structural, technical, or informational nature (Sudarsanam, 2010). While some argue that cross-border M&A is not associated with higher levels of cultural difficulties, others find that such discrepancies can complicate the post-acquisition integration process and potentially impede knowledge transfer, ultimately diminishing synergies (Very et al., 1997). Empirical evidence has yet to reach a consensus regarding the relative merits of domestic versus cross-border transactions, and research outcomes appear to vary based on geographic region. In the US, scholars have identified that cross-border transactions lead to greater abnormal market returns (Hazelkorn & Zenner, 2004; Vinogradova, 2021). Meanwhile, Danbolt (1995), Martynova and Renneboog (2006), and Rose et al. (2017) report contradictory findings in Europe, indicating that abnormal returns for domestic transactions are significantly greater than those for cross-border transactions.

As postulated by Markides and Ittner (1994), prior experience in international M&A tends to facilitate value creation in subsequent international acquisitions. Furthermore, irrespectively of frequency, firms may enhance performance from extending their search perimeter and avoiding home bias (Coval & Moskowitz, 1999). However, cross-border acquisitions may be more prone to managerial motives, including empire building and risk reduction (Seth et al., 2002; Aybar & Ficici, 2009). Managers seeking to stabilize earning streams may find foreign acquisitions to be a more favorable option, given a low correlation between earnings in target- and home country (Ahimud & Lev, 1981). To the best knowledge of the authors, there is no empirical research on the effect of cross border transactions in a Nordic context. The fact that Nordic countries exhibit similar legal and cultural features, and a great amount of transactions involving Nordic firms is conducted with other Nordic countries, may lead to false inferences when applying prior research to a Nordic context.

4.3.3 Means of payment

According to the works of Wansley et al. (1983) and Dewenter (1995), the phenomenon of cross-border returns stems from disparities in the bidding characteristics of domestic and cross-border acquisitions. Similarly, Danbolt (2004) notes that the effect of cross-border acquisitions can be attributed to factors such as the means of payment. M&As are typically funded through cash or equity or a structure that incorporates both. Prior literature has established that the choice of payment method significantly influences the value creation resulting from M&As. The payment method selected by acquirers may be attributable to management expectations regarding future market performance. Specifically, acquirers may opt for cash in the event of an undervalued stock, while equity instruments may be favored when a firm's shares are perceived as overvalued (Kanungo, 2021). As follows, cash payments can signal that management anticipates an increase in firm value over the post-acquisition period (Tuch & O'Sullivan, 2007). Conversely, using equity to fund transactions can result in a decline in share price due to increased outstanding shares together with an unchanged enterprise value

given the time lag of potential synergies (Mitchell et al., 2004).

The majority of research on payment methods in M&A concentrates on whether cash or equity offers are optimal for maximizing value. Empirical studies have generated fairly consistent results, indicating that cash bids are linked to superior performance in both the short-run (c.f. Travlos 1987; Draper & Paudyal 1999; Walker 2000; Andrade et al., 2001; Dong et al. 2006; Martynova & Renneboog, 2006) and long-run (c.f. Loughran & Vijh 1997: Cosh & Guest 2001; Linn & Switzer 2001; Antoniou & Zhao, 2004; Conn et al., 2005). Furthermore, Goergen and Renneboog (2004) assert that studies conducted in the US demonstrate that cash transactions result in greater value creation compared to European studies. However, Ismail (2008) challenges these assertions with evidence from the US, indicating that the outperformance of frequent acquirers compared to infrequent acquirers is magnified in equity offers. Chatterjee and Kuenzi (2001) is among the few that report significant positive market performance in equity transactions on a broad level. Still, given the coherent results, cash offers are expected to positively impact the performance outcome irrespective of the firms' M&A strategy. However, the performance of acquirers resorting to cash offers may be further impacted by market conditions. Ismail (2008) finds that equity offerings perform better during favorable market conditions when stocks are richly valued, whereas the positive effect of equity financing may be reversed during less favorable conditions (Shleifer & Vishny, 2003; Erel et al., 2012).

4.3.4 Industry context

McGahan and Porter's (1997) study reveals that industry effects constitute 36% of the explained variance in firm profitability on a general level. In M&A literature, studies, including those by Stigler (1950), Ferris and Park (2002), and DeLong (2003), provide supporting evidence that M&A value creation exhibits notable industry heterogeneity. Certain factors are frequently cited within the generous, albeit inconsistent, literature concerning industry determinants in M&A. One such factor is found in highly knowledge-intensive industries with significant intangible assets, including human capital, where information asymmetry poses a significant obstacle (Coff, 1999). The importance of R&D within an industry has also emerged as a statistically significant determinant in explaining premiums paid (Laamanen, 2007), whereby empirical evidence shows that acquisitions within the technology sector yield higher premiums, irrespective of the macroeconomic conditions (Kohers & Kohers, 2001). The presence of multiple bidders is likewise associated with higher premiums, where factors such as industry-specific consolidations increase the likelihood of bidding wars (Giliberto & Varaiya, 1989).

Another decisive factor impacted by industry is synergy realization. Acquiring complementary resources enables firms to create network and lock-in effects – a strategy mostly seen in technology-intensive industries (Arthur, 1989). Although the majority of research suggests diseconomies of scale following M&As in R&D-intensive industries (Cockburn & Henderson, 2001),

other evidence supports significant scale and productivity improvements in these industries (Nightingale, 2000). Given that knowledge is a significant driver of M&A, knowledge-intensive industries tend to face considerable obstacles during the post-integration process. The challenge of integrating people and combining cultures presents another obstacle, particularly in industries where human capital is of utmost importance (Cannella & Hambrick, 1993). Such challenges become more manageable within standardized industries (Teece, 1977). Overall, numerous factors are in play when evaluating M&A value creation between different industries. The mentioned determinants are just a few of those, which may impact the relative performance across distinct M&A strategies.

4.3.5 Macroeconomic context

As prevalent from M&A waves, the state of the macroeconomic environment is found to mediate the intensity of M&A activity (Gort, 1969; Golbe & White, 1998; Harford, 2005; Martynova & Renneboog, 2008). Maksimovic and Phillips (2001) similarly postulates that M&A activity is procyclic. The scholarly literature suggests that the underlying reason for this phenomenon is attributed to the notion that acquisitions represent a distinct type of investment, whereby periods of economic prosperity engender heightened levels of investment activity (Kusewitt, 1985). In this connection, Choi and Jeon (2011) find that the most important macroeconomic factors, influencing M&As, are real income, stock market conditions and monetary policy. Although there is a great level of consensus among scholars concerning the association between macroeconomic context and M&A frequency, its impact on different performance measures is less defined. Rhodes and Stelter (2009) argue that acquisitions occurring during economic contractions often experience better performance. Since firm values tend to drop during recessions, it may present the acquirer with an opportunity to acquire the target at a discount (Wann & Lamb, 2016). However, the evidence is conflicting and other scholars have found contradicting results (c.f. Moeller et al., 2005).

Carow et al. (2004) elaborate on the causes above and demonstrate that there are intra-wave differences in acquisition performance which can skew empirical findings. In this relation, McNamara (2008) finds that early movers in M&A waves exhibit positive returns while late-stage acquisitions generate negative returns. This result seems intuitive given that M&A waves are coinciding with economic expansion and end with contractions. While acquisitions made during a recession tend to be accompanied by a discount, this is seldom the case for late-stage acquisitions made at the height of a stock market boom (Wann & Lamb, 2016). To this end, late-stage acquisitions will be entangled in an overall heightened systematic risk as the economic contraction unfolds, subsequently followed by a decrease in production, lower demand, and less consumer spending. In turn, both operating performance and especially market performance will likely suffer from late-stage acquisitions if the event window adequately captures the contraction.

Interestingly, Alexandridis et al. (2017) find that M&A transactions have created more value for the acquiring firms post-GFC than in the past. Empirical evidence is yet to be established to

support this hypothesis in a Nordic context. While the Nordic M&A market has been found to differ from other global markets (Hellgren & Schriber, 2003; Lee et al., 2015; Rose et al., 2017), it is likely that the crisis had an impact on value creation in the Nordic region as well. As suggested by the aforementioned findings, it is deemed appropriate to consider a multitude of aspects regarding macroeconomic context. First, whether performance is associated with economic expansion and contraction. Second, if the stage within an economic expansion has a significant effect on performance. Last, whether there is a significant difference between acquirer's performance pre- and post-GFC.

4.3.6 Acquirer financial characteristics

Acquirer size and valuation is a well covered area in literature, suggested to impact the performance of acquisitions. Laamanen and Keil (2008) argue that post-acquisition integration is positively associated with the absolute size of the acquirer since larger firms generally have greater resources and internal capabilities to deploy. On the other hand, Gorton et al. (2009) postulates that smaller acquirers generate higher returns for their shareholders on account of making more targeted acquisitions to better position themselves in their industry. Similarly, Moeller et al. (2004) find acquirer size and financial return to be inversely related. From a managerial perspective, the degree of alignment between merging firms' top management tends to be higher for smaller firms (Demsetz & Lehn, 1985). However, prior studies lack a unified definition of size, whereby criterion varies between enterprise value, asset value, revenue or number of employees (Filipović, 2012), which may explain some of the divergent findings on the impact of acquirer absolute size.

Valuation is another mechanism that has gained attention in M&A literature, stemming from the premise that higher valued firms to a larger extent engage in M&A (Jovanovic & Rousseau, 2002; Erel et al., 2012). Moreover, during favorable market conditions, richly valued firms have the option to exploit their equity as cheap currency instead of using cash as means of payment (Bouwman et al., 2009). This suggests that firms can acquire on more favorable terms and should therefore, all else equal, receive a higher return when compared to a lower valued acquirer. In conclusion, the extant literature on alternative value drivers offers insightful perspectives into the mechanisms underlying value creation in M&A. Nonetheless, the literature has yet to explore the extent to which these value drivers vary across different M&A strategies. To address this research gap and answer the final research question, we develop the below hypotheses.

> ***Hypothesis 6a*** *The defined alternative value drivers: relatedness, cross-border transactions, means of payment, industry context, macroeconomic context, and acquirer financial characteristics, have no effect on abnormal market returns across M&A strategies*

> ***Hypothesis 6b*** *The defined alternative value drivers: relatedness, cross-border transactions, means of payment, industry context, macroeconomic context, and acquirer financial characteristics, have no effect on abnormal profitability across M&A strategies*

4.4 Hypotheses summary

For ease of reference, Table 4 briefly summarizes the hypotheses advanced in prior sections.

Table 4 *Summary of hypotheses*

Hypothesis	Data sample	Focus area	Description
$H1_a$	Total sample	Market performance	M&A creates no long-term abnormal market returns to the acquirer
$H1_b$		Operating performance	M&A creates no long-term abnormal profitability for the acquirer
$H2_a$	Programmatic	Market performance	The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies
$H2_b$		Operating performance	The long-term abnormal profitability of the programmatic strategy is nondifferent to that of other strategies
$H3_a$	Large deal	Market performance	The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies
$H3_b$		Operating performance	The long-term abnormal profitability of the large deal strategy is nondifferent to that of other strategies
$H4_a$	Selective	Market performance	The long-term abnormal market return of the selective strategy is nondifferent to that of other strategies
$H4_b$		Operating performance	The long-term abnormal profitability of the selective strategy is nondifferent to that of other strategies
$H5_a$	Diminutive	Market performance	The long-term abnormal market return of the dinimutive strategy is nondifferent to that of other strategies
$H5_b$		Operating performance	The long-term abnormal profitability of the diminutive strategy is nondifferent to that of other strategies
$H6_a$	Total sample	Market performance	The defined alternative value drivers have no effect on abnormal market returns across M&A strategies
$H6_b$		Operating performance	The defined alternative value drivers have no effect on abnormal profitability across M&A strategies

Source: Own contribution

PART IV

DATA & METHODOLOGY

5. DATA

A thorough data selection process was undertaken to ensure the robustness and reliability of the research findings. The following section outlines the selection process, including the data types and databases used. Subsequently, the sample criteria are discussed, and an outline of descriptive statistics based on the final data sample is presented.

5.1 Data selection

The thesis draws on secondary quantitative data from diverse databases. The quality of secondary data significantly impacts data reliability and validity. Hence, the study solely collects data from recognized and reputable databases. The acquisition data, encompassing bidder, target, transaction date, deal value, geography, and industry, is predominantly sourced from Mergermarket. To the knowledge of the authors, Mergermarket provides one of the most comprehensive and up-to-date databases on Nordic transactions. To supplement the transaction data with market- and accounting data, Refinitiv Eikon is employed. Mergermarket is a frequently employed tool among investment banks and other professional services within the finance industry due to its richness of data. Unlike other databases, Mergermarket incorporates the identities of individuals who advised the firms both legally and financially on a specific deal. Although such data is not directly utilized in the study, it alleviates the data set from potential biases. Including the individuals who worked on the deal introduces a modicum of accountability as advisors have a vested interest in ensuring the precision of the data. Similarly, Refinitiv Eikon is renowned in the financial industry to provide reliable, accurate and up-to-date information from a vast number of stock exchanges. In addition to Mergermarket and Refinitiv Eikon, stock market data for the benchmarks has been collected from Nasdaq and the platform S&P Capital IQ – a preeminent purveyor of ratings, data, and research on a global scale. Closing prices, adjusted for stock splits and dividends, are gathered for each acquirer and the benchmark. In consideration of the fact that the accounting analysis relies on relative metrics that are benchmarked against a group of Nordic peers, all accounting data is gathered in euro. Meanwhile, to mitigate the impact of currency-related distortions, all stock prices are collected in the respective local currencies.

5.2 Sample selection

The sample selection process is separated into two phases, sas illustrated in Table 5. Initially, filtered deal information is collected from the selected databases, after which the sample undergoes manual filtration to obtain the final sample. The sample used in this thesis encompasses M&As announced and completed by Nordic firms[6] between January 2001 and December 2022. Consequently, the sample

[6] The classification of Nordic firms is based on the official registration country of the parent firm.

comprises transactions made by companies situated in Sweden, Denmark, Norway, Finland, or Iceland. The temporal eligibility of transactions is determined based on the date of public announcement. Deals announced during the sample period are included, whereas deals that remain incomplete at the end of the sample period are excluded. Herein, it is worth noting that the sample is susceptible to survivorship bias, given how the study solely includes firms that have survived on the stock market over the entire sample period. Survivorship bias may engender an upwardly skewed perception of the past performance and thus lead to biased conclusions related to the value created through M&A activity (Brown et al., 1992).

Table 5 *Sample selection process*

Step	Parameter	Filter	# Deals
	MergerMarket		
1	Time horizon	1997-01-31 - 2022-12-31	~195,000
2	Bidder	Is public	~78,000
3	Bidder country	Is Sweden, Denmark, Norway, Iceland, Finland	9,495
	Authors Filtration		
4	Announcement date	2001-01-01 - 2022-12-31	9,139
5	Deal completed	Yes	8,573
6	Bidders outside Nordics	Remove	8,442
7	Deal value	Is available	4,622
8	Duplicates / Private subsidiaries	Remove	2,773
9	IPO before deal	Yes	2,373
	Refinitiv Eikon		
10	EV / Negative EV	Is available / Remove	2,328
	Strategy framework		
11a	Bidder	Is Programmatic	908
11b	Bidder	Is Large deal	222
11c	Bidder	Is Selective	1,049
11d	Bidder	Is Diminutive	149
Total # Deals			2,328

Source: Own contribution

(1) The data sample originates from all reported transactions on Mergermarket up until 2022-12-31, resulting in roughly 195,000 transactions. To ensure convenient measurability of market and accounting performance, (2) the sample is filtered to only include publicly listed acquirers. Thereafter, (3) the transactions are filtered to only include Nordic acquirers. As a result, the sample downloaded from Mergermarket consists of 9,495 transactions. To accommodate for financial information not being available through Refinitiv Eikon before 2001-01-01, (4) a manual filtration is made to only include transactions announced between 2001-01-01 and 2022-12-31. To avoid analyzing acquirers as if the deal was completed, when it in reality was not, (5) only transactions with a completion date are analyzed. (6) Further filtration is made to exclude non-Nordic bidder deals incorrectly included in the data set from Mergermarket.

A great amount of transactions do not include a reported deal value. However, as the relative size variable is critical to our strategy formulation and the scope of our study, (7) only deals with a reported deal value are included. When importing the sample for analysis in Refinitiv Eikon, (8) a few duplicate deals as well as deals made by privately owned subsidiaries whose parent company is publicly traded are discovered and removed. Moreover, when filtering for public bidders in Mergermarket, the filter does not consider if the bidder was publicly listed as of the transaction date but if the bidder is publicly traded as of the current date. Hence, (9) the data set is processed to only include deals where the bidder had its IPO prior to the specific transaction. Finally, (10) to ensure applicability of our strategy framework, a manual treatment is conducted to remove acquirers with insufficient or negative enterprise value data, mainly constituted by banks. Ultimately, the data selection process results in a final sample of 2,328 M&A transactions. (11) The final sample is subsequently divided into four distinct strategy portfolios based on the acquirers' strategic pattern with respect to the average yearly frequency and relative deal size. Out of the total 2,328 transactions, 908 are identified as *Programmatic*, 222 as *Large deal*, 1,049 as *Selective*, and 149 as *Diminutive*.

5.3 Descriptive statistics

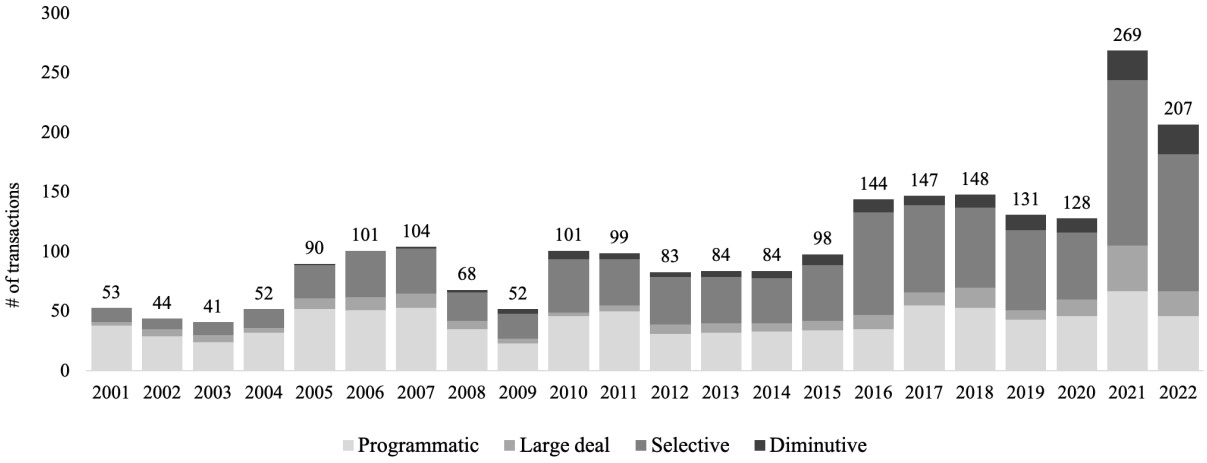
The final sample of 2,328 M&A transactions is comparable to prior market performance studies, albeit in the upper 10th percentile compared to accounting studies (see Table 2 and 3). This is in spite of the fact that the Nordic M&A market examined in this paper, on average, is smaller than the markets in comparable studies. The succeeding section provides an account of the final dataset, including descriptive statistics. A summary of the transaction sample is available in Appendix E. Table 6 and Figure 2 provide an overview of how transactions in the final data sample are distributed across the sample period and each strategy, illustrating the number of transactions in each year.

Table 6 *Number of transactions per year and strategy*

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Programmatic	38	29	24	32	52	51	53	35	23	46	50	31	32	33	34	35	55	53	43	46	67	46	908
Large deal	3	6	6	4	9	11	12	7	4	3	5	8	8	7	8	12	11	17	8	14	38	21	222
Selective	12	9	11	16	28	39	38	24	21	45	39	40	39	38	47	86	73	67	67	56	139	115	1,049
Diminutive	0	0	0	0	1	0	1	2	4	7	5	4	5	6	9	11	8	11	13	12	25	25	149
Total	53	44	41	52	90	101	104	68	52	101	99	83	84	84	98	144	147	148	131	128	269	207	2,328

Source: Own contribution

Figure 2 *Number of transactions per year and strategy*



Source: Own contribution

It should be noted that the development in the M&A activity may differ from the Nordic M&A market due to the screening criteria used in the selection process described above. Overall, the descriptive statistics demonstrate a significant uptick in the number of transactions leading up to the GFC, beginning in late 2007. These transaction patterns likewise follow the 6th M&A wave spanning from 2003 to 2007. After a couple of years in a downturn, permeated by unfavorable macroeconomic conditions, the number of transactions rebounded back to pre-GFC levels. Meanwhile, in line with the 7th M&A wave, which started in 2014, the transaction activity ramped up, reaching a record level in 2021.

Table 7 provides an overview of the transactions in the data set distributed on the geographical location and industry of the acquirer. As illustrated in the table, most transactions in the sample are completed by firms located in Sweden, followed by Finland, Norway, Denmark, and Iceland. The sample contains transactions from a wide range of industries, although Industrials (GICS code 2010) dominates with almost 30% of the total dataset, followed by Information Technology (GICS code 4510) and Communication Services (GICS code 5010).

Table 7 *Number of transactions per industry and country*

GICS code	Industry name	Sweden	Denmark	Finland	Norway	Iceland	Total
4510	Information Technology	162	13	78	54	0	307
3510	Health Care	127	43	13	12	3	198
3010	Consumer Staples	46	28	16	35	1	126
1010	Energy	9	0	1	79	0	89
6010	Real Estate	48	5	4	6	0	63
4010	Financials	108	23	27	29	0	187
5010	Communication Services	155	12	40	58	0	265
2510	Consumer Discretionary	117	12	21	11	0	161
2010	Industrials	437	57	89	111	1	695
1510	Materials	84	23	57	40	0	204
5510	Utilities	7	5	16	5	0	33
Total		1300	221	362	440	5	2328

Source: Own contribution

An overview of selected deal-specific characteristics is displayed in Table 8. The table presents statistics across each strategy and is divided between two periods in line with the paper's conceptual framework. The total number of unique bidders is 188 for the first period and 548 for the second. Interestingly, the selective strategy dominates across the entire sample period, whereas the other three strategies shift places. As evident, both the number of bidders and transactions are clustered in the second period, which is expected given the survivorship bias permeating the sample selection process. Notably, programmatic acquirers seem to engage in the largest transactions, as measured by target enterprise value. Nevertheless, when factoring in the acquirers' enterprise value, the programmatic strategy is found to acquire relatively small firms, as measured by the relative size. Contrary, the diminutive strategy has the largest relative size metric in the second period, despite having the lowest average target enterprise value, ultimately illustrating how these acquirers tend to be relatively small. In terms of relatedness, we cannot spot any significant differences between the strategies. Similar findings are made when dissecting the means of payment. Nevertheless, it is evident that programmatic acquirers engage in cross-border transactions to a much greater extent than other acquirers. This could be related to the fact that these firms must look for deals abroad in order to find attractive targets given their high-frequency deal pattern. No specific structure is seen related to the macroeconomic contexts. On average, the number of transactions made during a downturn, defined as the global recession beginning in December 2007 and ending in June 2009 (Rich, 2013), is about 3.6%. Meanwhile, the number of late- and early intra-wave transactions are 9% and 18%, respectively.

Table 8 *Deal-specific characteristics*

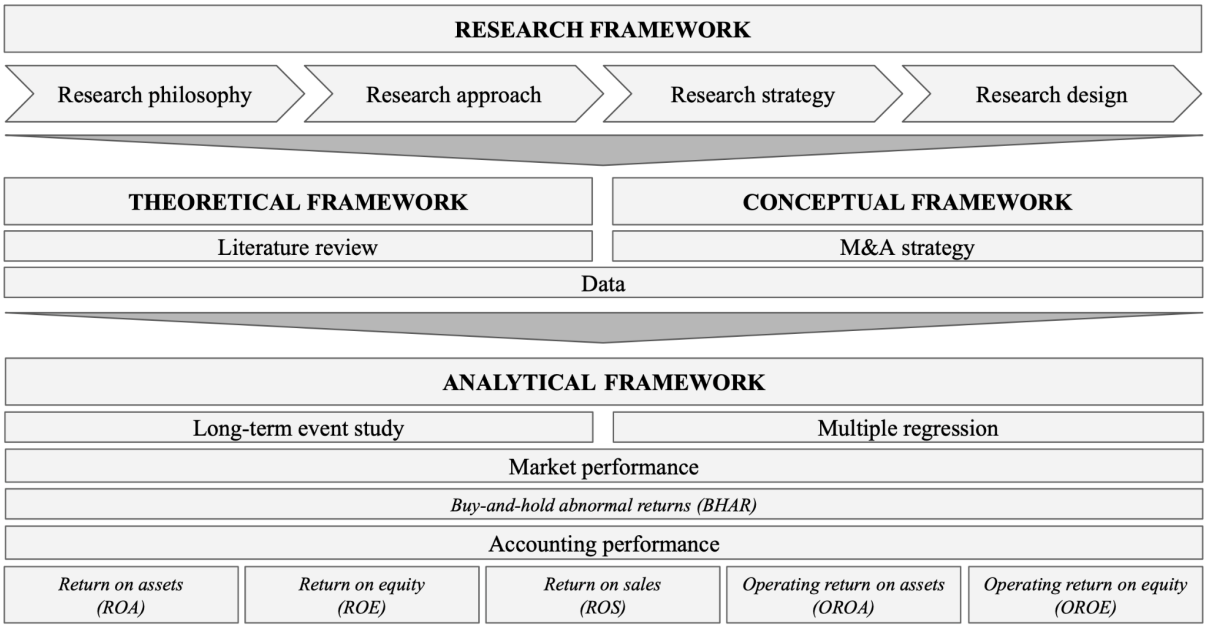
	Total		Programmatic		Large deal		Selective		Diminutive	
	2001-2008	*2009-2022*	*2001-2008*	*2009-2022*	*2001-2008*	*2009-2022*	*2001-2008*	*2009-2022*	*2001-2008*	*2009-2022*
# Unique bidders	188	548	46	68	36	71	104	277	2	132
# Transactions	553	1775	314	594	58	164	177	872	4	145
# Transactions per year	1.40	0.98	2.14	2.07	0.34	0.34	0.42	0.50	1.41	0.15
Target enterprise value (EURm)	321	312	439	418	327	343	116	275	55	62
Relative size	0.24	0.36	0.10	0.08	1.27	1.35	0.15	0.11	0.00	1.83
Relatedness (bidder-target)	88%	83%	89%	83%	76%	78%	89%	83%	100%	85%
Relatedness (target-target)	48%	42%	48%	45%	52%	38%	49%	41%	25%	42%
Cash payment	90%	92%	93%	94%	71%	79%	89%	95%	100%	78%
Cross-border	71%	71%	82%	82%	48%	53%	59%	70%	25%	58%
# Transactions (downturn)	68	17	35	6	7	0	24	9	2	2
# Transactions (late intra-wave)	205	0	104	0	23	0	77	0	1	0
# Transactions (early intra-wave)	97	326	67	102	9	27	21	171	0	26

Source: Own contribution

6. METHODOLOGY

This section delineates the methodological considerations and decisions undertaken during the thesis, intending to provide transparency regarding the procedures and assumptions underlying the conclusions and results. The methodological approach to the thesis process is illustrated in Figure 3. Prior sections have presented the theoretical- and conceptual framework. As follows, we direct attention to the research- and analytical framework alongside research quality and overarching critical reflections.

Figure 3 *The methodological approach*



Source: Own contribution

6.1 Research framework

A research framework incorporates several fundamental layers, including philosophy, approach, strategy, and design (Saunders et al., 2015). In this connection, it is essential to justify the decision-making process that led to the central point of a research study (Crotty, 1998). Accordingly, the current section serves the primary purpose of elucidating the underlying framework adopted to effectively and succinctly address the identified research problem.

6.1.1 Research philosophy

The concept of research philosophy refers to "*a system of beliefs and assumptions about the development of knowledge*" (Saunders et al., 2015: 124). In this realm, Crotty (1998) expounds that *epistemological*, *ontological*, and *axiological* assumptions form a crucial part of researchers' worldview. Epistemological assumptions refer to beliefs about human knowledge. Meanwhile, ontological assumptions refer to those about the nature of the phenomena under investigation and axiological assumptions to the degree and manner in which personal values affect the research

process. These assumptions inevitably shape the authors' understanding of research questions, methods used, and interpretation of findings. A robust and coherent research philosophy ensures that all research components are aligned and integrated, resulting in a coherent research project (Saunders et al., 2015).

The field of business and management encompasses five major philosophical perspectives: *positivism*, *critical realism*, *interpretivism*, *postmodernism*, and *pragmatism*. While there is no consensus among researchers regarding the most suitable philosophical perspective, this study adopts a positivist stance. This perspective bears a strong resemblance to the tenets of the natural sciences domain (Johnson & Gill, 2010). Ultimately, positivist research is characterized by a structured methodology, which contributes to its ability to attain a high degree of validity and reliability (Cohen et al., 2017). Given that this thesis aims to elucidate how distinct strategic patterns underlie value creation in the context of M&A, the positivist philosophical stance is deemed suitable. Epistemologically, adopting a positivist philosophy entails that the authors consider only observable phenomena as legitimate and factual data while emphasizing causal relationships. Ontologically, an external perspective is taken towards the topic of investigation, facilitating an objective interpretation of reality. Finally, from an axiological standpoint, the research is conducted in an impartial and value-neutral manner to the greatest extent possible (Saunders et al., 2015).

6.1.2 Research approach

The degree of clarity regarding the theoretical framework at the outset of a project prompts a query regarding the research approach. Typically, this issue is represented by two alternative approaches distinguished by the form of reasoning. *Deductive* reasoning involves proceeding from general premises to more specific conclusions, whereas *inductive* reasoning entails the reverse process of moving from specific observations to broader generalizations and theories (Ketokivi & Mantere, 2010). Accordingly, a research approach is contingent on the function of theory in the research process (Bell et al., 2022), wherein a deductive approach aligns with the philosophical perspective of positivism (Saunders et al., 2015). Although the thesis forms a conceptual framework for the respective M&A strategies, it follows deductive reasoning, using established theory as a basis for empirical investigation via the formulation and testing of hypotheses.

6.1.3 Research strategy

How a research question is framed will likely lead to an *exploratory*, *descriptive*, or *explanatory* research strategy. Undertaking an exploratory study can be an effective approach to raising open-ended questions that facilitate the discovery and comprehension of a particular topic of interest. The purpose of descriptive research, on the other hand, is to construct an accurate depiction of events, individuals, or situations. Finally, research inquiries that seek to establish causal relationships between variables may be denoted explanatory (Saunders et al., 2015). The present thesis aims to undertake a

combined exploratory- and explanatory study, commencing with an exploratory event study that seeks to discover novel insights and develop a better understanding of the circumstances within the Nordic M&A market. This exploratory phase serves as a precursor to the subsequent explanatory phase, which seeks to identify causal relationships and elucidate the underlying reasons for the observed circumstances. Herein, Creswell (2014) underscores the appropriateness of employing a positivist perspective in explanatory research, given its deterministic philosophy, emphasizing the need to identify variables that influence outcomes.

6.1.4 Research design

Research design generally serves as a manifestation of the decision to opt for either *quantitative* data, which can be expressed numerically, or *qualitative* data, which cannot. This thesis adopts a quantitative research design, commonly linked with positivism and deductive reasoning. Here the primary emphasis is placed on employing data to test a theory and examine relationships between constructs and variables. The thesis objective of statistical generalizations necessitates a focus on distributions, averages, and medians. However, such generalization poses challenges to both internal and external validity. Employing qualitative methods to capture the intricacies of diverse M&A strategies could have been implemented to enhance internal validity. Nevertheless, qualitative methods would yield less generalizable outcomes and consequently undermine external validity. Instead, the present study employs various quantitative methods and statistical tests to enhance the robustness of its findings. Measuring M&A performance through multiple constructs also allows the authors to triangulate results, corroborate the findings (Saunders et al., 2015), and provide a multidimensional view of value creation (Venkatraman & Ramanujam, 1986).

Another critical question to be asked when designing research is the time horizon. A research design can either be *cross-sectional*, examining a particular moment in time, or *longitudinal*, studying a more extended period. This thesis employs panel data, which combines the features of cross-sectional and longitudinal studies. Specifically, this research seeks to investigate the creation of value at various points in time following an acquisition. The primary advantage of longitudinal research lies in its ability to explore changes and developments over time. Meanwhile, the cross-sectional analysis establishes the relationship between strategy and value creation (Saunders et al., 2015).

6.2 Event study

Following the outline of the research design, a logical progression involves a detailed exposition of the analytical techniques employed (Saunders et al., 2015). Event studies are a common method used in financial research to analyze the impact of strategic events, such as acquisitions, stock splits, earnings announcements, and equity offerings (Kothari & Warner, 2007). The use of event study

methodology necessitates consideration of two factors, namely, an appropriate event window and benchmark for calculating abnormal returns. The benchmarks used for market- and operating returns will be discussed under Section 6.2.2.2 and 6.2.3.2, whereas the event window is elaborated on below.

6.2.1 Event window

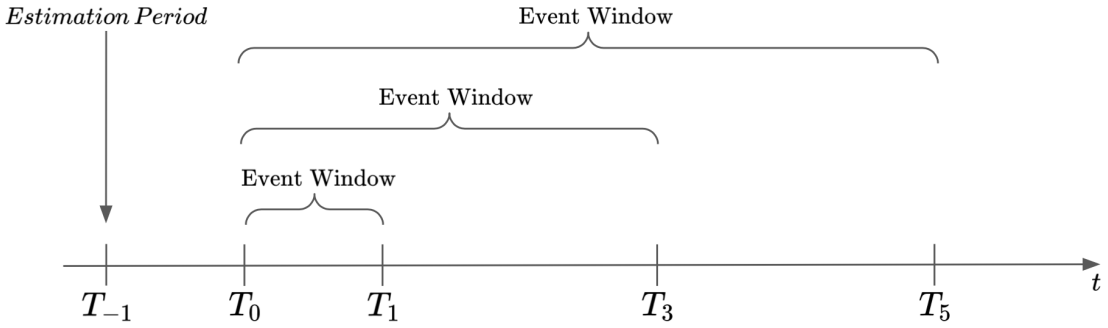
An important distinction to make when conducting event studies on the performance of acquisitions is the definition of the event itself (MacKinlay, 1997). Herein, the date of interest is the public announcement of the acquisition. This is due to shareholder expectations which will already be priced into the share price between the announcement date and the close of the acquisition – a period that can take months or even years. While there is no universal agreement on the selection of event windows, they can generally be categorized as either short-run or long-run. The former pertains to days or months surrounding the announcement, whereas the latter spans months or years. The selection of an appropriate performance measure also varies significantly across studies (c.f. Dutta & Jog, 2009; Dranev et al., 2019; Kolari et al., 2021).

Short-window event studies are widespread in strategic management and finance literature. The ease of use and the broad availability of stock price data are among the main factors contributing to this phenomenon (McWilliams & Siegel, 1997). Short windows have also been recognized for their statistical advantages, as they are less susceptible to interference from exogenous variables or external events. In line with the semi-strong form of the efficient market hypothesis (EMH), short-window event studies are predicated on the assumption that the initial market response to strategic events accurately captures their economic ramifications in a complete and unbiased manner (Fama, 1991). While this assumption may hold for some events, the initial market reaction may be biased or incomplete when the event carries complex implications that are challenging to foresee. M&As are inherently complex events that can have wide-ranging impacts on diverse facets of the firm, including control systems, culture, and management. Consequently, findings from short-window event studies focused on M&A often yield erroneous inferences as scholars tend to associate the market's reaction to an announcement of a strategic event with the actual value created by the event rather than the expected value it will create (Oler et al., 2008).

However, despite its historical acceptance in literature, more recent studies in finance (e.g., Shleifer, 2000) and economic sociology (e.g., Zajac & Westphal, 2004) suggests that the EMH may not always hold. Therefore, evaluating the long-term returns linked to an event may be necessary to assess its economic impact accurately. The heterogeneity with respect to time frame and its resulting effect on performance outcomes is something that has been criticized (Thanos & Papadakis, 2012). Despite an absence of unanimity, a dominant body of studies seems to pivot around a 3-year period when measuring both long-term market performance and accounting performance (c.f. Zollo & Singh, 2004; Powell & Stark, 2005; Bild et al., 2010; Martynova et al., 2007). As this paper seeks to research the long-term relative performance effects of distinct M&A strategies, while augmenting the

comparability, the event study measure performance 1 year ($t_{0+1} \equiv T_1$), 3 years ($t_{0+3} \equiv T_3$), and 5 years ($t_{0+5} \equiv T_5$) following the announcement of the acquisition ($t_0 \equiv T_0$). As the change in operating performance requires an estimation period, it will be assessed based on prior year's performance ($t_{0-1} \equiv T_{-1}$).

Table 9 *Illustration of estimation period and event windows*



The illustrated timeline includes the 1-, 3-, and 5-year event windows, relating to the market and operating performance calculation, and the estimation period, relating to the operating performance calculation.
Source: Own contribution

The study employs a multifaceted approach by considering several distinct event windows. Whereas the integration process may be rapidly conducted for smaller acquisitions, the integration process for large deals can sometimes last for several years. Accordingly, studies investigating larger acquisitions need to adopt longer event windows to assess the success of such transactions. However, a drawback of applying too long event windows is the potential noise or bias from other acquisitions that may be contained within the longer timeframe, making it more difficult to draw inferences from such results. This pitfall can be avoided by applying a multitude of event windows (Thanos & Papadakis, 2012).

6.2.2 Long-term market performance

As per finance theory, stock prices incorporate all relevant information related to a firm's future expected cash flows. Thus, event studies are vital in financial market research, serving as a mechanism to evaluate market efficiency (Brown & Warner, 1980; Fama, 1991). However, market-based event studies focusing on stock market performance display a considerable variation in the measure of abnormal returns (Barber & Lyon, 1997). This paper's measure of abnormal market returns, along with benchmarks, will be further discussed below, ultimately providing ground for the methodology used to determine the expected and abnormal market performance. Forthcoming Section 6.2.4 provides an overview of the statistical tests used to analyze the robustness of the performance data.

6.2.2.1 Market performance measure

With a long time horizon, market performance across different methodologies varies significantly. Consequently, the analysis of long-term market performance is particularly vulnerable to the model used for identifying abnormal returns (Kothari & Warner, 1997). In the realm of market performance, cumulative abnormal return (CAR) has emerged as the preeminent metric for short-term analyses by aggregating abnormal returns on a daily or monthly basis. However, for long-term event studies, the buy-and-hold abnormal returns (BHAR) method, which accounts for compounding effects, has become a standard value creation metric (Ritter, 1991; Barber & Lyon, 1997; Lyon et al., 1999). BHAR evaluates the average return over multiple years by comparing a strategy of investing in all firms that have undergone an event against an equivalent strategy of investing in otherwise comparable non-event firms.

Numerous articles on long-term event studies have raised concerns regarding aspects of measuring abnormal performance over extended periods. Barber and Lyon (1997), along with Lyon et al. (1999), contend that BHAR is vital because it accurately measures investor experience. However, BHAR represents only a single type of investor experience, namely, the buy-and-hold experience. Other trading strategies, such as the calendar-time portfolio approach (CTIME) or CAR, may capture other investor experiences that are equally relevant. When assessing short event periods, the use of CAR effectively reduces the impact of positive biased test statistics that can result from the arithmetic accumulation of abnormal returns. However, for more extended event periods, the influence of positive bias tends to magnify given the monthly rebalancing, consequently reducing the robustness of the results obtained (Barber & Lyon, 1997). Accordingly, the use of CAR is considered inadequate in determining the returns of investors who hold a stock for an extended period following an event (Fama, 1998).

Nevertheless, Barber and Lyon (1997) and Kothari and Warner (1997) demonstrate that BHAR may also generate biased estimates. Specifically, these biases result from various factors, including the introduction of new listings (i.e. “new listing bias”), rebalance of benchmark portfolios (i.e. “rebalancing bias”), and extreme skewness in multiyear abnormal returns (i.e. “skewness bias”). In a similar vein, Fama (1998) argues that the BHAR approach is flawed given the compounding effects of systematic errors arising from poor benchmarks of expected returns (i.e. the “bad model problem”). However, corrections have been put forward that will be used in this paper to solve these challenges, including a careful selection of benchmark portfolios as well as the use of large sample sizes to mitigate biases in individual firms’ returns (Mitchell & Stafford, 2000). Still, the BHAR approach fails to consider the cross-sectional dependence of abnormal returns for overlapping event firms in calendar time and is therefore susceptible to producing exaggerated test statistics. Consequently, Fama (1998) advocates for the CTIME approach whereby returns are less sensitive to the bad model problem, and all cross-correlations of firm-specific abnormal returns are accounted for in the portfolio variance.

Despite the perceived advantages of the CTIME approach, Lyon et al. (1999) express a preference for BHAR as it captures the investor's actual experience when investing for the long run. The authors also demonstrate that the BHAR approach possesses robustness, whereas alternative long-term methodologies, such as the CTIME method, are deemed miss-specified when applied to non-random samples. Barber and Lyon (1997) have similarly demonstrated that the simple arithmetic addition of returns, employed in calendar-time returns, does not accurately capture the investor's long-term experience. Moreover, CTIME may exhibit a limited ability to detect abnormal performance since it averages over months of high and low event activity. This approach may prove insufficient in detecting significant abnormal performance if abnormal returns are clustered in months with high event activity (Mitchell & Stafford, 2000). Given the prevalence of M&A waves (Yaghoubi et al., 2016), this discovery holds significant importance in the methodological decision. On the aforementioned conceptual grounds, and in line with the majority of recent long-term market performance studies (cf. Kiesel et al., 2017; Dranev et al., 2019; Kolari et al., 2021), this study uses BHAR as a measure of market performance.

6.2.2.2 Determination of expected return

As previously stated, the calculation of abnormal returns via BHAR necessitates pairing firms with an appropriate benchmark, representing the expected return. Various methodologies exist for benchmarking a firm's expected returns, including but not limited to i) reference portfolio returns, such as a market index, ii) mean returns, such as a firm's return pre-acquisition, iii) control portfolio returns, such as a sample of similar firms match based on size and book-to-market ratio, and iv) risk-adjusted returns, such as Fama-French three-factor model (Bowman, 1983; Barber & Lyon, 1997). We refrain from using risk-adjusted returns to determine abnormal returns. This decision is grounded in the potential concerns surrounding the reliability of beta, limiting the research validity (Fama & French, 1996). Meanwhile, the mean returns benchmark was omitted given the variability of systematic risk across different time periods when measuring returns over a longer horizon. Ultimately, drawing from the literature review on M&A, the predominant techniques employed are those of reference- and control portfolio returns.

For this study, a control firm approach was initially adopted, wherein the sampled firms were matched against counterparts within the same industry possessing comparable characteristics such as firm size and market-to-book values. However, owing to the relatively limited size of the Nordic stock market universe, the control firm approach resulted in substantial divergence amongst the characteristics of the matched firms. Consequently, we opt to employ reference portfolio benchmarks in the form of market index returns. Herein, a limitation associated with using country-specific indices pertains to specific markets, including those of Iceland and Norway, which are small and thus exhibit relatively low liquidity and trading volume (Veld & Veld-Merkoulova, 2004).

We therefore employ the *STOXX Nordic Total Market Index (TMI)* – a regional subset of the STOXX Europe TMI, which encompasses around 95% of the free float market capitalization of Europe. The index comprises Nordic companies from a diverse spectrum of industries and sizes, accommodating the notable diversity of companies included in the thesis sample (STOXX, 2022). To further increase the robustness of our findings, we employ the respective industry indices of *NASDAQ OMX Nordic All-Share Index* as reference portfolios for the BHAR. The index consists of all stocks listed on *NASDAQ OMX Stockholm, NASDAQ OMX Copenhagen* and *NASDAQ OMX Helsinki.* The breakdown of the index, forming the 11 industry benchmark portfolios, are as follows: *Technology, Health Care, Food, Beverage & Tobacco, Oil & Gas, Real Estate, Financials, Telecommunications, Consumer Products & Services, Industrials, Basic Materials*, and *Utilities* (Nasdaq, 2022a).

Besides the above mentioned features, the indices were chosen given that they are a selection of a few indices that contains gross return data for the full sample period. While back-testing data preceding the launch date of an index is plausible, there are frequently material differences between back-tested performance and actual results. Meanwhile, the used index type traces the actual total return of the constituent stocks, embodying changes not solely in their prices but also in the dividends disbursed, with the assumption of reinvestment. This is viewed as a more comprehensive metric of market performance compared to a price index, and matches the adjusted closing prices gathered for the acquirers. The benchmark indices are updated in order to capture the ongoing alterations in outstanding shares and listed firms and are rebalanced according to market capitalization (STOXX, 2022; Nasdaq, 2022b).

The index model exhibits certain limitations on account of its simplicity, and these constraints ought to be underscored when interpreting its results. One such shortcoming pertains to its failure to account for potential heterogeneities in firm characteristics that may be unequally distributed between the sample and the index. Consequently, the observed abnormal returns may be attributed to differences in these characteristics rather than the M&A activity. Additionally, using reference portfolios that rely on broad stock market indices introduces new listing and skewness biases, which may significantly impinge upon the reliability and validity of the findings. Still, as mentioned in the previous section, these biases may be mitigated through the paper's large sample (Barber & Lyon, 1997).

A robustness check of empirical findings involves conducting an analysis using an alternative methodological approach (Mitchell & Stafford, 2000). In line with this advice, we conduct robustness tests on the long-term market performance analysis by employing two distinct benchmarks to estimate expected returns. In addition, given that the main focus of the research is to investigate relative performance, and not the absolute performance, between different M&A strategies, the commonly cited limitations of the index model are deemed less critical. Furthermore, time is invested in comprehending and validating the data, which can often be a more effective strategy for augmenting

validity than relying on complex and intricate statistical testing models (Ang & Zhang, 2011).

6.2.2.3 Determination of abnormal return

Following Barber and Lyon (1997), the buy-and-hold return of a firm i over t years post-acquisition is obtained by compounding daily stock returns of the acquirer. For each firm i and its corresponding benchmark b, the post-acquisition buy-and-hold return R_j is calculated as:

$$R_j = \left[\prod_{t=1}^{T} \left(1 + R_{j,t}\right) - 1 \right] \tag{1}$$

where j is the stock return of the firm or the benchmark in the t-th year of the event window and T is the number of years in the given event window. We determine the 1-year, 3-year, and 5-year BHAR for each transaction using a broad market index and 11 industry portfolios as expected return benchmarks:

$$BHAR_i = \prod_{t=1}^{T} \left(1 + R_{i,t}\right) - \prod_{t=1}^{T} \left(1 + R_{b,t}\right) \tag{2}$$

After abnormal returns have been calculated, returns are organized and grouped. This step entails accumulation of each firm's transactions and separating firms into the formulated strategies. Thereafter, the mean buy-and-hold abnormal return for each portfolio p is obtained through an weighted average w_i of the individual transaction returns $BHAR_i$ as follows:

$$\overline{BHAR}_p = \sum_{i=1}^{N} w_i \cdot BHAR_i \tag{3}$$

Several scholars have debated the most suitable approach to weighting, including Brav et al. (2000) advocating for value weighting and Lyon et al. (1999) for equal weighting. Meanwhile, Fama (1998) posits that the decision is contingent on the researcher's discretion. Generally, equally weighted returns exhibit a greater sensitivity towards the performance of small firms, while value-weighted returns tend to capture more of the performance of larger firms. Loughran and Ritter (2000) present empirical evidence indicating that value-weighted returns are insufficient in capturing the full extent of abnormal returns compared to equally-weighted returns. Herein, the authors contend that equal-weighted returns hold greater relevance from an investor perspective. Given that this paper aims

to test the relative performance across distinct M&A strategies independent of firm-specific characteristics – although these will be accounted for in the regression analysis – the study calculates equal-weighted means:

$$w_i = \frac{1}{n_p} \tag{3.1}$$

where n_p is the total number of portfolio firms. Nonetheless, when interpreting the statistical tests, it is imperative to underscore the underlying assumptions associated with equal-weighted returns. Moreover, to increase robustness of the findings, the impact of acquiring firm size will be controlled for in the regression analysis, as further explained in Section 6.3.

6.2.3 Long-term operating performance

The use of accounting measures typically provides a more direct evaluation of a firm's actual performance rather than market perceptions, which may be biased and, at times, fundamentally inaccurate (Martynova & Renneboog, 2008). Moreover, incorporating multiple indicators of value creation can further assist in comprehending the economic impact of the event in question, given that different motives may lead to different relationships between various performance metrics (Tuch & O'Sullivan, 2007). The below sections follow three fundamental decisions researchers must make when conducting an accounting-based performance study (Barber & Lyon, 1996). First, carefully select an appropriate performance measure. Second, identify a suitable benchmark. Finally, choose appropriate statistical tests to analyze the performance data.

6.2.3.1 Operating performance measure

Throughout the M&A literature, measures of operating performance have ranged from various return metrics. (Thanos & Papadakis, 2012). Despite great disparity among scholars on the measurement of operating performance, the most widely used metric is return on assets (ROA) – especially for measurement periods ranging from 2 to 5 years following an acquisition (c.f. Weber, 1996; Ramaswamy, 1997; Porrini, 2004; Zollo & Singh, 2004; Zollo & Meier, 2008;). The prevalent use of ROA stems from its robustness to potential biases (Meeks & Meeks, 1981), which other ratios such as return on equity (ROE) or return on sales (ROS) may suffer from. Nevertheless, an amalgamation of accounting measures is favorable as each metric measures different aspects of M&A performance. While ROA and ROE measures a firm's profitability, the adoption of ROS allows a researcher to assess the firm's efficiency (Thanos & Papadakis, 2012). Following promoters of multiple accounting measures and the overall direction in contemporary M&A literature (e.g., Quah & Young, 2005; Wan

& Yiu; 2009; Cording et al., 2010), ROA, ROE, and ROS are utilized to provide a more integrated view of acquisition performance.

$$ROA_i = \frac{Net\ Income}{Total\ Assets} \tag{4}$$

$$ROE_i = \frac{Net\ Income}{Shareholders'\ Equity} \tag{5}$$

$$ROS_i = \frac{Operating\ income\ (EBIT)}{Net\ Sales} \tag{6}$$

Although ROA and ROE are widely adopted by scholars, operating income as a ratio of total assets and shareholder equity is often argued to provide a more appropriate measure of performance (Petersen et al., 2020). Operating income is a favorable measure over net income as it expresses a firm's performance excluding non-core activities, financing effects, tax considerations, minority interest and special items (Barber & Lyon, 1996; Petersen et al., 2020). Exchanging net income for earnings before interest and taxes (EBIT) in formula 4 and 5 yields the operating ROA (OROA) and operating ROE (OROE). Moreover, in order to preserve the matching principle[7], accounting literature typically uses average total assets and shareholder equity in the denominator for a given year (Jewell & Mankin, 2011). Hence, making the appropriate adjustments to formula 4 and 5 produces the OROA and OROE as expressed below.

$$OROA_i = \frac{Operating\ Income\ (EBIT)}{Avg.Total\ Assets} \tag{4.1}$$

$$OROE_i = \frac{Operating\ Income\ (EBIT)}{Avg.Shareholders'\ Equity} \tag{5.1}$$

6.2.3.2 Determination of expected profitability

Scholars typically compare the profitability of an acquiring firm before the acquisition with the profitability some period after the acquisition. However, this approach has been criticized for ignoring influences from the specific industry in which the acquirer operates (Harrison et al., 1991). As outlined by Barber and Lyon (1996), selecting an appropriate benchmark is central to these types of studies. Accordingly, the criticism outlined by Harrison et al. (1991) can be overcome by adjusting for

[7] The matching principle is a fundamental component of the Generally Accepted Accounting Principles (GAAP), mandating an expense to be reported in the same period in which the corresponding revenue is earned.

the profitability of firms operating in the same industry and geographic region as the acquirer (Zollo & Meier, 2008; Cording et al., 2010). In this connection, the expected profitability is derived from firms operating within the same industry. These firms have been matched with the appropriate GICS code of the acquirer. To determine the abnormal accounting performance, the individual firms underlying the *NASDAQ OMX Nordic All-Share Index* industry portfolios are adopted as a benchmark for expected profitability. This method of adjusting the acquirer's performance against the performance of its industry- and geography peers is consistent with the proposition of Thanos and Papadakis (2012) and the methodology adopted by Zollo and Singh (2004). However, due to the skewness of operating performance among companies in the Nordic industry indices, the median value for the operating performance measures is used. This is in line with Borochin and Cu (2018) and Rao-Nicholson et al. (2016), who argue for the median industry performance to be adopted. The formula below expresses the expected profitability P_b.

$$P_b = \left[\left(\frac{n_b}{2}\right)\right]^{th} \quad when\ n_p\ is\ even \tag{7.1}$$

$$P_b = \left[\frac{\left(\frac{n_b-1}{2}\right) + \left(\frac{n_b+1}{2}\right)}{2}\right]^{th} \quad when\ n_p\ is\ odd \tag{7.2}$$

where n_b represents the total number of firms in a particular benchmark and th the median observation for even and odd sample sizes. P_b is defined as the expected profitability for a particular industry benchmark (b), where $P \equiv ROA,\ ROE,\ ROS,\ OROA,\ OROE$.

6.2.3.3 Determination of abnormal profitability

In line with Zollo and Singh (2004), a firm's abnormal change in operating performance ΔP_i is expressed in equation 8, using a 3-year event window as an example. The same calculations are then made for the remaining event windows ($t=1$ and $t=5$). The benchmark is set to the reported financials from the prior year's annual report. Therefore, some acquisitions may take place late in the year, meaning that their 1-year acquisition performance will effectively be measured over only a couple of months. On the other hand, an acquisition made early in the year will have a full year to integrate and improve a firm's operating performance. However, this is deemed to mainly affect the 1-year measurement period, yet may contribute to some ambiguous interpretations. For this reason, most research investigating operating performance adopts longer event windows, commonly 3 or 5 years, as depicted in Table 3 in the literature review. Nonetheless, assuming that all strategies encircle

equally distributed acquisitions over a particular year, and no strategy has a disproportionate allocation of acquisitions centered around a particular time of the year, it will still allow for a sound and comparable analysis of the different strategies and their abnormal performance in relation to each other.

$$\Delta P_i = \left(P_{i,t+3} - P_{b,t+3}\right) - \left(P_{i,t-1} - P_{b,t-1}\right) \tag{8}$$

After abnormal returns have been calculated, returns are organized and grouped. Similar to the market analysis, this step entails accumulation of each firm's transactions and separating firms into four strategy portfolios. Thereafter, the mean profitability for each portfolio p is obtained through an equally weighted average w_i of the individual transaction returns ΔP_i as follows:

$$\overline{\Delta P}_p = \sum_{i=1}^{N} w_i \cdot \Delta P_i \tag{9}$$

$$w_i = \frac{1}{n_p} \tag{9.1}$$

where n_p is the total number of portfolio firms.

6.2.4 Statistical tests

This section presents the statistical tests used for evaluating the abnormal returns. The event study literature commonly classifies statistical tests into parametric and non-parametric (Corrado & Zivney, 1992; MacKinlay, 1997; Bartholdy et al., 2007; Ahern, 2009). The works of Fama (1976) and Brown and Warner (1985) have demonstrated that daily returns tend to exhibit fat-tailed distributions, thereby violating the normality assumption underpinning parametric tests. Consequently, non-parametric tests have emerged as a robustness check in conjunction with parametric tests, as they do not impose any such distributional assumptions (Campbell et al., 1997; Kothari & Warner, 2007), augmenting the reliability of statistical analyses. In addition, a cross-sectional correlation between abnormal returns and event-induced volatility can pose a challenge for parametric tests, which may not adequately account for such dynamics (MacKinlay, 1997; Kothari & Warner, 2007). To mitigate these issues, introducing non-parametric tests is proposed (Corrado, 1989; MacKinlay, 1997). In accordance with the abnormal operating performance study conducted by Barber and Lyon (1996) and the abnormal market performance study conducted by Barber and Lyon (1997), the statistical tests selected for the analysis are as follows:

t_1: Conventional *t*-test

t_2: Johnson's skewness adjusted *t*-test

z_3: Wilcoxon signed-rank test

The t-values and z-scores are translated into corresponding p-values, which are then reported at 10%, 5%, and 1% significance levels. If the p-value exceeds (falls below) the predetermined significance level, the null hypothesis is accepted (rejected), indicating the absence (presence) of event-related abnormal returns. To enhance the validity of our analysis, we have expanded the dichotomy by including weak and strong forms. Notably, categorizing a hypothesis as accepted or rejected in either weak or strong form is a subjective determination predicated on the statistical significance levels obtained from the different event windows.

6.2.4.1 Parametric test

The first parametric test serves to measure whether the average abnormal performance is significantly different from zero. In order to test the null hypothesis that abnormal BHAR and profitability do not significantly differ from zero, a *conventional t-test* is employed.

$$t_1 = \frac{\overline{AR_\tau}}{\sigma\left(AR_\tau\right) / \sqrt{n}} \tag{10}$$

where $\overline{AR_\tau}$ is the sample mean and $\sigma\left(AR_\tau\right)$ is the cross-sectional sample standard deviation of abnormal market returns or profitability for the sample of n firms (Barber & Lyon, 1997). Nevertheless, it is essential to acknowledge that the measurement of abnormal performance is subject to certain statistical limitations. Notably, individual-firm performance exhibits a strongly positive skewness and lacks a zero mean (Barber & Lyon, 1997). Accordingly, scholars, including Kothari and Warner (1997) and Fama (1998), have reported that the parametric test statistic yields unsatisfactory results for long-term studies. Specifically, the conventional t-test statistic does not effectively account for the risk of positively skewed returns over extended periods, which can result from an overrepresentation of extreme observations. Hence, the resulting statistical analysis may produce excessive significance levels for lower-tailed tests and a reduction in power for upper-tailed tests. Thus, to ensure accurate and robust results, some authors have employed a bootstrap resampling method to incorporate skewness adjustment (cf. Sutton, 1992; Lyon et al., 1999). However, the current paper has opted not to use this technique due to the potential depletion of M&A strategy subsamples. Instead, *Johnson's skewness-adjusted t-test* is used as an alternative method that addresses the skewness-related misspecification error in the conventional t-test (Johnson, 1978).

$$t_2 = \sqrt{n}\left(S + \frac{1}{3}\hat{\gamma}S^2 + \frac{1}{6n}\hat{\gamma}\right) \tag{11}$$

where $\hat{\gamma}$ is a skewness coefficient, estimated as:

$$\hat{\gamma} = \frac{\Sigma_{i=1}^{n}\left(AR_\tau - \overline{AR}_\tau\right)^3}{n\sigma\left(AR_\tau\right)^3} \text{ and } S = \frac{\overline{AR}_\tau}{\sigma\left(AR_\tau\right)} \tag{12}$$

and $\sqrt{n}S$ is the conventional *t*-test of equation (10).

6.2.4.2 Nonparametric test

In an effort to mitigate the limitations associated with parametric tests, namely cross-sectional correlation, event-induced volatility, and non-normality of data, we opt to employ the *Wilcoxon signed-rank test* as a nonparametric alternative. This approach is chosen to augment the overall robustness and generalizability of our research outcomes. The Wilcoxon test, as initially proposed by Wilcoxon (1945), is designed to ascertain the statistical significance of deviations in the mean abnormal returns from zero. The Wilcoxon test is predicated on the assumption that each value in the dataset is unique and distinct from zero. One of the primary benefits of this methodology is its incorporation of both the sign and magnitude of values. The abnormal performance is converted into absolute values and subsequently ranked in descending order.

$$z_3 = \frac{W_s - \frac{n(n+1)}{4}}{\sqrt{\frac{n(n+1)\cdot(2n+1)}{24}}} \tag{13}$$

$$W_s = \sum_{i=1}^{N^{(+)}} rank\left(AR_i\right)^{(+)} \tag{13.1}$$

where W_s is the sum of the ranks for the positive return.

6.3 Multiple regression

Upon establishing the relative performance of different M&A strategies, the regression aims to measure the strength of the relationship between M&A strategy and value creation, as well as its statistical significance. More specifically, whether the event study – highlighting the relationship between M&A strategy and value creation – can be further nuanced through an explanatory regression

analysis. To increase robustness, the outcomes are analyzed via an Ordinary Least Squares (OLS) regression (Wooldridge, 2021). The subsequent section explains the regression's variables, assumptions, and diagnostics.

6.3.1 Regression variables

The regression aims to assess the influence of key independent variables, and control variables, on the thesis dependent variables. The variables, which have been selected based on prior research, are thoroughly discussed in the literature review and hypothesis development. The study will examine all independent- and control variables in relation to both market- and operating performance. The following sections briefly introduce the variables. Table 10 provides an overview together with the respective measurement and regression abbreviation.

Table 10 *Overview of regression variables*

	Variable	Measurement	Regression abbrevation
Depedent variables	BHAR*i*	Industry-adjusted buy-and-hold abnormal return	*BHAR_1*
	BHAR*m*	Market-adjusted Buy-and-hold abnormal return	*BHAR_2*
	ΔAROA	Industry-adjusted abnormal return on assets	*ROA*
	ΔAROE	Industry-adjusted abnormal return on equity	*ROE*
	ΔAROS	Industry-adjusted abnormal return on sales	*ROS*
	ΔAOROA	Industry-adjusted abnormal operating return on assets	*OROA*
	ΔAOROE	Industry-adjusted abnormal operating return on equity	*OROE*
Independent variables	Programmatic	Dummy variable: 1 if programmatic strategy	*PR*
	Large deal	Dummy variable: 1 if large deal strategy	*LD*
	Selective	Dummy variable: 1 if selective strategy	*SL*
	Diminutive	Dummy variable: 1 if diminutive strategy	*DM*
Control variables	Relatedness (i)	Dummy variable: 1 if aquirer-target related acquisition	*RELETEDNESS_1*
	Relatedness (ii)	Dummy variable: 1 if target-target related acquisition	*RELETEDNESS_2*
	Cross-border	Dummy variable: 1 if cross-border acquisition	*CROSS_BORDER*
	Means of payment	Dummy variable: 1 if paid in cash	*CASH*
	Industry context*	Dummy variable: 1 if matching the aquirerer industry	*INDUSTRY*
	Macroeconomic context (i)	Dummy variable: 1 if acquisition was made during downturn	*MACRO_1*
	Macroeconomic context (ii)	Dummy variable: 1 if acquisition was made early intra-wave	*MACRO_2*
	Macroeconomic context (iii)	Dummy variable: 1 if acquisition was made late intra-wave	*MACRO_3*
	Macroeconomic context (iv)	Dummy variable: 1 if acquisition was made pre-GFC	*MACRO_4*
	Acquirer size	Natural logarithm of the enterprise value of the aquiring firm	*SIZE*
	Acquirer valuation	Book-to-market value of the aquiring firm	*VALUATION*

** 11 unique dummy variables representing each industry.*
Source: Own contribution

The equation for the regression is specified below where $\widehat{D_i}$ represents the dependent performance variable in each regression[8]. The parameter β represents the slope of an individual explanatory variable in the regression model. When the estimated coefficient of β is positive (negative), a positive (negative) relationship is indicated between the explanatory variable and the dependent variable.

[8] Regression functions are available in Appendix C.4

$$\widehat{D_i} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 DM_i$$
$$+ \beta_5 RELATEDNESS\_1_i + \beta_6 RELATEDNESS\_2_i + \beta_7 CROSS\_BORDER_i$$
$$+ \beta_8 CASH_i + \beta_{9-19} INDUSTRY_i + \beta_{20} MACRO\_1_i + \beta_{21} MACRO\_2_i$$
$$+ \beta_{22} MACRO\_3_i + \beta_{23} MACRO\_4_i + \beta_{24} SIZE_i + \beta_{25} VALUATION_i + \epsilon$$

6.3.1.1 Dependent variables

The dependent variables of the study pertains to the value creation of acquirers. To measure value creation, we utilize market- and industry-adjusted stock market returns alongside industry-adjusted profitability. The research centers on the effects of an entire acquisition program rather than individual acquisitions. Thus, we examine accumulated returns over extended periods instead of analyzing returns surrounding a single acquisition. Calculation of the dependent performance variables are found in Section 6.2.2.3 and 6.2.3.3, respectively.

6.3.1.2 Independent variables

The study is geared towards achieving its central objective of investigating the relationship between M&A strategy and value creation. Specifically, the research question under consideration centers around the effect of M&A strategy on long-term value creation. As follows, the thesis's M&A strategies are broken down into four independent variables representing a programmatic, large deal, selective, and diminutive strategy. Accordingly, we are able to test the significance of each strategy on the performance outcome through a multiple regression encompassing the total sample, whereby each strategy represents an independent dummy variable. For a detailed exposition on the classification of each firm's strategy, we refer to Part II, which provides a thorough overview of the thesis' conceptual framework.

6.3.1.3 Control variables

Research on value creation suggests that certain well-documented value drivers significantly influence post-acquisition performance (cf. Singh & Montgomery, 1987; Dewenter, 1995; DeLong, 2003; Martynova & Renneboog, 2008; Vinogradova, 2021). If these variables can explain the variation in the dependent variables, albeit are omitted from the regression, the study may suffer from an omitted-variables bias (Wooldridge, 2021). To this end, the study has developed a set of key control variables designed to examine the extent to which macro-, deal-, and firm-specific factors can account for the relative abnormal performance in the dependent variables. The primary control variables employed in the study are based on prior literature on relatedness, cross-border transactions, means of payment, industry context, macroeconomic context, and acquirer financial characteristics. Most variables are constructed based on the traditional measures used in acquisition research. However, it is

worth noting that two variables, namely target-target relatedness and intra-wave macroeconomic context, to the best of the authors' knowledge, have not been used in prior literature.

Relatedness is represented by two binary dummy variables, determined by matching the sector of the (i) acquirer and (ii) prior target to the focal target based on Mergermarket's 33 industry categorizations. A cross-border dummy variable is introduced to account for the effect of cross-border versus domestic deals. Furthermore, the means of payment are considered by examining whether a deal is financed with cash, equity, or a combination of both. Meanwhile, an industry variable is included to account for industry effects, whereby the sample is divided into 11 groups based on the acquirer's GICS code. The study introduces four dummy variables to account for macroeconomic context. The first evaluates boom and downturn, while the second and third considers intra-wave differences in acquisition performance through a variable representing early- and late-stage acquisitions. Early-stage acquisitions refer to a period spanning 3 years into the boom market following a recovery, while late-stage acquisitions encompass 3 years preceding an economic downturn. The fourth variable assesses performance differences pre- and post GFC.

Besides the aforementioned value drivers, scholars suggest that additional firm-specific variables significantly influence performance. Following the theoretical underpinnings of the Fama-French three-factor model (Fama & French, 1993), we include two additional control variables: size and book-to-market value. Size is measured as the acquirer's enterprise value at the time of the acquisition. Meanwhile, book-to-market value is measured by taking the book value (i.e., total assets minus total liabilities) and dividing it by the acquirer's market value at the time of acquisition.

6.3.2 Regression diagnostics

Obtaining a true regression function requires the use of an entire population. However, in practice, researchers often use a sample of the population, leading to an approximation of the real function. The OLS method is used to minimize the approximation error. However, to ensure the validity of the regression model, it is imperative to satisfy a set of assumptions commonly referred to as Gauss-Markov assumptions (Wooldridge, 2015). Upon the regression diagnostic, it is apparent that all five assumptions hold to an acceptable degree across most regressions, except the homoscedasticity assumption as indicated by the Breusch-Pagan test (1979) in Appendix B.2. Therefore, White's (1980) heteroskedastic robust standard error is adopted in the regression analysis to improve accuracy and interpretation. It is critical to bear in mind that potential bias in the regression outcomes must be acknowledged and factored into both the analysis and ensuing conclusions. For convenience, we summarize the assumptions below, whereas a comprehensive assessment of the assumptions is found in Appendix B.

6.3.2.1 Linearity

The first assumption requires that the relationship between the dependent variable and the explanatory variables is linear. In other words, the coefficients on the explanatory variables are constant across all values of the explanatory variables. Nonlinear relationships may result in biased and inconsistent estimates.

6.3.2.2 Homoscedasticity

The second assumption requires that the error term has constant variance. This means that the variance of the error term is the same across all values of the independent variables. If the variance of the error term is not constant, then the OLS estimator may be biased and inefficient.

6.3.2.3 Autocorrelation

The third assumption requires that the error term is uncorrelated with the explanatory variables. This means that there is no relationship between the error term and any of the explanatory variables. Violations of this assumption can result in biased and inconsistent estimates, particularly in time series analysis.

6.3.2.4 Normality

The fourth assumption requires that the error term is normally distributed with a mean of zero and a constant variance. This means that the distribution of the error term is a normal distribution with a mean of zero and a constant variance. If the error term is not normally distributed, then the OLS estimator may not be efficient, although it may still be unbiased.

6.3.2.5 No multicollinearity

The fifth assumption requires that the explanatory variables are not perfectly collinear. This means that there is no perfect linear relationship between any two explanatory variables. If there is perfect collinearity, then the OLS estimator cannot be calculated, as the inverse of the covariance matrix does not exist.

6.4 Research quality

Although natural causes govern the external world, human biases and limitations in sensory perception render the underlying truth unattainable and imperceptible (Guba, 1990). Given the likelihood of an insurmountable challenge in determining the objective truth related to the research question, the adopted research design is aimed at augmenting the validity and reliability of the paper's findings, thus providing a closer approximation to the underlying truth. As outlined by Roberts and Priest (2006: 41) "*If research is to be helpful, it should avoid misleading those who use it*". While all research must have truth value, applicability, consistency, and neutrality, the quantitative and

qualitative paradigm differs in the nature of knowledge (Guba & Lincoln, 1981). As noted by Guba and Lincoln (1981), the criteria to reach the goals of rigor in the quantitative paradigm are internal- and external validity, reliability, and objectivity.

6.4.1 Validity

Internal validity refers to an isomorphism between the phenomena represented by the data and the explanatory power of the variables in the study. External validity, or generalizability, refers to the extent in which the collected sample is representative of the population (Guba & Lincoln, 1982). Triangulation is a method of ensuring validity in the research, whereby different methods, perspectives and theories are marked against each other to cross-check data and interpretation of the results (Denzin, 2017). By employing a dual method of measuring performance, the authors are able to assess the complementarity of results between market- and operating performance. Moreover, filtration of the output from databases has been limited and only done to ensure measurability. Despite this, a large number of acquirers have been omitted from the study based on the sample selection, clearly impeding the generalizability of our findings (Saunders et al., 2015).

6.4.2 Reliability

Studies with a high degree of reliability entail uniformity of findings when replicated by other researchers (Saunders et al., 2009). To ensure reliability, it is the authors responsibility to defend against potential errors or biases. To alleviate the study from potential reliability issues, the authors have clearly documented the procedures taken to arrive at the final data set as suggested by Yin (2009). While the thesis adopts measures to improve methodology, a common theme among researchers is that calculating long-term abnormal performance remains a complex task, with many pitfalls and sources of bias that must be carefully considered. As such, it is essential to remain aware of these issues and carefully evaluate the methodology against prior research to ensure accurate and robust results. Given the objective of reliability, the methodology employed must facilitate reliable statistical inferences. The use of secondary quantitative data, adjusted with clearly stated filters to ensure measurability, reduces the subjectiveness of the study and outlines the prerequisites for replication by other researchers. The databases employed in this thesis are reputable and widely used in academia and practice.

6.4.3 Objectivity

Scriven (1972) outlines the concept of objectivity as the quantitative notion of intersubjectivity – an alignment among scholars between the perception of research results and methodology. What is important is not necessarily that there be quantitative agreement, but that there is qualitative confirmability. Objectivity therefore entails that the responsibility is removed from the researcher and borne by the data, hence removing the need for researcher certifiability in exchange for data

confirmability (Guba & Lincoln, 1982). Such reasoning is likewise in conformity with the thesis's philosophical perspective of positivism (Saunders et al., 2015). An important step to ensure objectivity is that the data sample is traceable through all steps of filtration back to the original data set. Not only does this enable replication of the study, but it also aids readers in making judgements about the quality of the research. Accordingly, a detailed map of the selections made to obtain the final sample is presented in Table 5. Underlying epistemological assumptions, reasons for the study formulation, biases or prejudices need to be reflected on to convey confirmability. Ongoing reflective comments promote objectivity in this paper, combined with being two authors, which reduces the potential influences from biases.

6.5 Further critical reflections of methodology

While critical reflections related to methodological decisions have been underscored throughout the preceding sections, the present section aims to provide the reader with a few additional perspectives. The objective is to furnish both the reader and prospective researchers with insights into potential challenges and areas that require additional vigilance when examining the results. Long-horizon studies entail a multitude of interrelated considerations that either do not arise or carry less significance with short horizons (Kothari & Warner, 1997). To accurately gauge the outcomes of M&A, one must monitor post-acquisition performance and juxtapose it with expected performance. However, differentiating the impact of the acquisition from the numerous other factors that influence acquirers' performance poses a challenge. Consequently, studies that employ market- and accounting data to evaluate post-acquisition performance naturally exhibit a lack of consistency (Grant, 2018). In this connection, Fama (1998) contends that the majority of anomalies in long-term returns tend to disappear with reasonable methodological modifications. With such reasoning, it is important to understand the impact of the assumed model on abnormal and expected returns. Herein, the thesis's adoption of a long-term event study as a methodological approach precludes the isolation of M&A transactions from other idiosyncratic and systematic events that can influence a firm's stock price and profitability. Still, the chosen methodology is deemed to be appropriately aligned with the thesis' objective and scope. The research also examines a variety of performance metrics and employs diverse benchmarks in order to avoid systematic biases and misspecifications.

Nevertheless, the long-term event study inherently exhibits a deficiency in accounting for the cross-sectional dependence of abnormal returns for overlapping events. This is foremost impacting firms with a high-frequency pattern or with acquisitions clustered around a specific time period. While the authors could choose to omit overlapping events, the decision to keep all events is deemed appropriate given the aim of studying M&A performance on a program-level rather than transaction-level. Nonetheless, the shortcoming renders the chosen performance measures vulnerable to generating overstated test statistics for parts of the sample. Further critique could be held against

the fact that the selected benchmarks are bound to encompass a subset of firms included in the final sample. This results in benchmark contamination, as the indices have not been modified to exclude the firms within the sample (Loughran & Ritter, 2000). Consequently, the correlation between the benchmark and the sample is anticipated to be greater than if adjusted, potentially enhancing the paper's explanatory power and introducing bias. To alleviate the problem of benchmark contamination, it would have been preferable to reconstruct the indices and exclude firms that are also present in the sample. However, such action may not be infallible, as it could be plagued by inaccuracies and a significant allocation of resources.

While a positivist philosophy is deemed appropriate for the current study, it is not immune to criticism. A prominent critique leveled against positivism is that utilizing a natural science approach to investigate social phenomena is deemed inadequate. In light of the intricate and behaviorally driven nature of topics examined by social science, it is argued to be ill-suited to exclusively rely on knowledge derived from "experiments" to arrive at conclusions (Veal, 2011). Another critique emanates from the incapacity of a researcher to entirely detach themselves from the topic of their research (Cohen et al., 2017). According to interpretive philosophical perspectives, science is subjective. Hence regardless of the researcher's physical separation from the object of their inquiry, their interpretation of the results will inevitably impact their conclusions (Saunders et al., 2015). Notwithstanding the arguments above, the authors consider positivism to be the most appropriate philosophical stance and pledge to uphold objectivity while presenting and analyzing the findings.

PART V

RESULTS & ANALYSIS

7. RESULTS & ANALYSIS

The study encompasses two analyses of value creation in M&A – a long-term market performance analysis and a long-term operating performance analysis. Sections 7.1 and 7.2 focuses on the event study and its significance through three statistical tests, facilitating the validity and reliability of the results. Section 7.3 subsequently presents an explanatory regression to further establish the robustness of the findings and provide more details on the underlying value drivers. The analytical approach employed entails an examination of both the total sample and subgroups that correspond to the four M&A strategies examined in the thesis, thereby providing greater insight into their relative performance. Each of the thesis' hypotheses is tested by evaluating three different event windows. The statistical significance and implications of the results will be examined and discussed in conjunction with prior literature presented in Part III, enabling a meaningful synthesis of theory and empirics. To offer more precise and robust conclusions, the stated hypotheses are stratified into two classifications, namely, strongly or weakly accepted (rejected), depending on the degree of statistical significance. A systematic approach is adopted for each sub-section, commencing with a presentation and analysis of the results, arranged in the order of the hypotheses outlined in Section 4, followed by a sub-conclusion related to the hypothesis of interest. To conclude the analysis, a summarizing table of the findings is presented in Section 7.4.

The methodology for assessing market performance is based on an event study approach with market-adjusted buy-and-hold abnormal return ($BHAR_m$) and industry-adjusted buy-and-hold abnormal return ($BHAR_i$) as performance metrics. The evaluation of market performance relies on stock returns, which are widely regarded as forward-looking, as they encapsulate the future expectations of investors. Nevertheless, such returns may be impacted by irrational investor sentiment and other behavioral biases. In contrast, accounting-based metrics are retrospective and offer concrete assessments of actualized performance. The use of operating performance measures provides a means to determine whether the abnormal stock returns are attributable to alterations in fundamental aspects of the firms. The paper evaluates operating performance through an event study of the industry-adjusted change in five distinct return measures – return on assets (ΔAROA), return on equity (ΔAROE), return on sales (ΔAROS), operating return on assets (ΔAOROA), and operating return on equity (ΔAOROE). Accordingly, the reported operating returns illustrate the change over the event window, adjusted for the change in a related industry benchmark. For more information on the respective return calculations, we refer to Section 6.2.2 and 6.2.3. Meanwhile, information on the statistical tests is found in Section 6.2.4.

7.1 Value creation in M&A

Section 7.1 concentrates on the Hypothesis 1 and examines whether M&A creates long-term value by assessing the event study on the entire sample of 2,328 Nordic acquisitions, irrespective of firm- or

deal characteristics. The data processing and return calculations were carried out in Excel, whereas statistical tests were performed in STATA.

7.1.1 Market performance

Studying Table 11, comprising the event study for the total sample, we spot a distinct difference in the market returns of the two benchmarks. Commencing with $BHAR_m$, the sample illustrates a positive abnormal return, increasing over each event window. The average $BHAR_m$ is highly[9] significant for both the conventional- and skewness adjusted t-test (T_1 and T_2), whereas the nonparametric Wilcoxon signed-rank test (T_3) indicates insignificant results. Contrary, the industry-adjusted $BHAR_i$ illustrates a negative trend, with returns decreasing over the event period, eventually leading to a negative return in the 5-year event window. For $BHAR_i$, the 1-year and 5-year returns are highly significant across all statistical tests, whereas 3-year $BHAR_i$ fails to display significance on any level in the parametric tests (T_1 and T_2). Despite the overall positive average returns, both $BHAR_m$ and $BHAR_i$ display negative median returns, where the percentage of positive returns decreases for each extended event window. In a similar vein, the standard deviation appears to increase the longer time passes post-acquisition, implying more broadly scattered individual returns, which may be expected given how various factors outside of the specific transaction are given time to influence the acquirer's stock market performance. In this context, the lower level of significance in $BHAR_i$ compared to $BHAR_m$ could be caused by a high dispersion in the industry benchmarks, ultimately causing more broadly scattered abnormal returns.

The fact that less than half of the returns are positive across the performance measures contradicts the neoclassical theory, which states that firms only engage in M&A activity if it creates shareholder value, given that that management operates under complete rationality (Capron, 1999; Ahern & Weston, 2007). Instead, the results for the total sample may be explained by behavioral theories such as empire building, cognitive biases, and agency issues (Jensen, 1986; Seth et al., 2000; Hope & Thomas, 2008). Moreover, according to the tenets of financial theory, stock prices embody all pertinent information concerning a firm's prospects. In light of the consistent departure from a zero abnormal return observed, it is evident that the outcomes contravene the principles of the efficient market hypothesis (Fama, 1991), thereby alluding that the market exhibits inefficiency.

As discussed in prior sections, the findings on long-term M&A performance have been varied and, at times, contradictory. Nonetheless, when breaking down returns across the three event windows, the results of our Nordic sample stand out. In the 1-year event window, the positive average BHAR is consistent with Kiesel et al. (2017), who also use an index model to calculate expected returns. However, the positive 1-year BHAR differs from the results of multiple other studies, including Croci (2007), Dranev et al. (2019), and Kolari et al. (2021). Still, neither of these studies uses the same methodology when calculating expected returns and employs either a global or US

[9] Refers to a 1% level of significance.

sample, ultimately affecting the performance outcome. By looking at 3-year BHAR, the results are again consistent with those of Kiesel et al. (2017). Meanwhile, Gregory and McCorriston (2005), Conn et al. (2005), Ang and Cheng (2006), Croci (2007), Dutta and Jog (2009), Kolari et al. (2021), who use different expected return measures, all find significant negative BHAR. In addition, Kolari et al. (2021), Gregory and McCorriston (2005), and Cosh and Guest (2001) study BHAR over a 5-year event window and report a significant negative return for their sample, contrary to our market-adjusted results, albeit consistent with the industry-adjusted findings. Similarly, Loughran and Vijh (1997) find both positive and negative 5-year average returns in their study. Finally, it is worth noting that while the studies above use BHAR to calculate returns, the expected return calculation differs, which may contribute to the discrepancy together with other factors, including geography, sample period, and data collection biases.

Table 11 *Event study market performance for the total sample*

	Mean	Median	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
$BHAR_m$ [0;1]	6,70%	-2,23%	-109,56%	1087,46%	47,04%	0,60	6,25	83,18	2181	5.17 ***	5.49 ***	-0.15
$BHAR_m$ [0;3]	21,64%	-2,65%	-152,53%	2469,69%	48,68%	1,44	6,78	79,08	1744	6.26 ***	6.47 ***	0,73
$BHAR_m$ [0;5]	30,70%	-11,96%	-253,56%	3959,30%	45,65%	2,12	7,40	101,35	1472	5.56 ***	5.69 ***	0,04
$BHAR_i$ [0;1]	3,66%	-4,14%	-187,47%	1109,00%	44,70%	0,63	5,92	79,07	2181	2.74 ***	2.83 ***	-3.28 ***
$BHAR_i$ [0;3]	0,14%	-23,87%	-432,67%	2423,86%	38,88%	1,50	5,84	64,63	1744	0,04	0,04	-8.06 ***
$BHAR_i$ [0;5]	-21,00%	-53,43%	-717,69%	3950,64%	35,26%	2,27	6,07	78,92	1472	-3.55 ***	-3.50 ***	-11.03 ***

*Table 11 presents six market performance measures for the total sample over three different event windows and two different benchmarks for abnormal returns. The statistical tests run on each mean abnormal return measure are Conventional t-test (T_1), Johnson's skewness adjusted t-test (T_2), and Wilcoxon signed-rank test (T_3). Significance level: * = 10%, ** = 5%, *** = 1%.*

7.1.2 Operating performance

When studying Table 12, a majority of the average operating performance is negative across the total sample. Beginning with ΔAROA the performance is not only negative but is also declining across the event period. These results are highly significant when looking at both the parametric and nonparametric statistical tests, establishing the robustness of the findings. Herein, it is worth noting that the median return is less negative, indicating that there could be a few substantially negative returns that draw down the average, which is confirmed when analyzing the minimum values. Moving to ΔAROE we find similar negative patterns, although the returns are notably worse in the 3-year event window. The ΔAROE is highly significant across all statistical tests when looking at 3- and 5-year event windows. Meanwhile, the 1-year results are significant for the nonparametric Wilcoxon signed-rank test (T_3), whereas both parametric tests (T_1 and T_2) indicate insignificant results, likely explained by non-normality within the 1-year data. Similar to ΔAROA, the median ΔAROE is less negative compared to the average, which again could be attributed to broadly scattered individual returns.

Interestingly, ΔAROS is the only accounting measure displaying positive returns for the total sample. Although the 1-year ΔAROS is negative, the 3- and 5-year returns are both positive. While this pattern may be associated with extreme negative 1-year individual returns, it could also be

explained by a tendency for firms to realize operational efficiency (i.e., ROS) over time, whereas other profitability metrics never truly catch up. The results may thereby indicate that M&A is primarily driven by efficiency motives. Yet, the average ΔAROS is only significant on the nonparametric Wilcoxon signed-rank test (T_3). Within the other operating income-based metrics, the total sample illustrates positive 1-year ΔAOROA, while the other five measures display negative performance. The 3- and 5-year ΔAOROA is significant on a 1% level across all statistical tests, whereas the 1-year ΔAOROE alongside 1-, 3-, and 5-year ΔAOROA fail to deliver significant results in the parametric test (T_2 and T_3), albeit indicate significant results on a 1% level for the nonparametric test (T_3), which controls for non-normality in the data. The positive 1-year ΔAOROA could be attributed to expenses from transaction-related unusual items, financing effects, and tax considerations not included in operating income. Moreover, post-acquisition expenses incurred for reorganizing internal processes and information streams are commonly classified as non-operational and non-recurring items in the income statement. Such reasoning is mirrored in the results, where the operating income return measures (i.e., ΔAROS, ΔAOROA, and ΔAOROE) show relatively better performance compared to the net income measures (i.e., ΔAROA and ΔAROE).

The operating performance results for the total sample are comparable to several empirical studies. Zollo and Singh (2004) find a negative 3-year ROA adjusted for industry effects. Thanos and Papadakis (2012) uncover similar results, albeit for a 2-year event window. In early research, Mueller's (1980) study discovers significantly negative ROA and ROE for a 3-year and 5-year event window. Mueller's (1980) negative results for ROA are subsequently supported by Dickerson et al. (1997). Nevertheless, the findings in this paper contradict the results of Gugler et al. (2003) and Bild et al. (2010), whereby the scholars find significantly positive 5-year ROA and 3-year ROE, respectively. Herein, it is worth noting that Bild et al. (2010) use a different benchmarking method. Ryden and Edberg's (1979) study on a Swedish sample reveals insignificant and mixed operating performance results over a 3-year event window. Although their study solely contains 25 transactions, the results mirror ours, given how ΔAROS differs from the other performance measures. Additional research employing an operating measure finds a significant positive 5-year return (Healy et al., 1992), as opposed to our results for ΔAOROA and ΔAOROE. Nonetheless, Healy et al. (1992) use a cash flow metric and are hence less comparable. On the other hand, the results in Meeks (1977) are analogous to ours wherein the authors, adjusted for industry effects, report an insignificant negative 3-year OROA and a significant negative 5-year OROA. Interestingly, these results are confirmed by Ravenscraft and Scherer (1987), who report a significantly negative 3-year OROA adjusted for industry effects. Similar to the market performance analysis, it is worth noting that although the above studies employ comparable performance measures, the method for determining the expected return varies, which may give rise to disparities, together with other factors such as geography and sample collection.

Table 12 *Event study operating performance for the total sample*

	Mean	Median	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
ΔAROA [0;1]	-1.54%	-0.36%	-284%	54%	44%	0.17	-13.60	83.18	1 418	-3.50 ***	-2.82 ***	-5.41 ***
ΔAROA [0;3]	-3.09%	-0.90%	-333%	55%	39%	0.20	-11.73	166.97	1 128	-5.11 ***	-3.81 ***	-9.28 ***
ΔAROA [0;5]	-3.12%	-0.92%	-323%	68%	39%	0.22	-10.99	144.60	968	-4.44 ***	-3.45 ***	-7.12 ***
ΔAROE [0;1]	-3.11%	-0.50%	-2031%	2028%	45%	1.09	-3.85	314.22	1 891	-1.24	-1.22	-4.39 ***
ΔAROE [0;3]	-4.20%	-2.33%	-705%	235%	39%	0.34	-10.78	226.56	1 482	-4.71 ***	-4.14 ***	-10.06 ***
ΔAROE [0;5]	-3.54%	-2.65%	-698%	793%	34%	0.38	2.77	252.93	1 276	-3.37 ***	-3.07 ***	-8.74 ***
ΔAROS [0;1]	-3.35%	-0.25%	-43716%	28212%	46%	12.96	-11.57	771.55	2 123	-0.12	-0.12	-2.16 **
ΔAROS [0;3]	23.63%	-0.63%	-3042%	22883%	44%	6.29	31.24	1 081.08	1 682	1.54	1.54	-5.14 ***
ΔAROS [0;5]	26.73%	-0.93%	-2851%	22892%	42%	6.79	29.02	929.37	1 443	1.50	1.50	-5.19 ***
ΔAOROA [0;1]	0.04%	-0.36%	-236%	147%	43%	0.12	0.13	107.63	2 210	0.17	0.21	-4.49 ***
ΔAOROA [0;3]	-1.14%	-0.82%	-230%	149%	42%	0.13	-1.01	90.94	1 766	-3.70 ***	-2.83 ***	-8.31 ***
ΔAOROA [0;5]	-1.53%	-1.00%	-166%	147%	40%	0.14	0.62	47.92	1 528	-4.37 ***	-3.15 ***	-8.70 ***
ΔAOROE [0;1]	-1.43%	-0.54%	-2072%	1454%	46%	0.84	-11.03	387.21	2 210	-0.80	-0.79	-3.82 ***
ΔAOROE [0;3]	-0.49%	-2.50%	-1850%	2940%	43%	0.90	15.32	743.66	1 766	-0.23	-0.22	-7.32 ***
ΔAOROE [0;5]	-2.99%	-2.74%	-1854%	1108%	41%	0.70	-9.87	397.21	1 528	-1.68 *	-1.64	-7.43 ***

*Table 12 presents five operating performance measures for the total sample over three different event windows. The statistical tests run on each mean abnormal return measure are Conventional t-test (T_1), Johnson's skewness adjusted t-test (T_2), and Wilcoxon signed-rank test (T_3). Significance level: * = 10%, ** = 5%, *** = 1%.*

7.1.3 Sub-conclusion

The average BHAR is significantly positive in five of the six measures, with 5-year $BHAR_i$ being the only negative one. Accordingly, the results indicate that an investor who buys and holds a portfolio of Nordic acquirers generally experiences long-term abnormal market returns following the announcement of an acquisition. Furthermore, the returns are significant on a 1% level in 13 of 18 statistical tests. Based on the findings presented above, the authors strongly reject Hypothesis 1a that *M&A creates no long-term abnormal acquirer market returns*. Instead, it is concluded that M&A creates positive long-term abnormal acquirer market returns.

On a broad level, the results indicate that firms engaging in M&A in the Nordics realize a decrease in operating performance when adjusting for industry effects. The total sample underperforms in 12 of 15 accounting measures. The returns are significant in 30 of 45 tests – 28 on a 1% level, and one on a 5% and 10% level, respectively. Accordingly, the identified positive long-term abnormal stock returns do not seem to be explained by operational improvements as expected by neoclassical theory but rather by cognitive biases in line with behavioral theory. Given the above findings, we strongly reject Hypothesis 1b that *M&A creates no long-term abnormal acquirer profitability*. Rather, it is concluded that M&A decreases long-term abnormal acquirer profitability.

7.2 M&A strategy

Having established the results of long-term value creation from M&A in the Nordics, the following section dives deeper into the relative performance of distinct strategies based on the conceptual framework outlined in Part II. More specifically, this section is broken down by M&A strategy, with each subsection following the analytical structure of Section 7.1. However, herein the focus is on Hypothesis 2 to 5, which examines relative performance and how strategic patterns affect the long-term value created post-acquisition. A comprehensive summary of the market- and operating

performance results of the strategies are presented in Table 13 and 14.1-14.2, respectively. Appendix A.1-A.3 provides a graphical presentation of the event study results for each strategy. Again, the data processing and return calculations were carried out in Excel, whereas statistical tests were performed in STATA.

Table 13 *Abnormal and relative market performance in the event period for different M&A strategies*

Panel A: Programmatic												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
BHAR*m* [0;1]	9.08% (*2.38%*)	-2.45% (*-0.22%*)	-110%	1087%	45%	0.70	8.70	111.69	874	3.85 ***	4.10 ***	0.21
BHAR*m* [0;3]	27.01% (*5.37%*)	0.99% (*3.64%*)	-149%	2470%	51%	1.55	8.19	104.70	759	4.80 ***	4.99 ***	1.99 **
BHAR*m* [0;5]	34.33% (*3.63%*)	-0.91% (*11.04%*)	-180%	2310%	49%	1.84	6.07	60.16	662	4.80 ***	4.97 ***	2.32 **
BHAR*i* [0;1]	4.53% (*0.86%*)	-4.73% (*-0.59%*)	-161%	1109%	42%	0.72	8.36	107.59	874	1.86 *	1.92 *	-3.24 ***
BHAR*i* [0;3]	3.42% (*3.28%*)	-22.53% (*1.34%*)	-433%	2424%	38%	1.62	7.07	84.83	759	0.58	0.59	-5.47 ***
BHAR*i* [0;5]	-20.03% (*0.96%*)	-47.96% (*5.47%*)	-718%	2287%	36%	2.04	4.64	42.19	662	-2.53 **	-2.49 **	-6.91 ***
Panel B: Large deal												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
BHAR*m* [0;1]	4.42% (*-2.27%*)	-6.89% (*-4.65%*)	-104%	328%	44%	0.60	1.72	4.86	206	1.07	1.13	-1.28
BHAR*m* [0;3]	41.28% (*19.64%*)	-8.46% (*-5.81%*)	-146%	1342%	45%	1.96	4.27	24.15	148	2.56 **	2.66 ***	0.36
BHAR*m* [0;5]	66.21% (*35.51%*)	-25.71% (*-13.75%*)	-209%	3959%	39%	4.29	6.81	57.10	125	1.73 *	1.75 *	-0.48
BHAR*i* [0;1]	2.95% (*-0.71%*)	-7.66% (*-3.52%*)	-128%	327%	44%	0.60	1.48	4.42	206	0.71	0.74	-1.18
BHAR*i* [0;3]	15.01% (*14.86%*)	-26.18% (*-2.31%*)	-206%	1302%	39%	1.96	3.81	20.18	148	0.93	0.95	-1.96 **
BHAR*i* [0;5]	6.32% (*27.31%*)	-78.9% (*-25.47%*)	-318%	3951%	30%	4.25	6.99	61.12	125	0.17	0.17	-3.99 ***
Panel C: Selective												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
BHAR*m* [0;1]	7.03% (*0.33%*)	-2.45% (*-0.22%*)	-89%	439%	51%	0.52	2.61	14.02	968	4.24 ***	4.62 ***	1.21
BHAR*m* [0;3]	17.05% (*-4.59%*)	-1.94% (*0.71%*)	-144%	1503%	49%	1.24	5.19	47.73	746	3.75 ***	3.90 ***	0.254
BHAR*m* [0;5]	26.21% (*-4.50%*)	-13.72% (*-1.76%*)	-254%	1396%	45%	1.77	3.15	15.68	619	3.68 ***	3.79 ***	-0.29
BHAR*i* [0;1]	4.75% (*1.09%*)	-1.22% (*2.92%*)	-187%	441%	48%	0.54	2.28	11.65	968	2.74 ***	2.90 ***	-0.275
BHAR*i* [0;3]	-2.35% (*-2.49%*)	-21.63% (*2.24%*)	-264%	1473%	41%	1.30	4.26	37.05	746	0.49	-0.49	-4.64 ***
BHAR*i* [0;5]	-21.86% (*-0.87%*)	-51.35% (*2.08%*)	-417%	1368%	37%	1.98	2.37	10.93	619	-2.75 ***	-2.69 ***	-6.68 ***
Panel D: Diminutive												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
BHAR*m* [0;1]	-7.81% (*-14.51%*)	-14.13% (*-11.9%*)	-99%	198%	38%	0.55	0.99	1.56	133	-1.62	-1.46	-2.52 **
BHAR*m* [0;3]	-17.49% (*-39.12%*)	-39.71% (*-37.06%*)	-153%	442%	34%	0.94	1.74	5.23	91	-1.77 *	-1.63	-2.76 ***
BHAR*m* [0;5]	-30.73% (*-61.44%*)	-59.87% (*-47.91%*)	-227%	344%	29%	1.30	1.25	1.73	66	-1.92 *	-1.79 *	-2.85 ***
BHAR*i* [0;1]	-8.8% (*-12.47%*)	-15.53% (*-11.39%*)	-122%	209%	38%	0.57	1.05	2.06	133	-1.77 *	-1.59	-2.78 ***
BHAR*i* [0;3]	-30.96% (*-31.11%*)	-45.43% (*-21.56%*)	-226%	461%	30%	1.00	1.57	5.31	91	-2.94 ***	-2.63 **	-3.57 ***
BHAR*i* [0;5]	-74.26% (*-53.26%*)	-87.26% (*-33.83%*)	-457%	331%	27%	1.53	0.46	0.66	66	-3.93 ***	-3.51 ***	-3.79 ***

*Table 13 presents market performance for each M&A strategy over three different event windows and two different abnormal returns. The statistical tests run on each mean abnormal return measure are Conventional t-test (T_1), Johnson's skewness adjusted t-test (T_2), and Wilcoxon signed-rank test (T_3). Significance level: * = 10%, ** = 5%, *** = 1%.*

Table 14.1 *Abnormal and relative operating performance in the event period for different M&A strategies*

Panel A: Programmatic												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
ΔAROA [0;1]	-2.27% (*-0.73%*)	-0.38% (*-0.02%*)	-284%	23%	44%	0.22	-11.44	140.98	716	-2.76 ***	-2.30 **	-4.20 ***
ΔAROA [0;3]	-3.65% (*-0.55%*)	-0.96% (*-0.07%*)	-333%	34%	37%	0.26	-10.28	115.11	620	-3.52 ***	-2.85 ***	-7.02 ***
ΔAROA [0;5]	-3.85% (*-0.73%*)	-0.92% (*0.00%*)	-323%	26%	38%	0.27	-9.67	100.90	551	-3.30 ***	-2.71 ***	-4.94 ***
ΔAROE [0;1]	-2.03% (*1.08%*)	-0.52% (*-0.02%*)	-656%	88%	45%	0.27	-17.75	415.39	821	-2.14 **	-1.92 *	-3.90 ***
ΔAROE [0;3]	-4.70% (*-0.50%*)	-2.98% (*-0.65%*)	-705%	105%	35%	0.31	-15.94	348.29	728	-4.05 ***	-3.39 ***	-8.70 ***
ΔAROE [0;5]	-5.35% (*-1.81%*)	-2.89% (*-0.24%*)	-698%	110%	38%	0.33	-14.37	291.36	646	-4.08 ***	-3.40 ***	-6.79 ***
ΔAROS [0;1]	1.01% (*4.36%*)	-0.22% (*0.03%*)	-95%	142%	45%	0.16	5.50	51.26	869	1.84 *	2.12 **	-1.91 *
ΔAROS [0;3]	-1.41% (*-25.04%*)	-0.66% (*-0.03%*)	-94%	37%	44%	0.10	-0.94	0.37	760	-3.98 ***	-1.96 **	-3.83 ***
ΔAROS [0;5]	-1.90% (*-28.63%*)	-0.82% (*0.12%*)	-91%	47%	42%	0.11	-2.82	21.12	677	-4.52 ***	-2.07 **	-4.29 ***
ΔAOROA [0;1]	0.10% (*0.06%*)	-0.38% (*-0.02%*)	-82%	105%	41%	0.09	3.99	65.25	874	0.35	0.43	-2.92 ***
ΔAOROA [0;3]	-1.58% (*-0.44%*)	-1.27% (*-0.44%*)	-124%	43%	40%	0.08	-4.36	70.72	762	-5.38 ***	-0.98	-7.20 ***
ΔAOROA [0;5]	-2.03% (*-0.50%*)	-1.07% (*-0.07%*)	-114%	41%	40%	0.09	-3.13	37.54	682	-5.85 ***	-0.98	-6.82 ***
ΔAOROE [0;1]	-1.1% (*0.33%*)	-0.61% (*-0.07%*)	-195%	152%	45%	0.20	-2.99	48.37	874	-1.59	-1.42	-2.83 ***
ΔAOROE [0;3]	-3.03% (*-2.54%*)	-3.57% (*-1.07%*)	-197%	144%	40%	0.19	-0.52	20.69	762	-4.44 ***	-3.15 ***	-6.27 ***
ΔAOROE [0;5]	-3.83% (*-0.84%*)	-4.04% (*-1.31%*)	-186%	140%	40%	0.22	-0.04	14.49	682	-4.60 ***	-3.33 ***	-6.11 ***
Panel B: Large deal												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
ΔAROA [0;1]	-1.15% (*0.40%*)	-0.26% (*0.10%*)	-33%	26%	46%	0.09	-1.16	3.71	89	-1.18	-0.46	-0.63
ΔAROA [0;3]	-2.89% (*0.20%*)	-2.21% (*-1.32%*)	-39%	37%	39%	0.11	0.00	3.31	67	-2.09 **	-0.36	-2.50 **
ΔAROA [0;5]	-0.55% (*2.57%*)	-0.16% (*0.76%*)	-37%	41%	48%	0.12	0.51	4.49	61	-0.36	-0.14	-0.48
ΔAROE [0;1]	-8.03% (*-4.92%*)	-0.55% (*-0.05%*)	-976%	209%	44%	0.91	-9.44	102.20	131	-1.01	-0.97	-0.92
ΔAROE [0;3]	-4.50% (*-0.30%*)	-2.84% (*-0.51%*)	-231%	199%	42%	0.40	-0.80	16.60	98	-1.10	-0.96	-1.88 *
ΔAROE [0;5]	-0.18% (*3.36%*)	-2.81% (*-0.16%*)	-111%	211%	44%	0.35	2.17	15.97	88	-0.04	0.00	-1.01
ΔAROS [0;1]	141.41% (*144.76%*)	0.68% (*0.93%*)	-2284%	22824%	56%	16.78	13.00	175.63	194	1.17	1.18	2.36 **
ΔAROS [0;3]	208.62% (*184.99%*)	0.44% (*1.08%*)	-795%	22883%	52%	19.66	-7.95	228.83	140	1.26	1.26	1.11
ΔAROS [0;5]	248.59% (*221.86%*)	1.19% (*2.12%*)	-254%	22892%	57%	21.01	10.50	113.32	123	1.31	1.32	2.86 ***
ΔAOROA [0;1]	2.10% (*2.05%*)	0.07% (*0.43%*)	-109%	147%	50%	0.20	3.28	27.97	205	1.48	1.79 *	0.68
ΔAOROA [0;3]	2.92% (*4.06%*)	0.37% (*1.19%*)	-47%	149%	53%	0.18	4.12	31.36	150	2.00 **	2.69 ***	1.44
ΔAOROA [0;5]	3.01% (*4.54%*)	1.54% (*2.53%*)	-166%	147%	60%	0.23	-0.96	32.48	132	1.49	1.84 *	2.55 **
ΔAOROE [0;1]	-5.45% (*-4.02%*)	-1.08% (*-0.53%*)	-2072%	1112%	43%	1.69	-7.55	118.15	205	-0.46	-0.45	-1.16
ΔAOROE [0;3]	5.14% (*5.62%*)	-0.73% (*1.77%*)	-192%	363%	49%	0.48	3.47	26.29	150	1.31	1.44	0.30
ΔAOROE [0;5]	17.14% (*20.13%*)	2.86% (*5.59%*)	-152%	1108%	57%	1.06	8.53	85.60	132	1.85 *	1.96 *	1.92 *

*Table 14.1 presents five operating performance measures for each of the four M&A strategies over three different event windows. The statistical tests run on each mean abnormal return measure are Conventional t-test (T_1), Johnson's skewness adjusted t-test (T_2), and Wilcoxon signed-rank test (T_3). Significance level: * = 10%, ** = 5%, *** = 1%.*

Table 14.2 *Abnormal and relative operating performance in the event period for different M&A strategies (cont.)*

Panel C: Selective												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
ΔAROA [0;1]	-0.93% (*0.62%*)	-0.58% (*-0.21%*)	-105%	52%	41%	0.08	-4.16	68.77	563	-2.90 ***	-1.25	-4.13 ***
ΔAROA [0;3]	-2.28% (*0.81%*)	-0.88% (*0.01%*)	-109%	55%	41%	0.10	-3.06	37.56	411	-4.65 ***	-1.00	-5.69 ***
ΔAROA [0;5]	-2.40% (*0.71%*)	-1.10% (*-0.18%*)	-110%	68%	38%	0.11	-2.58	41.07	334	-4.15 ***	-1.11	-5.46 ***
ΔAROE [0;1]	-2.83% (*0.28%*)	-0.46% (*0.04%*)	-2031%	2028%	46%	1.56	-2.56	165.96	852	-0.53	-0.52	-2.14 **
ΔAROE [0;3]	-3.69% (*0.51%*)	-1.55% (*0.77%*)	-684%	235%	42%	0.37	-9.26	192.38	603	-2.44 **	-2.20 **	-5.30 ***
ΔAROE [0;5]	-1.70% (*1.84%*)	-2.54% (*0.11%*)	-121%	793%	38%	0.43	12.93	231.80	504	-0.88	-0.84	-5.64 ***
ΔAROS [0;1]	-13.51% (*-10.16%*)	-0.38% (*-0.13%*)	-16082%	2856%	45%	5.41	-27.82	831.58	941	-0.77	-0.76	-2.50 **
ΔAROS [0;3]	20.75% (*-2.88%*)	-0.49% (*0.15%*)	-157%	10126%	44%	3.99	-1.57	101.26	707	1.38	1.39	-3.21 ***
ΔAROS [0;5]	20.31% (*-6.42%*)	-1.30% (*-0.36%*)	-471%	10112%	41%	4.34	21.92	502.19	590	1.14	1.14	-4.26 ***
ΔAOROA [0;1]	-0.24% (*-0.29%*)	-0.37% (*-0.01%*)	-71%	123%	42%	0.10	5.90	71.68	993	-0.78	-0.66	-4.27 ***
ΔAOROA [0;3]	-0.99% (*0.15%*)	-0.64% (*0.18%*)	-92%	124%	42%	0.12	4.35	51.49	761	-2.18 **	-1.67 *	-5.54 ***
ΔAOROA [0;5]	-1.55% (*-0.02%*)	-1.13% (*-0.13%*)	-107%	120%	38%	0.14	3.36	40.08	643	-2.79 ***	-2.02 **	-6.82 ***
ΔAOROE [0;1]	-0.43% (*1.00%*)	-0.40% (*0.14%*)	-1671%	665%	48%	0.62	-18.30	550.21	993	-0.22	-0.21	-2.08 **
ΔAOROE [0;3]	4.21% (*4.69%*)	-1.49% (*1.01%*)	-130%	2940%	45%	1.15	22.39	559.08	761	1.01	1.02	-3.96 ***
ΔAOROE [0;5]	-3.18% (*-0.19%*)	-2.28% (*0.46%*)	-887%	782%	40%	0.55	-1.49	166.45	643	-1.46	-1.40	-5.23 ***
Panel D: Diminutive												
	Mean (relative)	Median (relative)	Min	Max	Positive	Std.dev	Skewness	Kurtosis	N	T_1	T_2	T_3
ΔAROA [0;1]	1.19% (*2.73%*)	0.68% (*1.04%*)	-32%	54%	60%	0.10	2.25	16.58	50	0.82	1.35	1.35
ΔAROA [0;3]	-3.24% (*-0.15%*)	0.38% (*1.28%*)	-43%	19%	63%	0.12	-1.80	4.17	30	-1.51	-0.12	0.09
ΔAROA [0;5]	-2.78% (*0.33%*)	-0.06% (*0.86%*)	-28%	21%	45%	0.11	-0.76	1.55	22	-1.22	0.04	-0.41
ΔAROE [0;1]	-8.69% (*-5.58%*)	-0.32% (*0.18%*)	-457%	58%	44%	0.53	-7.33	61.62	87	-1.53	-1.34	-1.01
ΔAROE [0;3]	-2.60% (*1.61%*)	-1.42% (*0.91%*)	-119%	66%	45%	0.29	-0.77	4.70	53	-0.65	-0.51	-0.80
ΔAROE [0;5]	-4.96% (*-1.42%*)	-0.59% (*2.06%*)	-121%	90%	47%	0.30	-0.92	7.56	38	-1.02	-0.75	-0.86
ΔAROS [0;1]	-190.82% (*-187.47%*)	-0.29% (*-0.04%*)	-43716%	28212%	49%	48.16	-4.60	67.18	119	-0.43	-0.43	-0.61
ΔAROS [0;3]	-40.76% (*-64.39%*)	-3.69% (*-3.05%*)	-3042%	338%	29%	3.58	-30.42	3.38	75	-0.99	-0.97	-2.97 ***
ΔAROS [0;5]	-51.02% (*-77.75%*)	-5.49% (*-4.56%*)	-2851%	230%	32%	3.96	-7.07	50.98	53	-0.94	-0.92	-2.23 **
ΔAOROA [0;1]	-1.29% (*-1.34%*)	-0.46% (*-0.10%*)	-236%	68%	43%	0.24	-6.90	68.00	138	-0.63	-0.53	-0.54
ΔAOROA [0;3]	-5.31% (*-4.18%*)	-1.23% (*-0.41%*)	-230%	49%	39%	0.29	-5.52	42.29	93	-1.79 *	-1.35	-2.37 **
ΔAOROA [0;5]	-4.95% (*-3.41%*)	-2.39% (*-1.39%*)	-101%	66%	34%	0.20	-2.08	13.21	71	-2.08 **	-1.14	-3.17 ***
ΔAOROE [0;1]	-4.71% (*-3.28%*)	-1.54% (*-1.00%*)	-1775%	1454%	46%	2.00	-2.28	65.58	138	-0.28	-0.27	-1.09
ΔAOROE [0;3]	-27.14% (*-26.65%*)	-6.08% (*-3.58%*)	-1850%	184%	33%	1.97	-8.83	82.27	93	-1.33	-1.29	-2.88 ***
ΔAOROE [0;5]	-30.64% (*-27.65%*)	-9.38% (*-6.64%*)	-1854%	220%	38%	2.24	-7.86	64.83	71	-1.15	-1.12	-2.64 ***

*Table 14.2 presents five operating performance measures for each of the four M&A strategies over three different event windows. The statistical tests run on each mean abnormal return measure are Conventional t-test (T_1), Johnson's skewness adjusted t-test (T_2), and Wilcoxon signed-rank test (T_3). Significance level: * = 10%, ** = 5%, *** = 1%.*

7.2.1 Programmatic

7.2.1.1 Market performance

When studying Panel A in Table 13, a clear pattern of positive abnormal returns is evident for programmatic acquirers. The programmatic strategy likewise performs better relative to the total sample across all event windows. The 5-year BHAR$_i$ seems to be the only measure where the strategy realizes a negative abnormal return, although it still surpasses the total sample. Interestingly the industry-adjusted return relative to other strategies is less positive and declines over the event period in contrast to the market-adjusted returns. While such findings could be related to biases in the industry benchmark, one may also posit that programmatic acquirers operate in competitive industries. Nonetheless, despite relatively high average returns, only one of the six market performance measures has a majority of positive returns when analyzing individual transactions. Accordingly, a discussion opens regarding the strategy's effectiveness on a firm level. Still, relative to the other strategies, the median performance again outperforms the total sample in four of the six measures. Both the conventional t-test (T_1) and Johnson's skewness adjusted t-test (T_2) indicate significance for the BHAR$_m$ metrics. Similarly, these parametric tests show significance for the 1-year and 5-year BHAR$_i$, albeit none for the 3-year BHAR$_i$. Interestingly, Wilcoxon signed-rank test (T_3) indicates high significance across all event windows of BHAR$_i$, whereas the significance of BHAR$_m$ is lower, with 1-year BHAR$_m$ being insignificant. The inconsistency could be related to differences in the mean and median returns, given how the parametric tests assess the mean and the nonparametric evaluates the median. Furthermore, acquirers with multiple events that overlap within the event window can potentially result in cross-sectional dependence and subsequently lead to a downwardly biased standard error, which may cause the t-statistics to be upwardly biased (Mitchell & Stafford, 2000).

Contrary to our findings, a significant body of literature posit that high-frequency acquirers exhibit worse market performance relative to low-frequency acquirers (c.f. King et al., 2004; Ismail, 2008; Billett & Qian, 2008). Rather, our findings are consistent with the empirical research of Malatesta and Thompson (1985) and Croci and Petmezas (2009), as well as the theoretical concept of strategic momentum, suggesting value-creating effects in firms undertaking multiple acquisitions over time (Amburgey & Miner, 1992; Frick & Torres, 2002). Moreover, while organizational theory posits that individual acquisitions may manifest unfavorable returns, program-level performance can surpass such losses through learning effects (Finkelstein & Haleblian, 2002). Perkins and Salomon (1992) similarly contend that learning effects can be harnessed in future acquisitions, serving as a moderating variable in the connection between acquisition frequency and performance (Markides & Ittner, 1994; Basuil & Datta, 2015). This could potentially elucidate the strategy's negative median returns and relatively high kurtosis, signaling a heavy-tailed distribution with outliers. Herein, it is worth noting that the high frequency of transactions in a programmatic strategy makes it difficult to determine the

influence of announcement effects and other short-term occurrences, as transactions sometimes overlap in the long-term event windows.

7.2.1.2 Operating performance

Notably, the programmatic strategy is observed to have negative abnormal profitability across all measures and event windows except for two measures, namely 1-year ΔAROS and ΔAOROA. Furthermore, the examination of Panel A in Table 14.1 reveals that the programmatic strategy underperforms relative to the total sample in 11 of the 15 measures. Hence, the previously reported positive market return is likely not attributed to any operational improvements. Furthermore, upon evaluating individual transactions, the median abnormal return for programmatic acquirers is negative throughout the entire event period and all measures. Following the high number of observations, the results' significance level is notably high. Only six of 45 statistical tests show insignificant results, whereas the majority are highly significant. Of the six insignificant results, four are tied to Johnson's skewness adjusted t-test (T_2), indicating a high skewness within the returns. Meanwhile, Wilcoxon signed-rank test (T_3) is significant for all measures and event windows. Again it is worth noting that acquirers with multiple overlapping events within the event window may engender cross-sectional dependence, giving rise to a downwardly biased standard error that may result in an upwardly biased t-statistic (Mitchell & Stafford, 2000).

From a resource-based perspective, the programmatic strategy's emphasis on smaller targets is expected to alleviate the adverse impact of integration challenges (Alexandridis et al., 2013). However, the present study does not offer any substantial evidence to support this reasoning. While some scholars assert that M&A performance is enhanced through experience (Finkelstein & Haleblian, 2002), others argue that excessively high acquisition rates may result in corporate indigestion (Kitching, 1967). Both perspectives may be valid, as an optimal relationship could exist between acquisition rate and acquirer performance, as well as between relative size and acquirer performance. There could be a correlation between performance and the combined effects of relative size and acquisition rate, wherein programmatic acquirers employing a combination of high frequency and large acquisitions answer for the value-depleting results.

Meanwhile, the phenomenon of corporate indigestion may not be fully reflected in the programmatic acquirers' market performance, particularly when the firm has already completed multiple acquisitions before the onset of indigestion becomes evident. In a similar vein, an inverted U-shaped relationship may exist between prior acquisition frequency and acquirer performance (Hayward, 2002; Chao, 2018), whereby the programmatic strategy fosters too high velocity. An alternative explanation is related to the risks of overpaying. This reasoning could explain the strategy's dispersed relation between market- and operational performance, given how such risks would be highlighted in the accounting metrics, albeit not necessarily the market performance. As

stated by Kim et al. (2011), an enterprise that relies on acquisitions to maintain growth and consequently pursues frequent acquisition activities is more vulnerable to the risks of overpayment.

7.2.1.3 Sub-conclusion

Overall, the programmatic strategy realizes a positive abnormal market return, with 5-year $BHAR_i$ being the only exception. Relative to the total sample, the strategy performs better across all event windows. Herein 15 of 18 statistical tests are significant, of which nine are significant on a 1% level, four on a 5% level, and two on a 10% level. Given the above findings, we strongly reject Hypothesis 2a that *The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies*. Instead, it is concluded that a programmatic strategy creates higher long-term abnormal market returns relative to other M&A strategies.

In contrast to the positive findings regarding market performance, the programmatic strategy has negative abnormal profitability in 13 of 15 operating performance measures and, on average, underperforms relative to the total sample. The robustness of the findings is evident given that 39 of 45 statistical tests show significance, wherein the majority are significant on a 1% level. Given the above findings, we strongly reject Hypothesis 2b that *The long-term abnormal profitability of the programmatic strategy is nondifferent to that of other strategies.* The findings rather confirm that the programmatic strategy creates lower long-term abnormal profitability relative to other M&A strategies.

Table 15 *Relative performance for the programmatic strategy*

	$BHAR_m$	$BHAR_i$	ΔAROA	ΔAROE	ΔAROS	ΔAOROA	ΔAOROE
[0;1]	#1	#1	#4	#1	#2	#2	#2
[0;3]	#2	#2	#4	#4	#3	#3	#3
[0;5]	#2	#2	#4	#4	#3	#3	#3

Table 15 illustrates the relative positioning of the programmatic strategy among the four strategies.

7.2.2 Large deal

7.2.2.1 Market performance

When analyzing Panel B in Table 13, the large deal strategy appears to have positive abnormal returns against both its benchmarks over all three event windows. Interestingly, the large deal strategy likewise outperforms the other strategies when looking at a 3-year and 5-year event window, whereas the 1-year event window looks relatively worse. While the average $BHAR_m$ is trending higher for each event window, its median returns are moving in the opposite direction. These results are further strengthened by the increasing standard deviation, skewness, and kurtosis, indicating more broadly scattered individual returns. Progressing to $BHAR_i$, the large deal strategy realizes positive average returns for each event window, although the returns are fluctuating. Nonetheless, similar to the market-adjusted returns, the median $BHAR_i$ is decreasing for each event period, ultimately

underscoring the increase of broadly scattered individual returns as the temporal distance from the transaction extends. Worth noting is that the number of large deal observations falls substantially from the 1-year event window to the 5-year event window, which could contribute to the skewed results. Compared to other strategies, the results for large deal M&A is notably less significant. While the parametric conventional t-test (T_1) and Johnson's skewness adjusted t-test (T_2) indicate some significance for the 3- and 5-year market-adjusted returns, these tests show no significance for the industry-adjusted returns. Meanwhile, the nonparametric Wilcoxon signed-rank test (T_3) shows no significance for the market-adjusted returns, whereas the test is significant in the 3- and 5-year industry-adjusted returns.

Upon examining the theoretical literature, several potential explanations for the observed performance emerge. The initial adverse market reaction in the 1-year event window may stem from the market's perception of large acquisitions as indicative of managerial empire building, as postulated by Seth et al. (2002). However, the large deal strategy outperforms other strategies when looking at the market performance holistically. While some scholars (c.f. Sudarsanam et al., 1996; Schweizer, 2005) argue that acquiring relatively smaller targets generates superior abnormal stock returns, others (c.f. Kitching, 1967; Asquith et al., 1983; Jarrell & Poulsen, 1989), contend that abnormal stock returns tend to be greater in relatively large acquisitions. Hence, the outcomes of the large deal strategy appear to corroborate with the findings of the latter studies. However, akin to the body of research on frequency, an inverted U-shaped correlation could exist between acquisition performance and relative size (Ahuja & Katila, 2001; Ficery et al., 2007). As some companies pursue excessively large targets, this theory may elucidate the diffuse range of returns associated with the large deal strategy, ultimately resulting in the presented negative median returns. Meanwhile, some firms, in accordance with Kitching (1967), may be able to address the relative size mismatch through effective organizational structures, thereby boosting the average returns of the strategy under consideration.

7.2.2.2 Operating performance

At first glance, the operating performance of large deal acquirers appears to be relatively varied. By studying Panel B in Table 14.1, it is evident that both ΔAROA and ΔAROE are negative across all event windows. Still, the strategy performs better than the total sample for ΔAROA, whereas ΔAROE is better for the 5-year event window and worse for the 1- and 3-year event windows. It is worth noting, however, that the number of observations for these metrics is relatively low, and as such, the results do not appear to be statistically significant, except for 3-year ΔAROA. Progressing to ΔAROS, the large deal strategy displays substantially better results compared to both its industry benchmark and relative to the other strategies. Yet, again, the results are insignificant. Upon examination of the median returns, it is evident that the abnormal profitability is disparate in comparison to the mean value. Rather the highly positive ΔAROS appears to be explained by outliers, as evidenced by the

high kurtosis and extreme max value. In line with the positive ΔAROS, the other operating income measures, ΔAOROA and ΔAOROE, on average, stipulate positive abnormal profitability for the large deal strategy – both relative to the benchmark and other strategies. Moreover, the profitability seems to increase over the event period. Nonetheless, the significance level remains relatively low. The conventional t-test (T_1) shows significance for 3-year ΔAOROA and 5-year ΔAOROE, while Johnson's skewness adjusted t-test (T_2) indicates significant results for the entire event period in ΔAOROA alongside 5-year ΔAOROE. Last, Wilcoxon signed-rank test (T_3) implies significance for 5-year ΔAOROA and ΔAOROE.

It is difficult to reconcile the varied operational performance with previous theoretical constructs. However, the strategy's positive abnormal return in terms of the efficiency measure (i.e., ΔAROS) and the other two operating income measures (i.e., ΔAOROA and ΔAOROE) are consistent with a deal-specific advantage given the smaller pool of potential acquirers in large deals, resulting in more favorable transaction terms (Roll, 1986; Alexandridis et al., 2013). Referring to the inverted U-shaped correlation between frequency and acquisition performance (Hayward, 2002), one may contend that the frequency pattern within a large deal strategy is falling within the top of the curve given its moderate acquisition velocity, hence allowing large deal acquirers to perform relatively better. In contrast, the negative abnormal return in ΔAROA and ΔAROE suggest a presence of countervailing factors, aligning with the findings of Thanos and Papadakis (2012). Through a resource-based perspective, the integration of relatively large acquisitions demands an overreliance on corporate resources since the acquirer must employ more intricate integration methodologies to avert synergistic disruptions within the extant organizational structure (Schweizer, 2005). Nonetheless, the relative performance of large deal acquirers is above the total sample for ΔAROA, which, unadjusted for industry effects, could mark a relatively better integration approach in large deal acquirers. Still, such reasoning is not confirmed when analyzing the relative performance of ΔAROE compared to other strategies.

7.2.2.3 Sub-conclusion

The large deal strategy realizes a positive abnormal market return across all benchmarks and event windows. Relative to the total sample, the strategy performs better in the 3- and 5-year event windows, albeit underperforms in the 1-year event window. Only one-third of the statistical tests are significant, of which two are significant on a 1% level, two on a 5% level, and two on a 10% level. Given the above findings, we strongly accept Hypothesis 2a that *The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies.* Nonetheless, the results indicate that a large deal strategy creates higher long-term abnormal market returns relative to other M&A strategies over a 3- and 5-year event period and underperforms over a 1-year event period.

Meanwhile, the operating performance of the large deal strategy displays dispersed profitability, whereby seven measures are negative and eight positive. Still, the strategy outperforms

relative to the total sample, with 12 of 15 measures being above average. Overall, 13 of 45 statistical tests on the operating performance indicate significant results, where two are on the 1% level, five on the 5% level, and six on the 10% level. Given the above findings, we strongly accept Hypothesis 2b that *The long-term abnormal profitability of the large deal strategy is nondifferent to that of other strategies.* However, the findings indicate that the large deal strategy creates lower long-term abnormal profitability relative to other M&A strategies when looking at ROA and ROE, albeit outperforms when looking at ROS, OROA, and OROE.

Table 16 *Relative performance for the large deal strategy*

	$BHAR_m$	$BHAR_i$	ΔAROA	ΔAROE	ΔAROS	ΔAOROA	ΔAOROE
[0;1]	#3	#3	#3	#3	#1	#1	#4
[0;3]	#1	#1	#2	#3	#1	#1	#1
[0;5]	#1	#1	#2	#1	#1	#1	#1

Table 16 illustrates the relative positioning of the large deal strategy among the four strategies.

7.2.3 Selective

7.2.3.1 Market performance

Studying Panel C in Table 13, the returns of the selective strategy show diverging results. While $BHAR_m$ successively increases across the event period, $BHAR_i$ does the opposite and decreases. Relative to other strategies, the performance is above average for the 1-year event window and below average for the rest of the period. Notably though, the median $BHAR_i$ outperforms the total sample, indicating a relatively favorable return on an individual transaction level. Still, these findings are not confirmed by the median $BHAR_m$. The parametric conventional t-test (T_1) and Johnson's skewness adjusted t-test (T_2) indicate high significance for all measures, excluding the 3-year $BHAR_i$. Concurrently, the nonparametric Wilcoxon signed-rank test (T_3) shows no significance for the market-adjusted returns.

As previously noted, the performance outcomes for selective acquirers exhibit a degree of variance when contrasting market-adjusted and industry-adjusted returns. Nevertheless, when juxtaposed against the total sample, the findings become more apparent as the strategy outperforms in a 1-year event window and underperforms in 3- and 5-year windows. These results can partly be explained by prior literature. Developing acquisition capabilities is often an expensive undertaking, which may not be justifiable for firms that engage in infrequent acquisitions (Laamanen & Keil, 2008), which may impede the possibility of achieving positive long-term returns. Moreover, some scholars posit that frequent acquirers exhibit superior performance compared to selective acquirers (c.f. Malatesta & Thompson, 1985; Croci & Petmezas, 2009), which aligns with the 3-year and 5-year event window results. Meanwhile, recent studies (c.f. Ismail, 2008; Billett & Qian, 2008; Huyghebaert & Luypaert, 2013) have reported that selective acquirers produce positive short-term abnormal returns

when examining the announcement effect of M&A transactions. These short-term results could subsequently explain why the selective strategy overperforms in the 1-year event window.

7.2.3.2 Operating performance

Through a brief analysis of Panel C in Table 14.2, the selective strategy is evidently performing relatively well compared to its peers. These acquirers, on average, perform better than the total sample in ΔAROA and ΔAROE over the entire event period. However, relative to its benchmarks, the selective strategy underperforms – both when studying average and median returns. While the conventional t-test (T_1) is highly significant across the event period for ΔAROA, the test is only significant in the 3-year event window for ΔAROE. Interestingly, Johnson's skewness adjusted t-test (T_2) is solely significant for the 3-year ΔAROE, indicating skewed results for all other measures of ΔAROA and ΔAROE. Still, Wilcoxon signed-rank test (T_3) is highly significant across these two measures. Despite a negative 1-year ΔAROS, the selective strategy displays positive abnormal returns in the 3- and 5-year event window. However, relative to other strategies, the results are below average. Herein, ΔAROS show no significance for the parametric tests (T_1 and T_2), whereas the nonparametric Wilcoxon signed-rank test (T_3) is significant across all event windows. When analyzing ΔAOROA and ΔAOROE, the selective strategy has negative abnormal returns for all measures but 3-year ΔAOROE. Meanwhile, the results relative to other strategies are dispersed. In terms of significance level, 3- and 5-year ΔAOROA are highly significant, while the other operating income measures solely indicate significance in the Wilcoxon signed-rank test (T_3).

The operating performance of selective acquirers exhibits significant variance. However, in comparison to the total sample, the results are predominantly positive, with the strategy outperforming in approximately a third of the measures. Drawing parallels with research conducted by Collins et al. (2009), it can be inferred that the acquisition capabilities derived from previous acquisitions are more closely related to the quality of learning rather than the quantity. Additionally, the favorable operating outcomes observed in the selective strategy may be attributed to a prudent approach to M&A, which emphasizes compatibility, strategic alignment, and adequate resource allocation towards post-integration efforts. These factors have been identified as critical components of successful acquisitions in prior literature (Hitt et al., 2001; Epstein, 2004; Sudarsanam, 2010).

7.2.3.3 Sub-conclusion

The selective strategy unanimously has a positive abnormal market return when analyzing a 1-year event window. However, within the 3- and 5-year event windows, the market-adjusted returns are positive, whereas the industry-adjusted returns are negative. Relative to the total sample, the strategy performs better for the 1-year horizon, albeit worse when expanding the horizon to 3- and 5 years. In total, 12 of 18 statistical tests are significant, of which all are significant on a 1% level. Given the above findings, we strongly reject Hypothesis 3a that *The long-term abnormal market return of the*

selective strategy is nondifferent to that of other strategies. Instead, it is concluded that a selective strategy creates higher long-term abnormal market returns relative to other M&A strategies over a 1-year horizon but lower over a 3- and 5-year horizon.

In line with the majority of negative findings within market performance, the selective strategy has negative abnormal profitability in 12 of 15 operating performance measures, nevertheless, overperform relative to the total sample in 9 of 15 measures. The robustness of the findings is dispersed given that 24 six of 45 statistical tests show significance on a 5- and 1% level. Given the above findings, we strongly reject Hypothesis 3b that *The long-term abnormal profitability of the selective strategy is nondifferent to that of other strategies.* The findings rather confirm that the selective strategy, on average, creates higher long-term abnormal profitability relative to other M&A strategies.

Table 17 *Relative performance for the selective strategy*

	$BHAR_m$	$BHAR_i$	ΔAROA	ΔAROE	ΔAROS	ΔAOROA	ΔAOROE
[0;1]	#2	#2	#2	#2	#3	#3	#1
[0;3]	#3	#3	#1	#1	#2	#2	#2
[0;5]	#3	#3	#1	#2	#2	#2	#2

Table 17 illustrates the relative positioning of the selective strategy among the four strategies.

7.2.4 Diminutive

7.2.4.1 Market performance

The overall market returns of diminutive acquirers seem substantially negative when viewing Panel D of Table 13. The strategy's negative abnormal returns are likewise considerably worse compared to other strategies. In fact, the market performance post-acquisition is decreasing in line with the event period whereby after 5 years, fewer than a third of the returns are positive – both when analyzing $BHAR_m$ and $BHAR_i$. Despite the low number of observations, the results appear to be relatively significant. Except for 1-year $BHAR_m$, the conventional t-test (T_1) shows some significance in all measures. Even though Johnson's skewness adjusted t-test (T_2) is less significant, with significance in half of the measures, the Wilcoxon signed-rank test (T_3) establishes the robustness in the findings through high significance levels across all measures and periods.

Relating to prior studies, the negative market performance seen in the diminutive strategy could be related to early theory by Penrose (1959). According to Penrose's theory, a firm's current rate of growth is dependent upon the costs of adjustment and modifications to its productive opportunity set that stem from previous growth initiatives. Hence, an extremely low level of external growth may give rise to organizational maturity, simplicity and inflexibility (Miller, 1994; Salvato et al., 2007), ultimately limiting a diminutive acquirer's knowledge base (Vermeulen & Barkema, 2001) and thereby restricting their ability to innovate and adapt to changing market conditions (Brueller et al.,

2014; Douma & Schreuder, 2017). Further research suggests that firms with a track record of successful M&A are more inclined to pursue such activity in the future (Shi et al., 2012). Consequently, acquisition activity is expected to increase over time in response to favorable outcomes and remain stagnant or decrease in response to negative outcomes. Thus, employing a diminutive strategy may signal unfavorable past experiences, which could explain the market's negative reaction to diminutive acquirers' acquisitions.

7.2.4.2 Operating performance

Conforming to the negative market performance, the operating findings for the diminutive strategy are negative across the board. Panel D of Table 14.2 indicates a substantially worse performance compared to peer strategies. The diminutive strategy has negative abnormal profitability in all but one measure, namely 1-year ΔAROA. Similarly, the strategy underperforms the total sample in all but two measures. Interestingly, the median ΔAROA and ΔAROE reveal that the diminutive strategy outperforms peers when evaluating single transactions, indicating broadly scattered returns wherein a subset of firms draw down the strategy's overall operating performance. However, these findings are not supported by the three other operating performance metrics, which show a negative performance relative to the total sample. The operating performance for diminutive acquirers is relatively insignificant, whereby only two parametric tests (T_1) and six nonparametric tests (T_3) – all related to the 3-year and 5-year event window – show significance.

Overall the results partly challenge research suggesting that organic growth enhances operating efficiency over the long term (DePamphilis, 2010; Sudarsanam, 2010; Moatti et al., 2015). However, empirical evidence also suggests that a lack of balance between organic and acquisitive growth may lead to decreased profitability. The process of M&A requires a significant amount of organizational resources, time and capital, potentially distracting attention from other critical aspects of the business (Hitt et al., 2001). Herein, Penrose (1959) contends that a strategy solely focusing on organic growth, similar to the diminutive strategy, could hinder operational efficiency. Additionally, Lockett et al. (2011) posit that previous organic growth initiatives may impede current organic growth. Although the operating measures relate to profitability rather than growth, the reasoning may hold given the long-term correlation between profitability and growth. The underperformance of diminutive acquirers could also be linked to prior theories of a lower level of prudence in small transactions, given that potential financial losses are perceived as insignificant (Moeller et al., 2004). Moreover, the diminutive acquirers may miss the opportunity to secure targets on favorable terms, as the pool of potential acquirers is relatively large for small transactions (Roll, 1986), consequently impeding the firm's long-term profitability.

7.2.4.3 Sub-conclusion

The diminutive strategy, without exception, has a negative abnormal market return across the entire event period. Furthermore, when analyzing relative performance, the strategy similarly underperforms within all measures and event windows. The reliability of the findings is established by the statistical tests, showing significance in 15 of 18 tests. Herein, eight are significant on a 1% level, two on a 5% level, and four on a 10% level. Given the above findings, we strongly reject Hypothesis 5a that *The long-term abnormal market return of the diminutive strategy is nondifferent to that of other strategies.* Instead, it is concluded that a diminutive strategy creates lower long-term abnormal market returns relative to other M&A strategies.

Coherent with the negative market performance, the diminutive strategy has negative abnormal profitability in all but one operating performance measure. Relative to the total sample, the strategy underperforms in 13 of 15 measures. Nonetheless, the robustness of the findings is not confirmed, as only eight of 45 statistical tests show significance. Given the above findings, we weakly accept Hypothesis 5b that *The long-term abnormal profitability of the diminutive strategy is nondifferent to that of other strategies.* Nevertheless, the findings still indicate that the diminutive strategy creates lower long-term abnormal profitability relative to other M&A strategies.

Table 18 *Relative performance for the diminutive strategy*

	$BHAR_m$	$BHAR_i$	ΔAROA	ΔAROE	ΔAROS	ΔAOROA	ΔAOROE
[0;1]	#4	#4	#1	#4	#4	#4	#3
[0;3]	#4	#4	#3	#2	#4	#4	#4
[0;5]	#4	#4	#3	#3	#4	#4	#4

Table 18 illustrates the relative positioning of the diminutive strategy among the four strategies.

7.3 Regression analysis

The primary aim of the multiple regression analysis is to furnish additional insights into the origins of value creation across distinct M&A strategies and ensure the event study's robustness. The Ordinary Least Squares (OLS) method has been employed to analyze the association between the 7 dependent performance variables and 4 independent strategy variables alongside 21 control variables. Tables 19.1-19.3 on the following pages outline a selection of control variables for the 1-, 3-, and 5-year regressions. The F-statistic suggests that most of the regression are significant on a model level and that at least one of the variables is helpful in explaining abnormal market- and operating performance. However, the ΔAROS indicate a bad fit with the independent variables whereby less emphasis is put on analyzing its results in the following sections. To address multicollinearity problems, namely the dummy trap, the number of dummy variables is set to $n_i - 1$ where *n* represents the acquisition strategies and industry context. To test whether a defined acquisition strategy outperforms isolated acquisitions, the diminutive strategy is being treated as a benchmark. Furthermore, the authors have excluded one industry variable, namely utilities, whereby the industry variables are benchmarked

against the utilities index. The regression presented below hides some of the 23 variables, thereby ensuring a presentation of the most pertinent findings. The hidden variables include industry and those displaying an insignificant impact on the overall value creation. Still, all variables are discussed and the full regressions are presented in Appendix C.

7.3.1 Model control

As outlined in Section 6.3.2, the regression analysis is contingent upon five statistical assumptions that should be satisfied within an OLS regression. This section presents the procedures conducted to ensure the accuracy of the regressions. This section refers to Appendix B, where tables and figures of the performed tests are outlined. The Breusch-Pagan test (Breusch & Pagan, 1979) reveals that heteroscedasticity is present in the data. Accordingly, White's (1980) heteroskedastic robust standard errors are presented in brackets in Table 19.1-19.3 and Appendix C.1-C.3 to provide a more accurate measure of the true standard deviation.

None of the regressions exhibit a mean variance inflation factor (VIF) above 5.0. Most research papers consider a VIF > 10.0 as an indicator of multicollinearity (Salmerón et al., 2018), hence the explanatory variables are understood to be independent of each other and no multicollinearity is present. Moreover, the correlation matrix suggests little correlation among the independent variables, presented in Appendix B.1. Last, the Durbin-Watson test is performed to examine any potential misspecification between variables and error terms. The d-statistic from the test varies across the dependent variables and measurement periods, but most fall relatively close to 2.0, representing perfect stochastic independence except for the ΔAROA variable which does exhibit partial positive autocorrelation with a d-statistic ranging from 1.05 - 1.09. However, ΔAOROA shows a near perfect stochastic independence satisfying the autocorrelation assumption of the regression.

The tests are supplemented by figures in Appendix B.5-B.7 to illustrate the linearity, neutrality and autocorrelation assumptions. To be expected, there are a few outliers deviating from the fitted line, causing some deviation from the normal distribution. However, the vast majority of residuals fall close to the straight line. The neutrality assumption is further illustrated in histograms which shows a fairly normal distribution. Linearity is also depicted, plotting the actual values for the dependent variables against the predicted values. Most of the dependent variables show a relatively good fit, however, the regression for ΔAROA, ΔAROE and ΔAROS deviates slightly from the fitted line, which is further evident from the relatively low F-statistic. To this end, more emphasis is allocated to ΔAOROA and ΔAOROE when analyzing operating performance as these better fulfill all the regression assumptions. In addition, ΔAOROA and ΔAOROE provide a more appropriate measurement of operating performance as it excludes non-operating activities (Petersen et al., 2020).

Table 19.1 *1-year regression results for the total sample*

1 YEAR	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
PR	0.348 ***	0.357 ***	-0.016	0.086	2.528	0.048 **	0.069
	(0.094)	(0.093)	(0.016)	(0.069)	(4.136)	(0.022)	(0.155)
SL	0.212 ***	0.204 ***	-0.015	0.089	2.21	0.0211	0.047
	(0.057)	(0.056)	(0.016)	(0.061)	(4.412)	(0.020)	(0.171)
LD	0.091	0.076	-0.004	0.020	3.523	0.033	-0.000
	(0.069)	(0.068)	(0.022)	(0.096)	(4.595)	(0.026)	(0.200)
SIZE	-0.146 ***	-0.148 ***	0.005	0.009	-0.232	-0.015 ***	-0.033
	(0.036)	(0.035)	(0.006)	(0.058)	(0.343)	(0.005)	(0.026)
VALUATION	-0.000 ***	-0.000 ***	-0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RELATEDNESS_1	0.032	0.022	-0.014	-0.031	0.482	0.006	0.039
	(0.034)	(0.034)	(0.008)	(0.038)	(1.593)	(0.006)	(0.049)
MACRO_1	-0.439 ***	-0.078	0.029 *	0.031	0.480 *	0.019 **	0.104
	(0.067)	(0.053)	(0.016)	(0.042)	(0.286)	(0.009)	(0.070)
MACRO_2	-0.146 ***	-0.056	0.014	-0.021	0.541 **	-0.006	0.063
	(0.046)	(0.043)	(0.014)	(0.048)	(0.275)	(0.008)	(0.079)
MACRO_3	0.057 *	0.102 ***	-0.045 **	-0.027	0.942	-0.004	0.013
	(0.032)	(0.032)	(0.019)	(0.049)	(0.708)	(0.010)	(0.064)
MACRO_4	-0.025	0.002	-0.029 *	-0.010	-0.457	-0.017 **	-0.085
	(0.044)	(0.043)	(0.015)	(0.044)	(0.318)	(0.007)	(0.083)
CONSTANT	1.154 ***	1.261 ***	-0.042	-0.198	0.875	0.135 **	0.305
	(0.360)	(0.358)	(0.075)	(0.570)	(6.682)	(0.056)	(0.380)
Observations	2,127	2,127	1,385	1,843	2,070	2,154	2,154
R-Squared	0.073	0.054	0.044	0.002	0.006	0.032	0.011
Adjusted R-squeared	0.063	0.044	0.028	-0.011	-0.005	0.021	-0.000
Residual Std. Error	0.361	0.345	0.017	0.99	173.100	0.014	0.718
(d. f.)	(2,103)	(2,103)	(1,361)	(1,819)	(2,046)	(2,130)	(2,130)
F Statistic	111.58 ***	130.16 ***	1.22	1.29	0.54	2.07 ***	7.12 ***
(d. f.)	(23; 2,103)	(23; 2,103)	(23; 1,361)	(23; 1,819)	(23; 2,046)	(23; 2,130)	(23; 2,130)

Table 19.2 *3-year regression results for the total sample*

3 YEAR	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
PR	1.020 ***	0.984 ***	0.018	0.004	1.303 **	0.057 **	0.302
	(0.171)	(0.170)	(0.025)	(0.043)	(0.637)	(0.029)	(0.189)
SL	0.522 ***	0.475 ***	0.017	-0.004	1.000 *	0.047 *	0.338 *
	(0.131)	(0.129)	(0.025)	(0.043)	(0.517)	(0.029)	(0.204)
LD	0.486 **	0.441 **	0.028	0.02	2.664	0.074 **	0.276
	(0.193)	(0.192)	(0.031)	(0.060)	(1.926)	(0.034)	(0.189)
SIZE	-0.445 ***	-0.442 ***	0.002	0.006	-0.593 *	-0.011 ***	-0.074 *
	(0.069)	(0.069)	(0.011)	(0.012)	(0.347)	(0.004)	(0.044)
VALUATION	0.000 ***	0.000 ***	-0.000 ***	-0.000 **	-0.000	0.000 ***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RELATEDNESS_1	0.259 ***	0.217 ***	-0.009	0.024	0.144	-0.003	0.033
	(0.071)	(0.071)	(0.011)	(0.017)	(0.258)	(0.007)	(0.045)
MACRO_1	-0.528 ***	-0.276 **	0.053 ***	0.051	0.181	0.018 *	0.021
	(0.153)	(0.134)	(0.015)	(0.027)	(0.252)	(0.011)	(0.029)
MACRO_2	-0.867 ***	-0.216 **	0.037 ***	-0.032	0.272	0.005	0.016
	(0.110)	(0.106)	(0.014)	(0.045)	(0.237)	(0.010)	(0.029)
MACRO_3	0.040	0.093	-0.050 **	0.010	0.665	0.012	0.016
	(0.073)	(0.074)	(0.020)	(0.020)	(0.674)	(0.011)	(0.040)
MACRO_4	-0.263 **	-0.076	-0.043 ***	-0.018	-0.391	-0.006	-0.050
	(0.115)	(0.115)	(0.015)	(0.023)	(0.284)	(0.008)	(0.034)
CONSTANT	3.485 ***	4.141 ***	-0.039	-0.055	4.081	0.036	0.791
	(0.827)	(0.853)	(0.110)	(0.175)	(2.503)	(0.055)	(0.490)
Observations	1,706	1,706	1,105	1,449	1,649	1,730	1,730
R-Squared	0.131	0.077	0.059	0.017	0.02	0.049	0.018
Adjusted R-squeared	0.119	0.064	0.039	0.001	0.007	0.036	0.004
Residual Std. Error	1.997	1.973	0.023	0.082	40.057	0.015	0.822
(d. f.)	(1,682)	(1,682)	(1,081)	(1,425)	(1,625)	(1,706)	(1,706)
F Statistic	23.50 ***	16.25 ***	2.00 ***	1.71 **	0.43	9.89 ***	14.82 ***
(d. f.)	(23; 1,682)	(23; 1,682)	(23; 1,081)	(23; 1,425)	(23; 1,625)	(23; 1,706)	(23; 1,706)

Table 19.3 *5-year regression results for the total sample*

5 YEAR	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
PR	1.739 ***	1.412 ***	0.015	0.009	1.598 *	0.043 *	0.286
	(0.267)	(0.251)	(0.028)	(0.052)	(0.840)	(0.024)	(0.243)
SL	1.059 ***	0.793 ***	0.019	0.028	1.196 *	0.03	0.279
	(0.230)	(0.207)	(0.028)	(0.053)	(0.690)	(0.024)	(0.255)
LD	1.155 **	0.869 *	0.045	0.034	3.344	0.073 **	0.452 *
	(0.457)	(0.453)	(0.035)	(0.067)	(2.325)	(0.031)	(0.259)
SIZE	-0.445 ***	-0.446 ***	0.008	0.015	-0.676	-0.008	-0.014
	(0.085)	(0.084)	(0.014)	(0.012)	(0.413)	(0.005)	(0.016)
VALUATION	-0.000 ***	-0.000 ***	-0.007	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)	(0.000)	(0.000)
RELATEDNESS_1	0.291 *	0.233	-0.012	0.008	0.180	-0.013	0.039
	(0.161)	(0.161)	(0.014)	(0.021)	(0.327)	(0.009)	(0.058)
MACRO_1	0.356	-0.178	0.042 ***	0.014	0.186	0.015	-0.024
	(0.216)	(0.188)	(0.014)	(0.029)	(0.272)	(0.012)	(0.035)
MACRO_2	-0.224 *	-0.110	0.034 **	0.054	0.249	0.009	0.037
	(0.128)	(0.117)	(0.014)	(0.058)	(0.244)	(0.011)	(0.036)
MACRO_3	0.238	0.158	-0.059 ***	0.005	0.677	0.018 *	0.048
	(0.149)	(0.148)	(0.021)	(0.020)	(0.686)	(0.010)	(0.043)
MACRO_4	-1.399 ***	-0.427 ***	-0.037 **	0.008	-0.431	-0.005	-0.023
	(0.150)	(0.146)	(0.016)	(0.023)	(0.299)	(0.010)	(0.032)
CONSTANT	3.173 **	4.854 ***	-0.097	-0.085	4.104	0.039	-0.088
	(1.263)	(1.292)	(0.138)	(0.176)	(2.915)	(0.055)	(0.333)
Observations	1,434	1,434	942	1,244	1,410	1,492	1,492
R-Squared	0.160	0.07	0.066	0.022	0.025	0.063	0.022
Adjusted R-squeared	0.146	0.055	0.042	0.004	0.009	0.048	0.007
Residual Std. Error	4.394	4.255	0.027	0.100	46.746	0.017	0.488
(d. f.)	(1,410)	(1,410)	(918)	(1,220)	(1,386)	(1,468)	(1,468)
F Statistic	56.06 ***	113.38 ***	1.74 **	1.62 **	0.76	15.03 ***	12.04 ***
(d. f.)	(23; 1,410)	(23; 1,410)	(23; 918)	(23; 1,220)	(23; 1,386)	(23; 1,468)	(23; 1,468)

*Table 19.1-19.3 presents a regression on each market- and operating performance measure for a 1, 3, and 5 years. The dependent variables are regressed on each of the strategies, treating the diminutive strategy as a benchmark. Control variables are included in the regression to further assess the isolated effect of M&A strategy with White's robust standard errors. Significance level: * = 10%, ** = 5%, *** = 1%.*

7.3.2 Independent- and control variables

The independent strategy variables – programmatic (PR), large deal (LD), and selective (SL) – indicate that the impact of M&A strategy seems to persist even after controlling for these confounding variables, albeit with a varying significance level across different event windows and performance measures. The programmatic and selective strategy indicate highly significant outperformance in terms of market returns for all event windows in comparison to the diminutive strategy, serving as the benchmark. The large deal strategy on the other hand has no significant outperformance in the 1-year regression. However, within the longer 3- and 5-year windows, a significant outperformance of the large deal acquirers is apparent in comparison to the diminutive strategy. Interestingly, although all acquisition strategies indicate a positive association with most of the operating performance measures, when compared to a diminutive strategy, the programmatic and selective strategy provides the most notable abnormal operating performance in the 1- and 3-year regressions, while the large deal strategy seems to provide more sustained long-term performance in the 5-year regression. The following sections will discuss the effect of the alternative value drivers introduced in the regressions. Each control variable will be examined separately, ultimately providing a basis for Hypothesis 6 of the thesis.

7.3.2.1 Relatedness

The relationship for both relatedness variables exhibits a uniform association with market performance across all time horizons, with bidder-target (RELATEDNESS_1) indicating a positive relationship and target-target (RELATEDNESS_2) indicating a negative relationship. Bidder-target relatedness indicates a significant and positive relationship on market performance for the 3- and 5-year horizon. Interestingly, target-target relatedness suggests an opposite relationship, calling the learning hypothesis into question which would predict a positive relationship between the performance measures and target-target relatedness. However, the negative association between performance and target-target relatedness is only significant when adopting a 5-year period and narrowingly so at the 10% significance level.

Interestingly, the direction of the relatedness variables are more ambiguous when applied to operating performance. The main argument for a positive relationship between relatedness and performance is grounded in the proposition that it allows for a faster and more effective integration as the bidder company either has prior experience dealing with a similar company or already possess similar resources and capabilities as the target firm, hence being able to better utilize them (Nicholson & Salaber, 2013). Accordingly, relatedness should intuitively be most notable when measuring operating performance. However, as evident from the regressions, no significant relationship is seen in the operating measures from either of the relatedness variables. Moreover, the coefficients on both relatedness variables provide no unanimous direction of the relationship when assessing operating performance.

7.3.2.2 Cross-border transactions

The 3- and 5-year regressions indicate a positive relationship between market performance and cross-border transactions, although nonsignificant at the 10% level. However, there is no unanimous direction for the CROSS_BORDER variable in the 1-year regression, which may be interpreted as no particular investor preference for cross border transactions in a Nordic context. Consistent with the regression results, prior research has yielded inconsistent results regarding cross-border transactions (Very et al., 1997). However, prior research from the European market suggests that cross-border transactions do have a negative effect on value creation (c.f., Danbolt, 1995; Martynova & Renneboog, 2006; Rose et al., 2017). Notwithstanding the regression implies a slight positive relationship on market performance, although nonsignificant at the 10% level. A possible explanation relates to the high proportion of intra-Nordic transactions. The proposed benefits of engaging in cross-border transactions, such as escaping entry barriers, leveraging differences in country-specific risk, and exploiting market imperfections, may not be realized to the same extent in a Nordic context due to a high degree of similarity between the countries.

Turning to operating performance, no clear direction can be drawn on the effect of cross-border transactions. Although the 1-year regression suggests a significant negative relationship

between cross border transactions and ΔAROA at the 10% level, no other CROSS_BORDER variables suggest any significant contribution. Moreover, the direction of the relationship varies across operating measures. Overall, there is little to suggest that cross-border transactions provide any significant contribution to value creation in a Nordic context, although the effect is slightly positive for the longer measurement periods of 3 and 5 years. However, this result may be connected to the nature of Nordic transactions rather than the underlying value proposition of cross-border transactions as there is a high degree of intra-nordic transactions, hence making the distinction between domestic and cross-border transactions weak given the countries' institutional and cultural homogeneity.

7.3.2.3 Means of payment

As evident from the regression, the CASH variable implies little significant association with market- or operating performance. Although means of payment has been suggested to significantly influence value creation in M&As, scholars postulate that this effect is grounded in the bidding characteristics of domestic versus cross-border transactions (Wansley et al., 1983; Dewenter, 1995; Danbolt, 2004). Mirroring this, the correlation matrix in Appendix B.1 suggests a slight correlation between CROSS_BORDER and CASH. However, this is not deemed to have a meaningful impact on the significance of either variable. Ultimately, the results on the direction of the CASH variable are inconsistent, especially for market performance. Meanwhile, the majority of operating performance regression does seem to suggest a positive relationship between cash offers and operating performance, although insignificant for all regressions.

Hence, there is little significant evidence that cash offers can be linked to superior performance in a Nordic context even though the direction of the relationship supports research in other markets (e.g., Travlos 1987; Loughran & Vijh 1997; Draper & Paudyal 1999; Walker 2000; Andrade et al., 2001; Cosh & Guest 2001; Linn & Switzer 2001; Antoniou & Zhao, 2004; Conn et al., 2005; Dong et al. 2006; Martynova & Renneboog, 2006). However, the effect of means of payment is also found to be impacted by the overall economic conditions (Ismail, 2008; Shleifer & Vishny, 2003; Erel et al., 2012). The significance of the CASH variable may therefore be impacted by the relatively long period adopted in this study, incorporating a range of economic conditions. Overall, the regressions do not indicate any significant superior performance from cash deals in general.

7.3.2.4 Industry context

All industry varíables are, as previously discussed, benchmarked against utilities to avoid multicollinearity. Given the paper's industry-adjusted methodology, fundamental differences in performance across industries should largely be accounted for in the abnormal returns, except for BHAR_2, which is benchmarked against a broad market index. Hence, besides BHAR_2, the industry variables measure the relative performance of conducting acquisitions in a particular industry, separate from the fundamental differences in performance across industries. As evident from the market performance regressions, this distinction is important to make since the significance of the

industry in which the acquirer operates essentially dissipates when benchmarking based on industry. The industry variables indicate some differences in the market performance of acquirers depending on their industry. However, neither of the event windows suggest a significant impact of industry on BHAR_1. In contrast, the BHAR_2 suggests some impact from industry context. However, the significance of industry on the BHAR_2 regression likely reflects fundamental differences in performance across industries rather than measuring the performance of M&A in a specific industry.

The operating measures do however suggest some differences in acquisition performance across industries. The vast majority of INDUSTRY variables exhibit a negative coefficient, indicating that acquisitions in the utilities industry, constituting the benchmark, performs better. Apart from utilities, the relative performance between industries is relatively equal. Meanwhile, it should be noted that the number of transactions in the utilities industry is the lowest in the data set and that the utility benchmark index consists of relatively few firms. These two factors combined will naturally increase the uncertainty of the results and hence, the findings should be carefully interpreted. Nevertheless, the varying INDUSTRY coefficients certainly suggest differences in the effect on value creation – both in terms of market- and accounting performance.

7.3.2.5 Macroeconomic context

Perhaps one of the most well-covered value drivers in M&A literature is the impact of the macroeconomic environment. As evident from the regressions there is a substantial and significant impact imposed by the overall state of the economy. Due to the interconnectedness of today's financial markets, it is reasonable that this effect is prevalent in a Nordic context as well. MACRO_1 suggests that acquisitions during economic recessions, especially for the shorter periods of 1- and 3 years, have a significant negative effect on market performance. Interestingly, the direction of the MACRO_1 variable changes to positive for the 5-year regression, although it is insignificant at the 10% level. While the positive relationship is only found in the 5 year regression, it does resonate with Rhodes and Stelter (2009), proposing that acquisitions made during a recession tend to perform relatively better. Contrary to the majority of market performance variables, MACRO_1 exhibits a significant positive relationship with ΔAROA across all event windows. Hence, fundamental operating performance seems to improve from acquisitions made during an economic contraction, mirroring the findings by Wann and Lamb (2016) and Rhodes and Stelter (2009). Furthermore, although the vast majority of operating measures indicate a positive coefficient on MACRO_1, only ΔAROA exhibits a high level of significance.

The MACRO_2 and MACRO_3 variables indicate that the timing within a booming market has a significant impact on both market- and operating performance, albeit to varying degrees. The intra-wave difference in performance is something that has been distinguished in recent literature (c.f., Carow et al., 2004; McNamara, 2008), wherein the regressions indicate a similar result when applied to the Nordic market. The MACRO_2 variable, measuring the effect of late-stage acquisitions,

indicates a significant negative effect on the 1- and 3-year regression when measuring BHAR_1. On the contrary, MACRO_3, measuring the effect of early-stage acquisitions, shows a unified positive relationship on market performance, hence mirroring the findings of McNamara (2008), although the results of this paper are insignificant for the 3- and 5-year event windows. The operating performance displays little significance across the MACRO_2 and MACRO_3 variables. However, an interesting finding is the inverse direction exhibited by the MACRO_2 and MACRO_3 variable on ΔAROA when compared to the impact on BHAR_1 and BHAR_2. This result may reflect that firms have more streamlined operations at the end of an economic expansion and thus exhibit higher ROA. Meanwhile, uncertainty is higher following a recession whereby a firm may operate at excess capacity before adapting its operations to the new environment, thereby being able to fully utilize its acquired resources. In this sense, the market is typically faster to react to new environments, which could explain the inverse impact on market- and operating performance.

In line with the findings of Alexandridis et al. (2017), MACRO_4 suggests that acquisitions pre-GFC exhibited lower abnormal returns in terms of both market- and operating performance. Interestingly, the regressions indicate that the significance and strength of the negative MACRO_4 coefficient becomes stronger in line with the length of the measurement period. However, it should be noted that many of the deals encompassed in the pre-GFC dummy include transactions made until the end of the GFC. Hence, the 3- and 5-year regression will naturally encompass some of the downturn of the GFC whereas post-GFC transactions have not experienced a downturn of similar magnitude. Readers should therefore be careful with interpreting the MACRO_4 results even though it appears to be highly significant.

7.3.2.6 Aqcuirer financial characteristics

Perhaps most noteworthy from the regression results, is the significance of the acquirer financial characteristics (i.e., SIZE and VALUATION). The SIZE variable suggests a clear negative association between acquirer size and value creation. This result may be driven by investor sentiment, associating acquisitions from large firms as a sign of dissipating internal growth opportunities. However, part of the result may also lie in the systematic tendency of smaller firms to outperform in the long run – a foundation of the Fama-French three-factor model (Fama & French, 1993). As performance is benchmarked against an index, companies constituting the benchmark will exhibit a range of different sizes, whereby the SIZE variable may not only measure the impact of making acquisition as a sizable company but also the phenomenon of smaller firms generally outperforming larger firms.

The VALUATION variable, measuring the book-to-market value of the acquirer, indicates a minor impact on both market- and operating performance. Herein, the findings are highly significant across all event windows for market performance. Turning to operating performance, the impact of the VALUATION variable is mostly significant for the 3-year regression and seems to indicate a negative association across the majority of the regressions. Similar to the SIZE variable, the

VALUATION variable is constructed based on the theoretical underpinnings of the Fama-French three-factor model (Fama & French, 1993), which is argued to explain the expected return of assets. However, the VALUATION variable has a relatively small impact on the performance measures, which is intuitive since the benchmarks are set against industry peers. Hence, under the assumption that similar companies tend to exhibit similar valuation multiples, the difference in valuation between acquirers is already, to some extent, accounted for in the benchmark. Furthermore, due to the inconsistent sign of the VALUATION coefficient, and since the impact of VALUATION is only visible to the millionth of a decimal, it is difficult to conclude that valuation has any meaningful impact on value creation in M&A.

7.3.3 Sub-conclusion

In sum, the impact of a program-level acquisition strategy is suggested to be a significant value driver in M&A – even after controlling for alternative drivers. Nonetheless, it has also been shown that the examined control variables provide a significant effect on market- and operating performance, yet to varying degrees. We refer to Appendix C for the full regression result. While SIZE, VALUATION and the MACRO variables provide significant results across most of the event windows, the regressions indicate that RELATEDNESS_1 is mainly significant for the 3-year window. Meanwhile, little evidence suggests that RELATEDNESS_2, CASH and CROSS_BORDER have any significant impact on market- and operating performance in a Nordic context. Given the above findings, we strongly reject Hypothesis 6a that *The defined alternative value drivers have no effect on abnormal market returns across M&A strategies.* In a similar vein, we weakly reject Hypothesis 6b that *The defined alternative value drivers have no effect on abnormal profitability across M&A strategies.* Rather, it is concluded that there are alternative value drivers having an effect on the relative market- and operating performance of different M&A strategies.

7.4 Summary of results

This section presents a summary of the results, wherein Table 20 outlines the outcome pertaining to each hypothesis. The table includes the authors' decision to accept or reject each hypothesis alongside the overall indicated relative performance of each M&A strategy. A more detailed yet accessible overview of the positive or negative outcomes for each performance measure and event window, along with its statistical significance, is available in Appendix A.4.

Table 20 *Summary of event study results and hypotheses*

Hypothesis	Sample	Description	Hypothesis support	Overall indicated relative performance
		Market performance		
Hypothesis 1a	Total sample	M&A creates no long-term abnormal market returns to the acquirer	Reject	n.a.
Hypothesis 2a	Programmatic	The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies	Reject	Positive
Hypothesis 3a	Large deal	The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies	Accept	Positive
Hypothesis 4a	Selective	The long-term abnormal market return of the selective strategy is nondifferent to that of other strategies	Reject	Negative
Hypothesis 5a	Diminitive	The long-term abnormal market return of the diminutive strategy is nondifferent to that of other strategies	Reject	Negative
Hypothesis 6a	Total sample	The defined alternative value drivers have no effect on abnormal market returns across M&A strategies	Reject	n.a.
		Operating performance		
Hypothesis 1b	Total sample	M&A creates no long-term abnormal market returns to the acquirer	Reject	n.a.
Hypothesis 2b	Programmatic	The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies	Reject	Negative
Hypothesis 3b	Large deal	The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies	Accept	Positive
Hypothesis 4b	Selective	The long-term abnormal market return of the selective strategy is nondifferent to that of other strategies	Accept	Positive
Hypothesis 5b	Diminitive	The long-term abnormal market return of the diminutive strategy is nondifferent to that of other strategies	Accept	Negative
Hypothesis 6b	Total sample	The defined alternative value drivers have no effect on abnormal profitability across M&A strategies	Reject	n.a.

The hypothesis support is reject (accept) if the majority (minority) of mean abnormal returns are significant. The overall indicated relative performance is positive (negative) if the majority (minority) of results are positive (negative).

PART VI

CONCLUSION

8. CONCLUSION

The literature on M&A is extensive, particularly within an international context. However, the prevailing discourse often casts M&A in a negative light when discussing the long-term value created for acquiring firms. Moreover, a conspicuous scarcity of research is present in the Nordic region, specifically concerning the relative performance of different M&A strategies. This gap raises questions about the causal relationship between value creation and M&A activity in the Nordics and, more notably, the most appropriate strategy to adopt for sustained value creation. Herein, the paper has aimed to study the potential existence of a positive and unidirectional causal relationship between firms' task-level integration performance, transaction-level performance, and long-term market- and operating performance, as postulated by Zollo and Meier (2008). Thereby, provide a framework to assist acquiring managers in their decision-making processes and address an existing research gap in contemporary academia. To this end, the thesis endeavors to provide an answer to the following research question: *How does M&A strategy affect long-term acquirer value creation?* To examine the phenomenon in question, an event study was carried out, with abnormal stock returns and profitability serving as proxies for value creation. The event study findings were subsequently supported through a multiple regression, which facilitated the investigation of additional value drivers and ensured robustness of the results. The study was conducted on a sample of 2,328 transactions – divided between 548 publicly traded Nordic firms – completed between January 2001 and December 2022.

The thesis provides conflicting evidence of acquirer value creation in the Nordic region. Holistically, the results for the total sample of acquirers suggest that M&A activity, on average, creates value in terms of stock market performance while simultaneously functioning as a value-depleting mechanism in terms of operating performance. Nevertheless, when transactions are considered in isolation, the value creation generated by M&A yields diverging results. Specifically, the median returns indicate that both market and operating performance exhibit a value-depleting impact from M&A activity. Throughout the analysis, several explanations are proposed to account for these inconsistent findings, drawing upon both neoclassical and behavioral theories.

Apart from examining the overall value creation of M&A activities, the authors have deemed it relevant to explore any significant differences between distinct M&A strategies. To this end, the authors identified four strategies based on strategic patterns linked to transaction frequency and relative size. The findings of the market-based event study indicate that the *Programmatic* strategy creates significant value, whereas the *Selective* and *Diminutive* strategy deplete value. In this connection, the *Large deal* strategy appears to create value, although the results are insignificant. When studying relative value creation from the lens of operating performance, the results differ. Herein, the *Programmatic* strategy indicates significant value depletion. Although the findings, on average, are insignificant, the *Diminutive* strategy looks to deplete value, whereas the *Large deal* and *Selective* strategy create value. The analysis postulates explanations to elucidate the findings,

encompassing a wide range of theories drawn from both the strategy and organizational literature and the finance and accounting literature.

Overall, the research findings suggest that the *Large deal* strategy exhibits the greatest potential for value creation, as it is the sole strategy to demonstrate value creation across both performance dimensions. The *Programmatic* strategy is ranked second, exhibiting significant value creation from a market perspective. Followingly, the *Selective* strategy is ranked third, with positive, albeit insignificant, value creation from an operational perspective. Finally, the *Diminutive* strategy appears to create the least value, as both market- and operating performance indicate value depletion. As follows, the research question has been addressed, and it is concluded that M&A strategy significantly affects long-term acquirer value creation. It should be noted that the ranking is based on average results. The findings suggest that the impact of M&A strategy on long-term acquirer value creation varies across different event windows and the median, i.e., transaction-level performance differs from the mean in some strategies. Furthermore, a variation in the value-creating effect exists when assessed through market- and operating performance perspectives.

The authors were further guided by prior literature to examine a selection of recognized value drivers in M&A, thereby providing further insights into the sources of value creation. Altogether, the findings suggest that certain macro-, deal- and firm-specific value drivers affect the relative value creation of different M&A strategies – both when studying value creation from a market- and operating performance perspective. Herein, acquirer size, acquirer valuation, macroeconomic context, and bidder-target relatedness seem to have a significant impact on the relative abnormal performance across different strategies. Nonetheless, after controlling for these variables, the long-term abnormal performance of the paper's strategies still persists, albeit to varying degrees of significance.

In summary, this dissertation provides novel insights. It contributes to the existing literature by analyzing the value creation potential of distinct M&A strategies while expanding the empirical findings on value creation in the Nordic region. Notably, this study advances prior research and offers practical implications as it suggests that specific M&A strategies may have a higher potential for long-term value creation compared to others. The paper concludes by presenting limitations of the study and proposing potential avenues for future research to enhance the external validity of the findings.

8.1 Limitations

Besides methodological limitations highlighted in Section 6.5, the research project has been limited by the thesis's requirements, directives, and overall scope. Accordingly, the authors have delimited the project to encompass the areas deemed most pertinent to the research question, as explicated in Section 1.4. Additional limitations present within this paper's findings encompass the selected sample, the strategy typology, and impact from idiosyncratic events. First, the firms analyzed in this study were chosen from the pool of Nordic transactions by public companies, from 2001 to 2022.

Consequently, the outcomes derived from this study cannot be generalized to other periods, different geographical regions, or private markets. Second, despite adopting a positivist philosophical stance, the authors have relied on a conceptual framework that presents M&A strategy as a two-dimensional construct acting as a proxy for other variables mentioned in the literature review. However, it is acknowledged that other factors are relevant to firms' overarching strategy. M&A strategies are complex, rests upon multiple contingencies, and incorporates a near infinite number of aspects. Consequently, the typology of strategic patterns that underpins the thesis's conceptual framework may be subject to limitations. There is certainly room for adding additional dimensions in which acquirers can be divided into groups based on e.g. strategic rationale, top management motivation, and transaction network features. Last, when making inferences based on the obtained results, it is imperative to bear in mind that market and operating performance anomalies may stem from idiosyncratic events unrelated to the transaction. Moreover, acquirers with multiple events that overlap within the event window can give rise to cross-sectional dependence, which may result in an overestimation of significance levels. Although the methodological framework is based on existing research, it is recognized that the findings can only offer a partial depiction of value creation in M&A.

8.2 Future research

Based on the findings in this thesis, assessing an acquirers program-level acquisition performance should receive additional attention when investigating the M&A phenomenon. The authors believe that this thesis narrows the research gap surrounding Nordic M&A, but more importantly highlights the interesting findings from adopting a process perspective when looking at M&A performance instead of treating M&A as an isolated occurrence. Although the authors are confident that a program-level acquisition behavior is relevant in explaining the conflicting research, the limited nature of this thesis have left interesting questions open for further investigation. First, to verify the results of this thesis, replicating the study for a larger market such as Europe in its entirety or the US would be preferable. Moreover, the authors propose conducting a similar study within private markets. This would enable further testing of generalizability and facilitate exploration into whether comparable findings emerge. To further assess the transferability of the findings, the authors suggest distinguishing between small-, mid- and large-cap acquirers as the regression suggests this to impact the performance of the strategies.

Furthermore, the observed difference between the average (i.e., portfolio-level returns) and median (i.e., transaction-level returns) raises intriguing questions about the fundamental drivers of value creation in each strategy. Hence, an examination of the underlying determinants of value creation in each strategy would be valuable. Such examination could entail an investigation into how different value drivers, such as relatedness, cross-border transactions, size, and valuation drives the performance of specific strategies. This paper has investigated the effect on the total sample and ensured the robustness of each strategy's performance measure. However, the proposed research could

potentially provide insights into why certain strategies are more likely to generate value than others, as well as the underlying capabilities that contribute to M&A success. Last, a more comprehensive strategy formulation process where additional dimensions of acquisition strategy are considered will likely yield more consistent findings. For instance, breaking up acquirers into more specific groups, such as programmatic large deal acquirers, would provide managers with additional insights that can guide acquisition behavior based on firm-specific characteristics.

PART VI

BIBLIOGRAPHY & APPENDIX

9. BIBLIOGRAPHY

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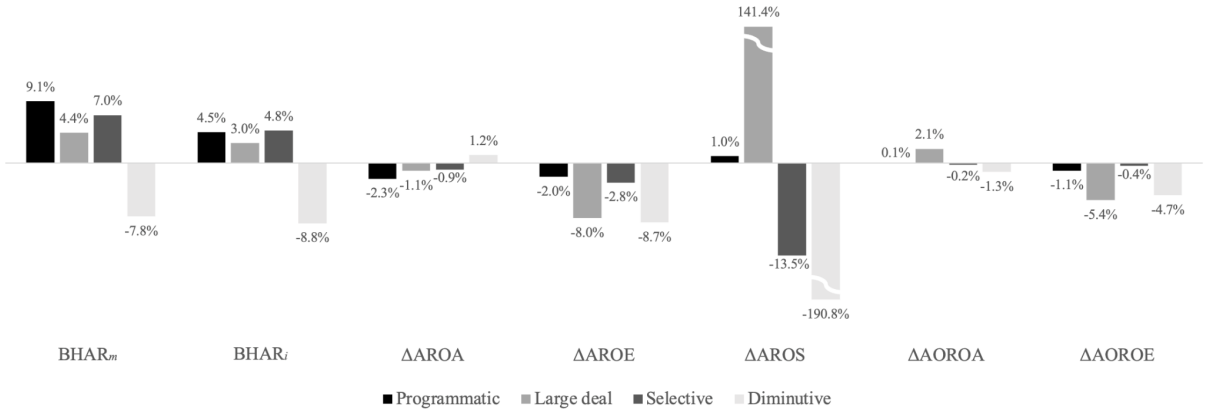
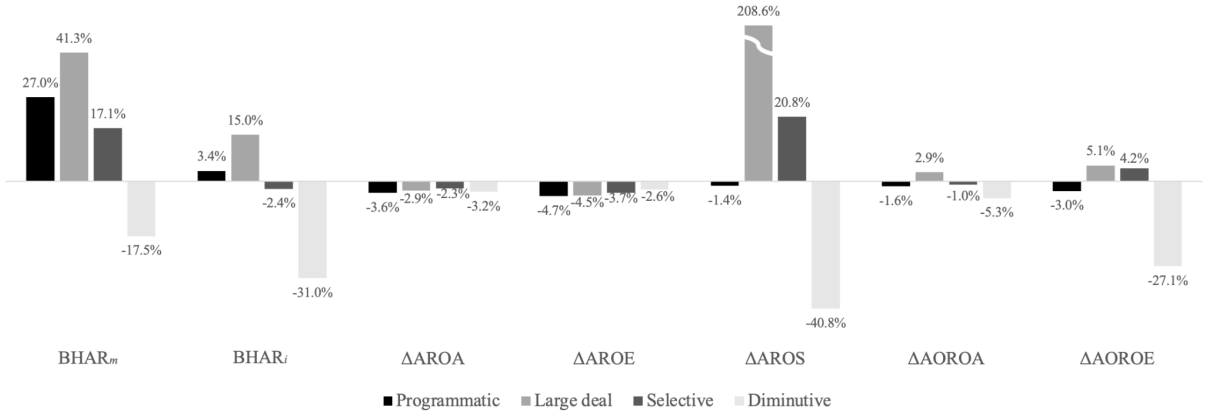
10. APPENDIX

APPENDIX A - Event study results

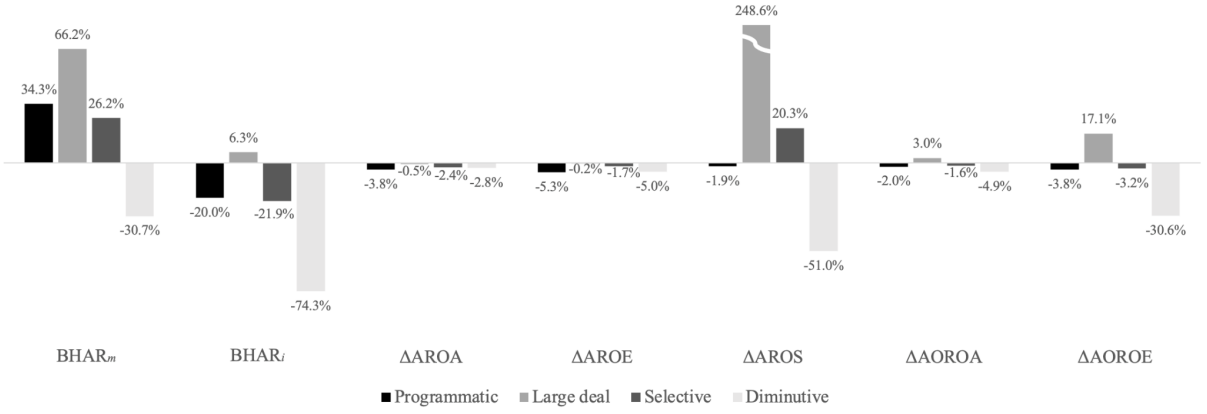
Appendix A.1 *Market- and operating performance over a 1-year event window for different M&A strategies*



Appendix A.2 *Market- and operating performance over a 3-year event window for different M&A strategies*



Appendix A.2 *Market- and operating performance over a 5-year event window for different M&A strategies*



Appendix A.1-A.3 presents the market-adjusted buy-and-hold abnormal return ($BHAR_m$), industry-adjusted buy-and-hold abnormal return ($BHAR_i$), as well as industry-adjusted change in return on assets (ROA), return on equity (ROE), return on sales (ROS), operating return on assets (OROA), and operating return on enquiry (OROE) for different strategies.

Appendix A.4 *Detailed summary of event study results and hypotheses*

Hypothesis	Sample	Description	Results			Hypothesis support	Overall indicated relative performance
			Event study [0;1]	Event study [0;3]	Event study [0;5]		
Market performance							
Hypothesis 1a	Total sample	M&A creates no long-term abnormal market returns to the acquirer	$BHAR_m$ (+)* $BHAR_i$ (+)*	$BHAR_m$ (+)* $BHAR_i$ (+)	$BHAR_m$ (+)* $BHAR_i$ (+)*	Reject	n.a.
Hypothesis 2a	Programmatic	The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies	$BHAR_m$ (+)* $BHAR_i$ (+)*	$BHAR_m$ (+)* $BHAR_i$ (+)	$BHAR_m$ (+)* $BHAR_i$ (+)*	Reject	Positive
Hypothesis 3a	Large deal	The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies	$BHAR_m$ (-) $BHAR_i$ (-)	$BHAR_m$ (+)* $BHAR_i$ (+)	$BHAR_m$ (+)* $BHAR_i$ (+)	Accept	Positive
Hypothesis 4a	Selective	The long-term abnormal market return of the selective strategy is nondifferent to that of other strategies	$BHAR_m$ (+)* $BHAR_i$ (+)*	$BHAR_m$ (-)* $BHAR_i$ (-)	$BHAR_m$ (-)* $BHAR_i$ (-)*	Reject	Negative
Hypothesis 5a	Diminitive	The long-term abnormal market return of the diminutive strategy is nondifferent to that of other strategies	$BHAR_m$ (-) $BHAR_i$ (-)*	$BHAR_m$ (-)* $BHAR_i$ (-)*	$BHAR_m$ (-)* $BHAR_i$ (-)*	Reject	Negative
Hypothesis 6a	Total sample	The defined alternative value drivers have no effect on abnormal market returns across M&A strategies	n.a.	n.a.	n.a.	Reject	n.a.
Operating performance							
Hypothesis 1b	Total sample	M&A creates no long-term abnormal market returns to the acquirer	ΔAROA (-)* ΔAROE (-) ΔAROS (-) ΔAOROA (+) ΔAOROE (-)	ΔAROA (-)* ΔAROE (-)* ΔAROS (+) ΔAOROA (-)* ΔAOROE (-)	ΔAROA (-)* ΔAROE (-)* ΔAROS (+) ΔAOROA (-)* ΔAOROE (-)*	Reject	n.a.
Hypothesis 2b	Programmatic	The long-term abnormal market return of the programmatic strategy is nondifferent to that of other strategies	ΔAROA (-)* ΔAROE (+)* ΔAROS (+)* ΔAOROA (+) ΔAOROE (+)	ΔAROA (-)* ΔAROE (-)* ΔAROS (-)* ΔAOROA (-)* ΔAOROE (-)*	ΔAROA (-)* ΔAROE (-)* ΔAROS (-)* ΔAOROA (-)* ΔAOROE (-)*	Reject	Negative
Hypothesis 3b	Large deal	The long-term abnormal market return of the large deal strategy is nondifferent to that of other strategies	ΔAROA (+) ΔAROE (-) ΔAROS (+) ΔAOROA (+) ΔAOROE (-)	ΔAROA (+)* ΔAROE (-) ΔAROS (+) ΔAOROA (+)* ΔAOROE (+)	ΔAROA (+) ΔAROE (+) ΔAROS (+) ΔAOROA (+)* ΔAOROE (+)*	Accept	Positive
Hypothesis 4b	Selective	The long-term abnormal market return of the selective strategy is nondifferent to that of other strategies	ΔAROA (+)* ΔAROE (+) ΔAROS (-) ΔAOROA (+) ΔAOROE (+)	ΔAROA (+)* ΔAROE (+)* ΔAROS (-) ΔAOROA (+)* ΔAOROE (+)	ΔAROA (+)* ΔAROE (+) ΔAROS (-) ΔAOROA (-)* ΔAOROE (-)	Accept	Positive
Hypothesis 5b	Diminitive	The long-term abnormal market return of the diminutive strategy is nondifferent to that of other strategies	ΔAROA (+) ΔAROE (-) ΔAROS (-) ΔAOROA (-) ΔAOROE (-)	ΔAROA (-) ΔAROE (+) ΔAROS (-) ΔAOROA (-)* ΔAOROE (-)	ΔAROA (+) ΔAROE (-) ΔAROS (-) ΔAOROA (-)* ΔAOROE (-)	Accept	Negative
Hypothesis 6b	Total sample	The defined alternative value drivers have no effect on abnormal profitability across M&A strategies	n.a.	n.a.	n.a.	Reject	n.a.

Results in parentheses indicate positive abnormal return (+) *or negative abnormal return* (-)*. * = Significant on at least a 10% level. The hypothesis support is reject (accept) if the majority (minority) of mean abnormal returns are significant. The overall indicated relative performance is positive (negative) if the majority (minority) of results are positive (negative)*

APPENDIX B - Model Control

Appendix B.1 *Independent regression variables - Correlation matrix*

	PR	LD	SL	DM	CROSS_BORDER	RELATEDNESS_1	RELATEDNESS_2	CASH	SIZE	MACRO_1	MACRO_2	MACRO_3	MACRO_4	VALUATION	INDUSTRY_1	INDUSTRY_2	INDUSTRY_3	INDUSTRY_4	INDUSTRY_5	INDUSTRY_6	INDUSTRY_7	INDUSTRY_8	INDUSTRY_9	INDUSTRY_10	INDUSTRY_11
PR	1.00																								
LD	-0.26	1.00																							
SL	-0.72	-0.29	1.00																						
DM	-0.21	-0.08	-0.24	1.00																					
CROSS_BORDER	0.19	-0.14	-0.06	-0.08	1.00																				
RELATEDNESS_1	0.02	-0.06	0.00	0.01	-0.01	1.00																			
RELATEDNESS_2	0.04	-0.01	-0.02	-0.01	-0.03	0.20	1.00																		
CASH	0.07	-0.17	0.09	-0.12	0.18	0.01	0.00	1.00																	
SIZE	0.46	-0.32	-0.18	-0.18	0.27	0.02	0.01	0.17	1.00																
MACRO_1	0.04	-0.01	-0.02	-0.01	0.01	0.03	0.05	-0.02	0.03	1.00															
MACRO_2	0.07	0.02	-0.05	-0.08	-0.03	0.01	0.02	0.00	0.03	-0.06	1.00														
MACRO_3	0.01	-0.02	-0.00	-0.00	0.01	0.03	0.02	-0.03	-0.02	-0.09	-0.15	1.00													
MACRO_4	0.20	0.01	-0.14	-0.12	-0.02	0.06	0.05	-0.05	0.07	0.34	0.55	-0.02	1.00												
VALUATION	-0.02	-0.01	0.02	-0.01	-0.03	0.01	-0.02	0.01	-0.02	-0.00	-0.01	-0.01	-0.01	1.00											
INDUSTRY_1	-0.03	0.02	0.01	0.01	0.01	-0.02	0.03	-0.04	-0.19	0.01	-0.01	-0.02	-0.02	0.05	1.00										
INDUSTRY_2	-0.19	-0.01	0.16	0.07	0.06	0.01	-0.01	0.01	-0.09	0.01	-0.04	-0.04	-0.05	-0.01	-0.12	1.00									
INDUSTRY_3	-0.14	0.06	0.11	-0.02	-0.07	-0.01	-0.02	0.04	-0.03	-0.03	0.01	0.01	0.01	-0.01	-0.09	-0.07	1.00								
INDUSTRY_4	-0.05	0.12	-0.02	-0.01	0.02	0.01	-0.02	-0.05	0.06	0.02	0.01	-0.02	-0.01	-0.00	-0.08	-0.06	-0.05	1.00							
INDUSTRY_5	-0.13	0.09	0.07	0.02	-0.10	0.01	-0.03	-0.04	0.02	-0.03	-0.02	-0.00	-0.04	-0.00	-0.07	-0.05	-0.04	-0.03	1.00						
INDUSTRY_6	-0.01	-0.02	-0.01	0.05	-0.14	-0.02	0.01	0.01	0.08	0.04	0.01	0.02	0.05	-0.01	-0.12	-0.09	-0.07	-0.06	-0.05	1.00					
INDUSTRY_7	0.20	-0.09	-0.12	-0.04	0.01	0.01	0.01	0.03	0.13	0.00	0.02	-0.01	0.05	-0.01	-0.14	-0.11	-0.09	-0.07	-0.06	-0.11	1.00				
INDUSTRY_8	-0.10	-0.01	0.06	0.09	0.02	-0.03	-0.04	0.03	-0.04	-0.03	-0.01	0.02	-0.07	-0.01	-0.11	-0.08	-0.07	-0.05	-0.05	-0.08	-0.10	1.00			
INDUSTRY_9	0.12	-0.05	-0.05	-0.07	0.01	0.01	0.02	-0.01	-0.04	0.00	0.02	-0.02	-0.02	-0.01	-0.25	-0.20	-0.16	-0.13	-0.11	-0.19	-0.23	-0.18	1.00		
INDUSTRY_10	0.13	-0.00	-0.11	-0.03	0.11	0.01	0.02	0.01	0.14	-0.00	-0.01	0.08	0.07	-0.01	-0.12	-0.09	-0.07	-0.06	-0.05	-0.09	-0.11	-0.08	-0.20	1.00	
INDUSTRY_11	0.01	0.01	-0.01	-0.02	0.02	0.00	-0.02	0.01	0.08	-0.00	0.00	0.02	0.03	-0.00	-0.05	-0.04	-0.03	-0.02	-0.02	-0.04	-0.04	-0.03	-0.08	-0.04	1.00

Appendix B.2 *Breusch-Pagan / Cook-Weisberg test for heteroskedasticity per linear regression*

H0: Constant variance

	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
1 year	1,602.4 ***	2,066.09 ***	6,580.68 ***	530.14 ***	3,124.48 ***	453.72 ***	1,529.01 ***
3 year	865.75 ***	1,191.05 ***	4,099.99 ***	458.67 ***	12,266.69 ***	49.67 ***	679.62 ***
5 year	869.18 ***	1,098.52 ***	3,700.81 ***	1,663.55 ***	10,278.73 ***	0.89	1,376.83 ***

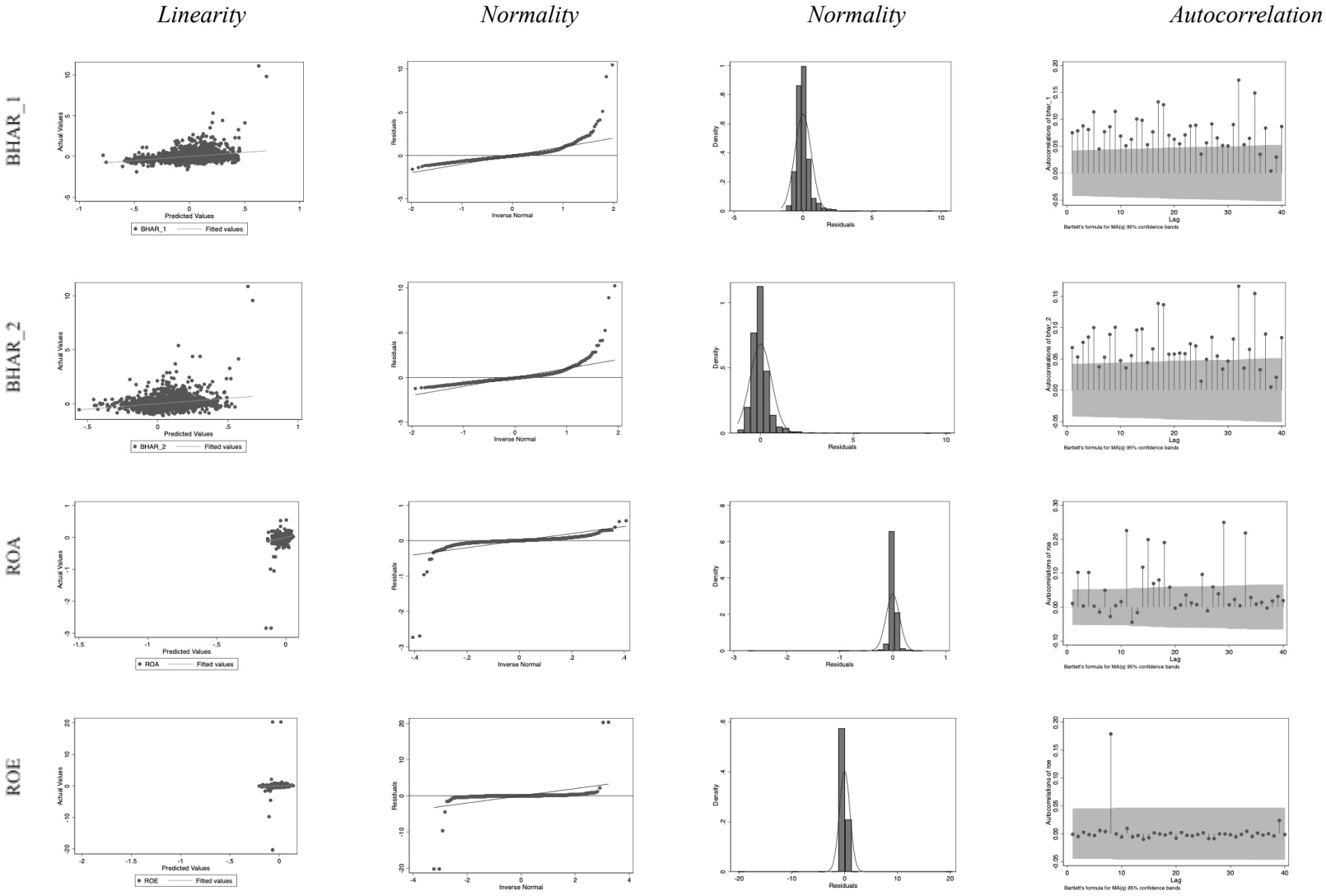
Appendix B.3 *Mean Variance inflation factor (Mean VIF) per linear regression*

	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
1 year	4.05	4.05	3.70	3.98	4.10	4.16	4.16
3 year	4.11	4.11	3.83	4.01	4.19	4.24	4.24
5 year	4.33	4.33	4.1	4.37	4.27	4.40	4.40

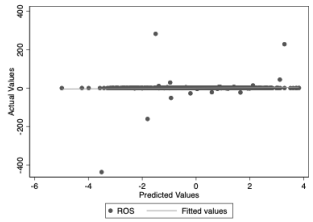
Appendix B.4 *Durbin-Watson test for autocorrelation per linear regression*

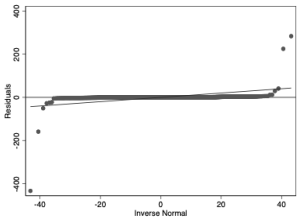
	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
1 year	1.86	1.84	1.05	1.48	1.99	1.94	1.65
	(24; 2,127)	(24; 2,127)	(24; 1,385)	(24; 1,843)	(24; 2,070)	(24; 2,154)	(24; 2,154)
3 year	2.05	2.06	1.08	1.68	1.98	1.89	1.94
	(24; 1,706)	(24; 1,706)	(24; 1,105)	(24; 1,449)	(24; 1,649)	(24; 1,730)	(24; 1,730)
5 year	1.89	1.92	1.09	1.69	1.21	1.91	1.78
	(24; 1,434)	(24; 1,434)	(24; 942)	(24; 1,244)	(24; 1,410)	(24; 1,492)	(24; 1,492)

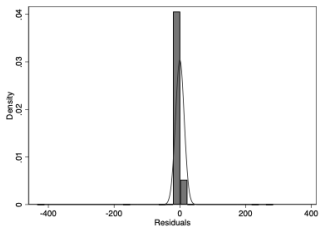
Appendix B.5 *Linearity, Normality, Autocorrelation (1-year regression)*

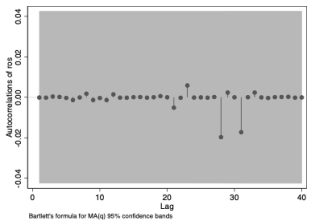


ROS

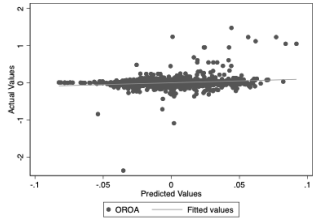


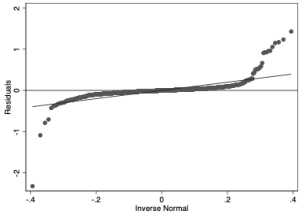


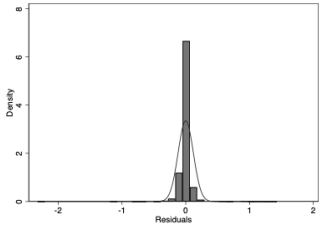


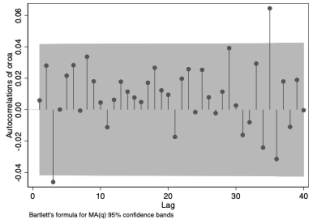


OROA









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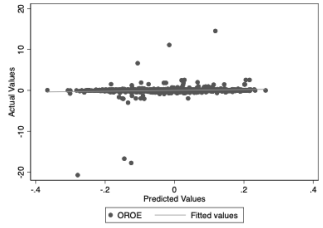
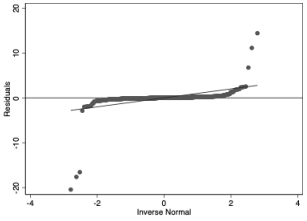
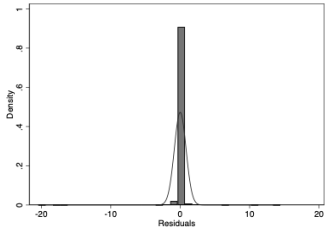
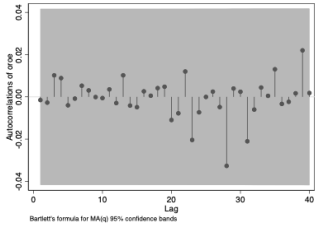
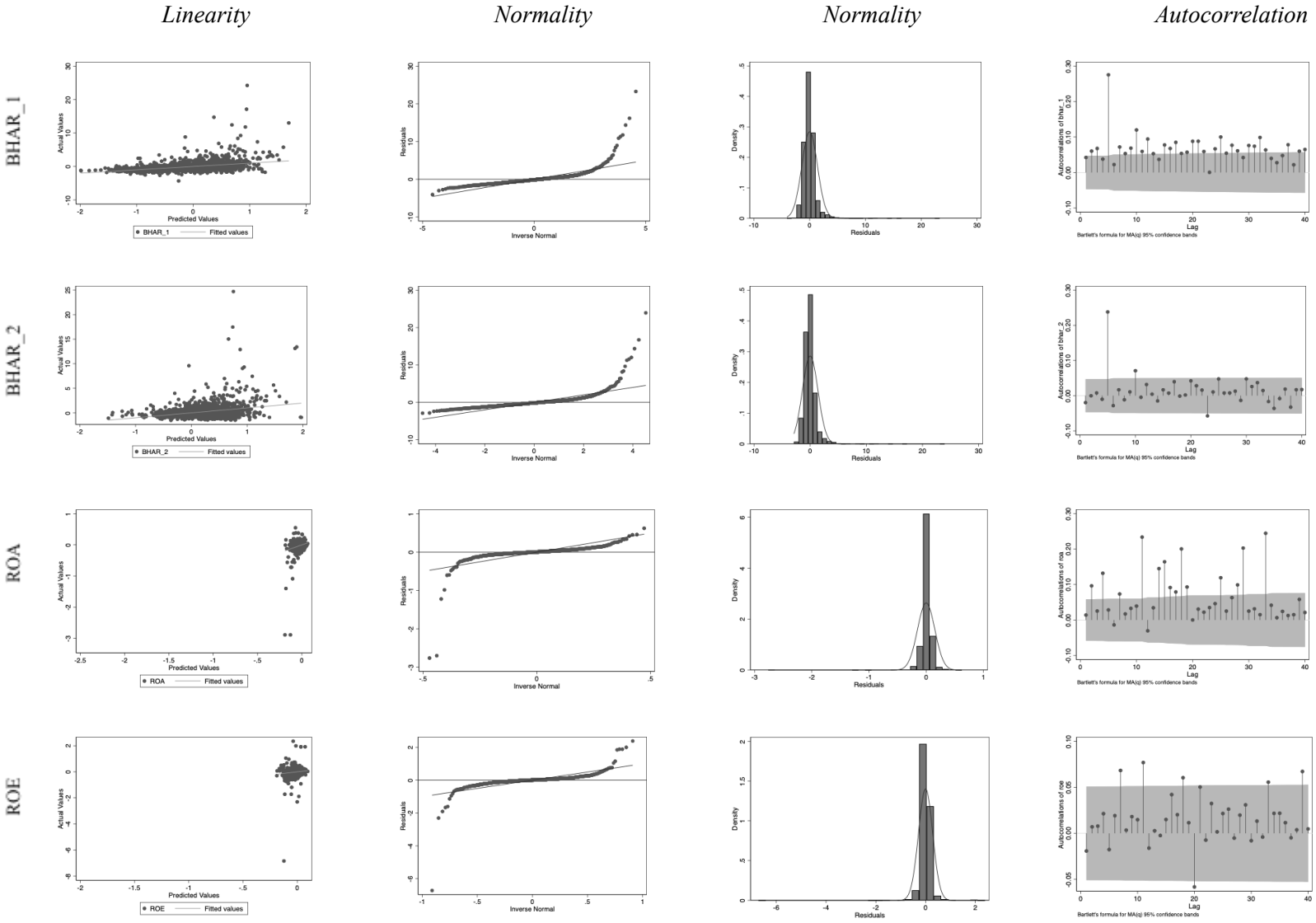








Appendix B.6 *Linearity, Normality, Autocorrelation (3-year regression)*



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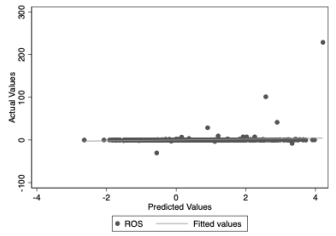
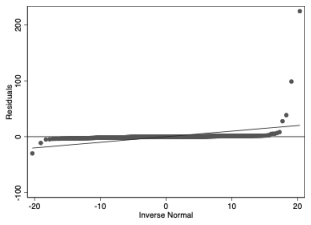
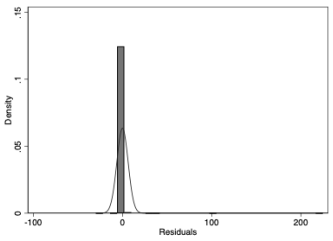
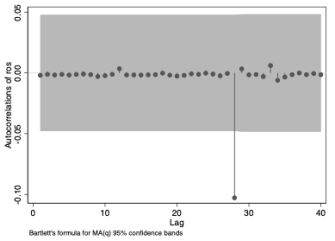
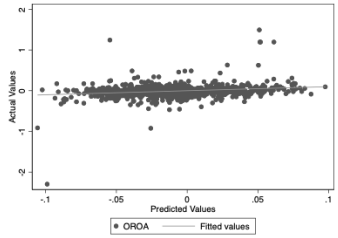


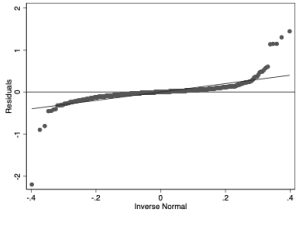


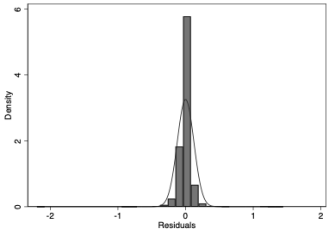


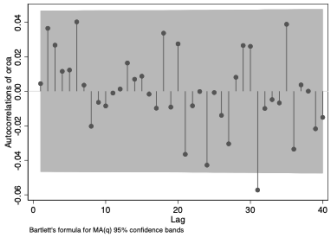


OROA









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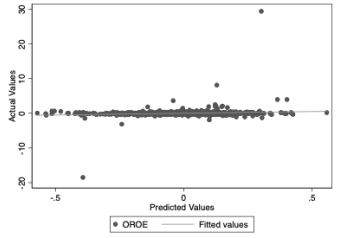
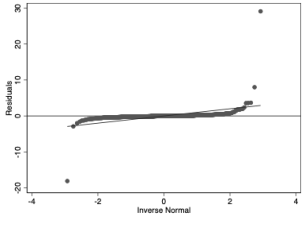
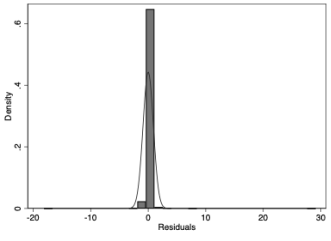
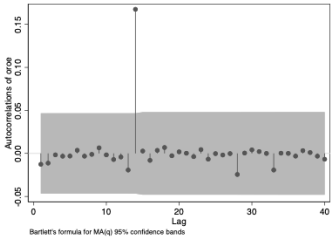
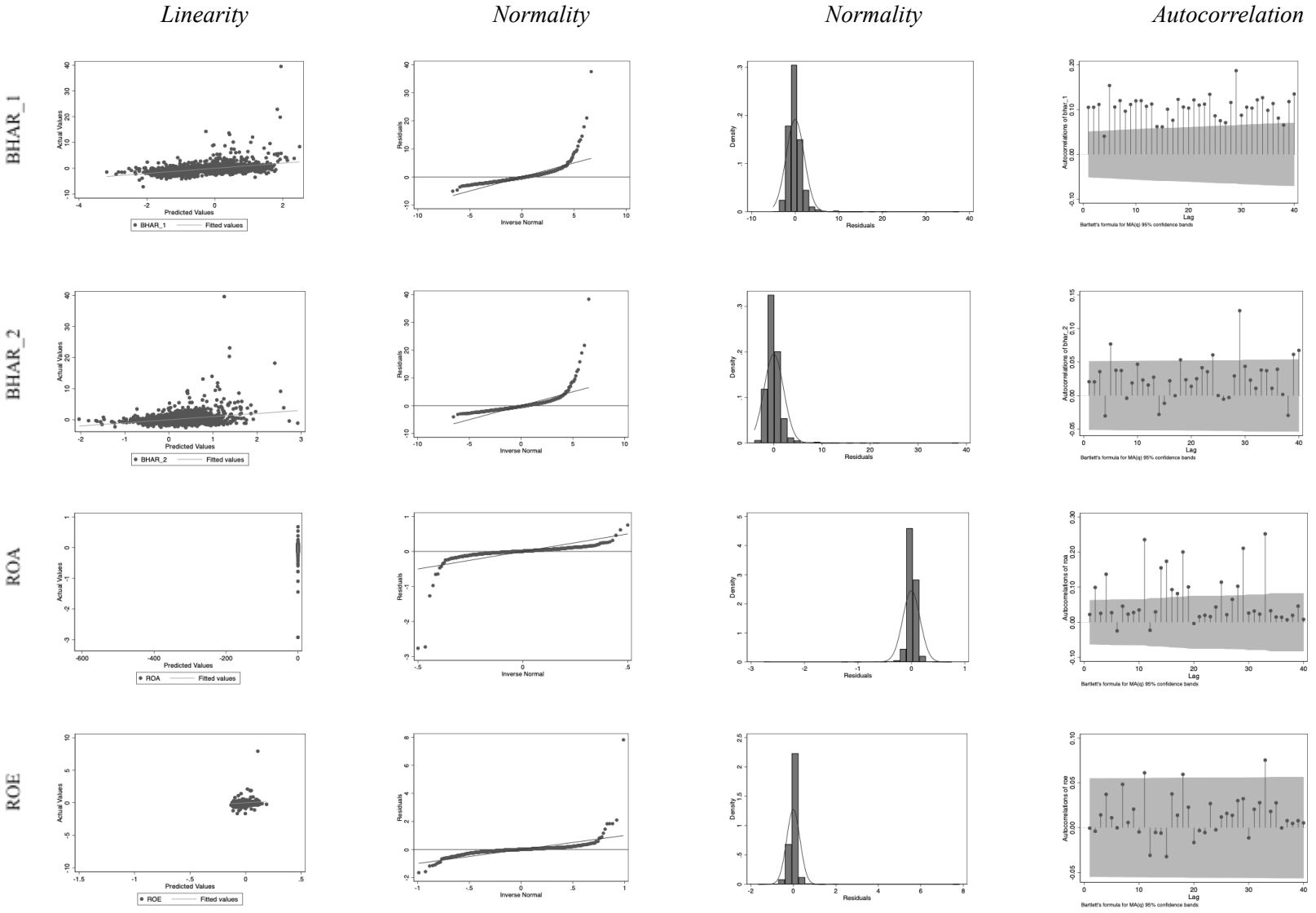








Appendix B.7 *Linearity, Normality, Autocorrelation (5-year regression)*



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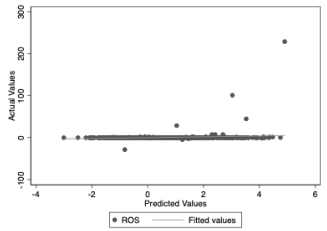

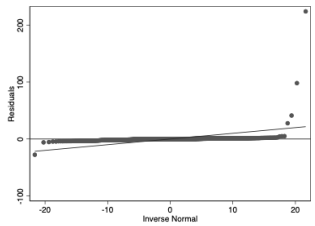

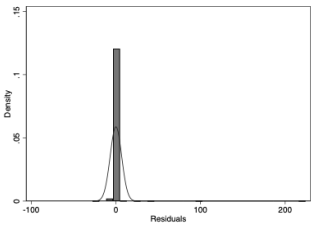

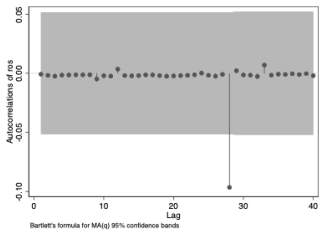

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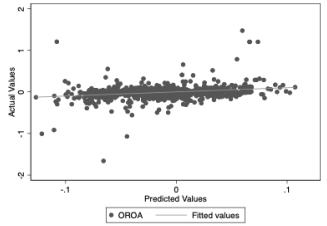
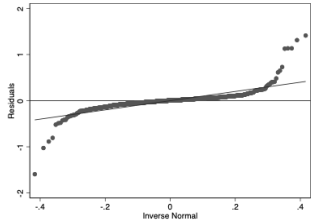
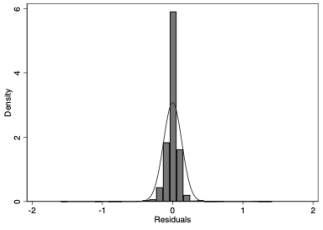
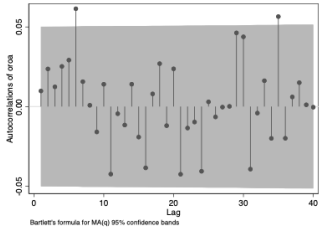
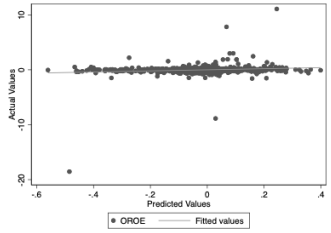


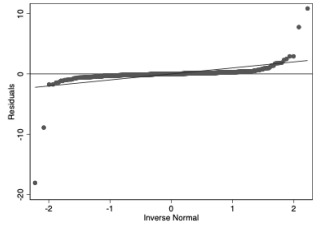


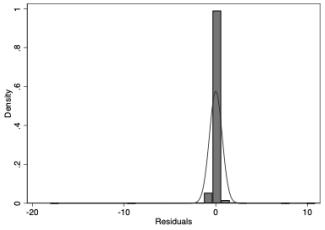


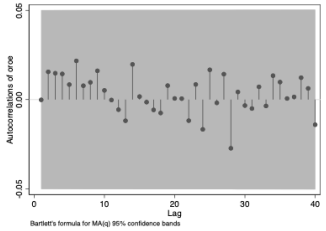


OROE









APPENDIX C - Regression

Appendix C.1 *Full Regression (1-year)*

1 YEAR	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
PR	0.348 ***	0.357 ***	-0.016	0.086	2.528	0.048 **	0.069
	(0.094)	(0.093)	(0.016)	(0.069)	(4.136)	(0.022)	(0.155)
SL	0.212 ***	0.204 ***	-0.015	0.089	2.21	0.0211	0.047
	(0.057)	(0.056)	(0.016)	(0.061)	(4.412)	(0.020)	(0.171)
LD	0.091	0.076	-0.004	0.020	3.523	0.033	-0.000
	(0.069)	(0.068)	(0.022)	(0.096)	(4.595)	(0.026)	(0.200)
CASH	-0.003	0.030	0.037	0.051	-1.288	-0.001	0.103
	(0.073)	(0.072)	(0.034)	(0.057)	(1.705)	(0.021)	(0.133)
SIZE	-0.146 ***	-0.148 ***	0.005	0.009	-0.232	-0.015 ***	-0.033
	(0.036)	(0.035)	(0.006)	(0.058)	(0.343)	(0.005)	(0.026)
VALUATION	-0.000 ***	-0.000 ***	-0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CROSS_BORDER	-0.017	0.002	-0.011	-0.053	-0.479	-0.014 *	0.047
	(0.031)	(0.031)	(0.010)	(0.063)	(0.605)	(0.008)	(0.061)
RELATEDNESS_1	0.032	0.022	-0.014	-0.031	0.482	0.006	0.039
	(0.034)	(0.034)	(0.008)	(0.038)	(1.593)	(0.006)	(0.049)
RELATEDNESS_2	-0.035	-0.032	0.005	0.031	0.317	-0.003	0.013
	(0.027)	(0.027)	(0.007)	(0.046)	(0.305)	(0.006)	(0.035)
MACRO_1	-0.439 ***	-0.078	0.029 *	0.031	0.480 *	0.019 **	0.104
	(0.067)	(0.053)	(0.016)	(0.042)	(0.286)	(0.009)	(0.070)
MACRO_2	-0.146 ***	-0.056	0.014	-0.021	0.541 **	-0.006	0.063
	(0.046)	(0.043)	(0.014)	(0.048)	(0.275)	(0.008)	(0.079)
MACRO_3	0.057 *	0.102 ***	-0.045 **	-0.027	0.942	-0.004	0.013
	(0.032)	(0.032)	(0.019)	(0.049)	(0.708)	(0.010)	(0.064)
MACRO_4	-0.025	0.002	-0.029 *	-0.010	-0.457	-0.017 **	-0.085
	(0.044)	(0.043)	(0.015)	(0.044)	(0.318)	(0.007)	(0.083)
INDUSTRY_1	0.001	-0.209 *	-0.016	0.025	-0.343	-0.035	-0.289 **
	(0.098)	(0.114)	(0.016)	(0.074)	(0.488)	(0.014)	(0.130)
INDUSTRY_2	0.083	-0.164	-0.014	0.045	-0.617	0.012	-0.087
	(0.094)	(0.109)	(0.016)	(0.044)	(2.684)	(0.015)	(0.143)
INDUSTRY_3	0.164	0.047	-0.004	-0.023	-0.312	0.008	-0.368 *
	(0.149)	(0.157)	(0.012)	(0.449)	(0.469)	(0.016)	(0.218)
INDUSTRY_4	0.024	-0.061	0.023	0.094 **	-2.293	0.006	-0.093
	(0.110)	(0.115)	(0.015)	(0.047)	(2.017)	(0.013)	(0.128)
INDUSTRY_5	0.039	-0.105	-0.012	0.032	-0.422	-0.013	-0.174
	(0.091)	(0.111)	(0.011)	(0.034)	(0.454)	(0.011)	(0.121)
INDUSTRY_6	0.024	-0.076	-0.005	0.042	-0.779	-0.029 **	-0.227 *
	(0.089)	(0.105)	(0.013)	(0.040)	(0.580)	(0.013)	(0.120)
INDUSTRY_7	-0.026	-0.194 *	-0.033	0.006	-0.104	-0.018 *	-0.211 *
	(0.091)	(0.106)	(0.022)	(0.051)	(0.279)	(0.010)	(0.119)
INDUSTRY_8	0.017	-0.156	-0.004	0.032	0.108	0.004	-0.291 *
	(0.92)	(0.108)	(0.012)	(0.051)	(0.598)	(0.016)	(0.177)
INDUSTRY_9	-0.027	-0.144	-0.001	0.034	0.016	-0.017 *	-0.225 *
	(0.089)	(0.105)	(0.010)	(0.058)	(0.381)	(0.010)	(0.121)
INDUSTRY_10	-0.023	-0.171 *	0.008	0.036	0.238	-0.014	-0.213 *
	(0.088)	(0.103)	(0.010)	(0.044)	(0.209)	(0.010)	(0.118)
CONSTANT	1.154 ***	1.261 ***	-0.042	-0.198	0.875	0.135 **	0.305
	(0.360)	(0.358)	(0.075)	(0.570)	(6.682)	(0.056)	(0.380)
Observations	2,127	2,127	1,385	1,843	2,070	2,154	2,154
R-Squared	0.073	0.054	0.044	0.002	0.006	0.032	0.011
Adjusted R-squeared	0.063	0.044	0.028	-0.011	-0.005	0.021	-0.000
Residual Std. Error	0.361	0.345	0.017	0.99	173.100	0.014	0.718
(d. f.)	(2,103)	(2,103)	(1,361)	(1,819)	(2,046)	(2,130)	(2,130)
F Statistic	111.58 ***	130.16 ***	1.22	1.29	0.54	2.07 ***	7.12 ***
(d. f.)	(23; 2,103)	(23; 2,103)	(23; 1,361)	(23; 1,819)	(23; 2,046)	(23; 2,130)	(23; 2,130)

Appendix C.2 *Full Regression (3-year)*

3 YEAR	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
PR	1.020 ***	0.984 ***	0.018	0.004	1.303 **	0.057 **	0.302
	(0.171)	(0.170)	(0.025)	(0.043)	(0.637)	(0.029)	(0.189)
SL	0.522 ***	0.475 ***	0.017	-0.004	1.000 *	0.047 *	0.338 *
	(0.131)	(0.129)	(0.025)	(0.043)	(0.517)	(0.029)	(0.204)
LD	0.486 **	0.441 **	0.028	0.02	2.664	0.074 **	0.276
	(0.193)	(0.192)	(0.031)	(0.060)	(1.926)	(0.034)	(0.189)
CASH	0.082	0.205 *	0.062	0.06	0.94	0.02	-0.025
	(0.127)	(0.120)	(0.049)	(0.037)	(0.823)	(0.023)	(0.096)
SIZE	-0.445 ***	-0.442 ***	0.002	0.006	-0.593 *	-0.011 ***	-0.074 *
	(0.069)	(0.069)	(0.011)	(0.012)	(0.347)	(0.004)	(0.044)
VALUATION	0.000 ***	0.000 ***	-0.000 ***	-0.000 **	-0.000	0.000 ***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CROSS_BORDER	0.116	0.107	-0.019	-0.028	-0.434	-0.006	0.010
	(0.080)	(0.077)	(0.014)	(0.020)	(0.466)	(0.009)	(0.070)
RELATEDNESS_1	0.259 ***	0.217 ***	-0.009	0.024	0.144	-0.003	0.033
	(0.071)	(0.071)	(0.011)	(0.017)	(0.258)	(0.007)	(0.045)
RELATEDNESS_2	-0.050	-0.030	0.002	-0.011	0.103	-0.003	-0.032
	(0.072)	(0.071)	(0.009)	(0.016)	(0.285)	(0.006)	(0.045)
MACRO_1	-0.528 ***	-0.276 **	0.053 ***	0.051	0.181	0.018 *	0.021
	(0.153)	(0.134)	(0.015)	(0.027)	(0.252)	(0.011)	(0.029)
MACRO_2	-0.867 ***	-0.216 **	0.037 ***	-0.032	0.272	0.005	0.016
	(0.110)	(0.106)	(0.014)	(0.045)	(0.237)	(0.010)	(0.029)
MACRO_3	0.040	0.093	-0.050 **	0.010	0.665	0.012	0.016
	(0.073)	(0.074)	(0.020)	(0.020)	(0.674)	(0.011)	(0.040)
MACRO_4	-0.263 **	-0.076	-0.043 ***	-0.018	-0.391	-0.006	-0.050
	(0.115)	(0.115)	(0.015)	(0.023)	(0.284)	(0.008)	(0.034)
INDUSTRY_1	-0.164	-1.104 **	-0.068 ***	-0.092 **	-0.975 *	-0.050 **	-0.476 **
	(0.509)	(0.544)	(0.026)	(0.038)	(0.550)	(0.024)	(0.232)
INDUSTRY_2	-0.163	-0.697	-0.046 **	-0.007	-0.100	0.038	-0.389 *
	(0.517)	(0.550)	(0.023)	(0.051)	(0.626)	(0.027)	(0.236)
INDUSTRY_3	-0.126	-0.849	-0.044 ***	-0.079	-1.199 *	-0.011	-0.437 *
	(0.500)	(0.535)	(0.015)	(0.051)	(0.713)	(0.021)	(0.234)
INDUSTRY_4	-0.349	-0,716	-0.010	-0.103	0.976	0.034	-0.315
	(0.519)	(0.540)	(0.019)	(0.107)	(1.507)	(0.024)	(0.232)
INDUSTRY_5	0.079	-0.471	-0.044 ***	-0.111 ***	-0.938	-0.018	-0.449 *
	(0.503)	(0.543)	(0.015)	(0.038)	(0.618)	(0.022)	(0.233)
INDUSTRY_6	-0.259	-0.920 *	-0.043 **	-0.082 **	-1.032	-0.008	-0.393 *
	(0.479)	(0.513)	(0.018)	(0.033)	(0.630)	(0.021)	(0.228)
INDUSTRY_7	-0.335	-1.096 **	-0.072 ***	-0.103 ***	-0.479	-0.024	-0.275
	(0.477)	(0.511)	(0.027)	(0.034)	(0.443)	(0.021)	(0.260)
INDUSTRY_8	-0.392	-1.022 **	-0.064 ***	-0.098 ***	-0.619	-0.023	-0.568 **
	(0.495)	(0.529)	(0.017)	(0.38)	(0.456)	(0.022)	(0.276)
INDUSTRY_9	-0.479	-1.089 **	-0.037 ***	-0.072 **	-0.338	0.012	-0.429 *
	(0.485)	(0.520)	(0.013)	(0.033)	(0.546)	(0.020)	(0.228)
INDUSTRY_10	-0.264	-1.021 **	-0.022 *	-0.076 ***	-0.447	-0.013	-0.393 *
	(0.484)	(0.519)	(0.012)	(0.029)	(0.421)	(0.020)	(0.223)
CONSTANT	3.485 ***	4.141 ***	-0.039	-0.055	4.081	0.036	0.791
	(0.827)	(0.853)	(0.110)	(0.175)	(2.503)	(0.055)	(0.490)
Observations	1,706	1,706	1,105	1,449	1,649	1,730	1,730
R-Squared	0.131	0.077	0.059	0.017	0.02	0.049	0.018
Adjusted R-squeared	0.119	0.064	0.039	0.001	0.007	0.036	0.004
Residual Std. Error	1.997	1.973	0.023	0.082	40.057	0.015	0.822
(d. f.)	(1,682)	(1,682)	(1,081)	(1,425)	(1,625)	(1,706)	(1,706)
F Statistic	23.50 ***	16.25 ***	2.00 ***	1.71 **	0.43	9.89 ***	14.82 ***
(d. f.)	(23; 1,682)	(23; 1,682)	(23; 1,081)	(23; 1,425)	(23; 1,625)	(23; 1,706)	(23; 1,706)

Appendix C.3 *Full Regression (5-year)*

5 YEAR	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
PR	1.739 ***	1.412 ***	0.015	0.009	1.598 *	0.043 *	0.286
	(0.267)	(0.251)	(0.028)	(0.052)	(0.840)	(0.024)	(0.243)
SL	1.059 ***	0.793 ***	0.019	0.028	1.196 *	0.03	0.279
	(0.230)	(0.207)	(0.028)	(0.053)	(0.690)	(0.024)	(0.255)
LD	1.155 **	0.869 *	0.045	0.034	3.344	0.073 **	0.452 *
	(0.457)	(0.453)	(0.035)	(0.067)	(2.325)	(0.031)	(0.259)
CASH	-0.285	-0.026	0.065	-0.072	1.088	0.04	-0.094
	(0.348)	(0.347)	(0.063)	(0.125)	(0.964)	(0.025)	(0.151)
SIZE	-0.445 ***	-0.446 ***	0.008	0.015	-0.676	-0.008	-0.014
	(0.085)	(0.084)	(0.014)	(0.012)	(0.413)	(0.005)	(0.016)
VALUATION	-0.000 ***	-0.000 ***	-0.007	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)	(0.000)	(0.000)
CROSS_BORDER	0.013	0.093	-0.018	0.005	-0.512	-0.010	0.058
	(0.141)	(0.137)	(0.018)	(0.030)	(0.555)	(0.010)	(0.060)
RELATEDNESS_1	0.291 *	0.233	-0.012	0.008	0.180	-0.013	0.039
	(0.161)	(0.161)	(0.014)	(0.021)	(0.327)	(0.009)	(0.058)
RELATEDNESS_2	-0.210 *	-0.117	0.009	-0.015	0.058	0.002	-0.010
	(0.122)	(0.121)	(0.011)	(0.018)	(0.331)	(0.007)	(0.036)
MACRO_1	0.356	-0.178	0.042 ***	0.014	0.186	0.015	-0.024
	(0.216)	(0.188)	(0.014)	(0.029)	(0.272)	(0.012)	(0.035)
MACRO_2	-0.224 *	-0.110	0.034 **	0.054	0.249	0.009	0.037
	(0.128)	(0.117)	(0.014)	(0.058)	(0.244)	(0.011)	(0.036)
MACRO_3	0.238	0.158	-0.059 ***	0.005	0.677	0.018 *	0.048
	(0.149)	(0.148)	(0.021)	(0.020)	(0.686)	(0.010)	(0.043)
MACRO_4	-1.399 ***	-0.427 ***	-0.037 **	0.008	-0.431	-0.005	-0.023
	(0.150)	(0.146)	(0.016)	(0.023)	(0.299)	(0.010)	(0.032)
INDUSTRY_1	0.601	-1.510	-0.061 *	-0.090 **	-0.675	-0.099 ***	-0.111
	(0.879)	(0.968)	(0.032)	(0.037)	(0.513)	(0.023)	(0.091)
INDUSTRY_2	0.085	-1.143	-0.056 **	0.045	0.438	0.023	-0.011
	(0.879)	(0.960)	(0.028)	(0.056)	(0.678)	(0.029)	(0.066)
INDUSTRY_3	0.239	-1.344	-0.022	0.01	-1.056	-0.039	-0.078
	(0.857)	(0.948)	(0.018)	(0.045)	(0.833)	(0.019)	(0.055)
INDUSTRY_4	-0.865	-1.807 *	-0.006	-0.049	1.676	-0.010	-0.016
	(0.859)	(0.925)	(0.025)	(0.058)	(1.744)	(0.025)	(0.055)
INDUSTRY_5	0.836	-0.384	-0.039 **	-0.094 *	-0.642	-0.041 *	-0.092
	(0.913)	(1.012)	(0.020)	(0.146)	(0.646)	(0.021)	(0.067)
INDUSTRY_6	-0.200	-1.697 *	-0.029	-0.059	-0.740	-0.038 **	-0.050
	(0.822)	(0.911)	(0.019)	(0.038)	(0.626)	(0.019)	(0.061)
INDUSTRY_7	-0.258	-1.897 **	-0.055 *	-0.087 **	0.015	-0.047 **	-0.061
	(0.812)	(0.903)	(0.032)	(0.036)	(0.352)	(0.019)	(0.056)
INDUSTRY_8	-0.336	-1.859 **	-0.055 ***	-0.071 *	-0.197	-0.061 ***	-0.222
	(0.837)	(0.926)	(0.018)	(0.038)	(0.357)	(0.019)	(0.178)
INDUSTRY_9	-0.347	-1.685 *	-0.026 *	-0.033	0.070	-0.047 ***	-0.089 *
	(0.826)	(0.918)	(0.013)	(0.036)	(0.493)	(0.017)	(0.052)
INDUSTRY_10	0.163	-1.574 *	-0.011	-0.060 **	-0.071	-0.052 ***	-0.124 **
	(0.826)	(0.918)	(0.012)	(0.031)	(0.298)	(0.017)	(0.052)
CONSTANT	3.173 **	4.854 ***	-0.097	-0.085	4.104	0.039	-0.088
	(1.263)	(1.292)	(0.138)	(0.176)	(2.915)	(0.055)	(0.333)
Observations	1,434	1,434	942	1,244	1,410	1,492	1,492
R-Squared	0.160	0.07	0.066	0.022	0.025	0.063	0.022
Adjusted R-squeared	0.146	0.055	0.042	0.004	0.009	0.048	0.007
Residual Std. Error	4.394	4.255	0.027	0.100	46.746	0.017	0.488
(d. f.)	(1,410)	(1,410)	(918)	(1,220)	(1,386)	(1,468)	(1,468)
F Statistic	56.06 ***	113.38 ***	1.74 **	1.62 **	0.76	15.03 ***	12.04 ***
(d. f.)	(23; 1,410)	(23; 1,410)	(23; 918)	(23; 1,220)	(23; 1,386)	(23; 1,468)	(23; 1,468)

Appendix C.4 *Regression Models*

Regression model 1 - BHAR_1

$$BHAR\_1_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Regression model 2 - BHAR_2

$$BHAR\_2_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Regression model 3 - ΔAROA

$$\Delta AROA_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Regression model 4 - ΔAROE

$$\Delta AROE_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Regression model 5 - ΔAROS

$$\Delta AROS_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Regression model 6 - ΔAOROA

$$\Delta AOROA_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Regression model 7 - ΔAOROE

$$\Delta AOROE_{t=1,3,5} = \alpha + \beta_1 PR_i + \beta_2 LD_i + \beta_3 SL_i + \beta_4 RELATEDNESS\_1_i + \beta_5 RELATEDNESS\_2_i + \beta_6 CROSS\_BORDER_i + \beta_7 CASH_i + \beta_{8-17} INDUSTRY_i + \beta_{18} MACRO\_1_i + \beta_{19} MACRO\_2_i + \beta_{20} MACRO\_3_i + \beta_{21} MACRO\_4_i + \beta_{22} SIZE_i + \beta_{23} VALUATION_i + \epsilon$$

Appendix C.5 *Industry variable categorization and GICS matching*

Regression Variable	GICS Industry	Nasdaq Industry Index
INDUSTRY_1	Information Technology	Technology
INDUSTRY_2	Health Care	Health Care
INDUSTRY_3	Consumer Staples	Food, Beverage & Tobacco
INDUSTRY_4	Energy	Oil & Gas
INDUSTRY_5	Real Estate	Real Estate
INDUSTRY_6	Financials	Financials
INDUSTRY_7	Communication Services	Telecommunications
INDUSTRY_8	Consumer Discretionary	Consumer Products & Services
INDUSTRY_9	Industrials	Industrials
INDUSTRY_10	Materials	Basic Materials
INDUSTRY_11	Utilities	Utilities

APPENDIX D - Illustrative sample of dataset

Appendix D.1 *Dataset*

					1-YEAR							3-YEAR							5-YEAR				
# Deal	Announced Date	Completed Date	Target Company	Bidder Company	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE	BHAR_1	BHAR_2	ROA	ROE	ROS	OROA	OROE
1	2001-02-16	2001-04-20	Riihimaen Puhelin Oy	Elisa Oyj	0.00	-0.21	-0.11	0.02	0.04	0.05	0.18	-0.25	-0.22	-0.12	-0.03	-0.06	-0.05	-0.11	-0.13	-0.38	-0.06	0.09	0.06	0.04	0.10
2	2001-02-28	2001-03-09	Sandvik Choksi Ltd	Sandvik AB	0.17	0.23	-0.12	0.08	-0.01	0.00	0.00	0.29	0.55	-0.12	0.07	-0.02	-0.02	-0.01	0.32	0.94	-0.10	0.10	0.01	0.02	0.09
3	2001-03-12	2001-03-12	Medicotest ASA	Ambu A/S	-0.31	-0.08	-0.04	0.04	0.02	0.02	0.04	-0.05	0.82	0.02	0.07	0.06	0.06	0.13	4.20	3.92	0.00	0.08	0.08	0.10	0.14
4	2001-03-12	2001-03-12	Panorama Polska	Eniro AB	0.07	-0.01	-2.84	-1.65				-0.06	0.07	-2.89	-1.72				0.08	0.00	-2.92	-1.66			
5	2001-03-14	2001-03-14	Provinzial Skandinavien Holding A/S	Alm Brand Group	-0.08	-0.04			-0.01	-0.13		-0.03	0.56				-0.01	-0.09	0.33	1.17				-0.03	-0.24
6	2001-03-21	2001-12-28	Soon Communications Oyj	Elisa Oyj	-0.05	-0.13	-0.11	0.02	0.04	0.05	0.18	-0.29	-0.15	-0.12	-0.03	-0.06	-0.05	-0.11	-0.15	-0.23	-0.06	0.09	0.06	0.04	0.10
7	2001-03-21	2001-03-21	Phoenix Tag	Trelleborg AB	0.27	0.39	0.00	0.05	0.00	0.02	0.05	0.33	1.22	0.03	0.11	0.01	0.02	0.08	0.75	1.40	0.01	0.05	0.00	0.01	0.04
8	2001-03-22	2001-07-04	Martin Professional A/S	Schouw & Co A/S	-0.57	-0.23	-0.31	-1.21	-0.02	-0.03	-0.13	-0.43	-0.17	-0.35	-1.33	-0.04	-0.05	-0.15	-0.99	-0.04	-0.28	-1.11	-0.04	-0.06	-0.14
9	2001-03-27	2002-01-14	COMSAT Mobile communications	Telenor ASA	0.06	-0.01	0.19	0.33	0.06	0.09	0.27	-0.06	0.37	0.13	0.19	0.12	0.10	0.30	0.48	0.40	0.13	0.20	0.05	0.08	0.29
10	2001-04-11	2001-05-14	Midtbank	Svenska Handelsbanken AB	-0.07	-0.06	0.01	-0.03		-0.01	-0.53	0.03	-0.03	0.00	-0.07		-0.03	-0.85	-0.77	0.06	0.00	-0.09		-0.04	-1.10
11	2001-04-20	2001-06-12	Riihimaen Puhelin Oy	Elisa Oyj	-0.17	-0.32	-0.11	0.02	0.04	0.05	0.18	-0.25	-0.15	-0.12	-0.03	-0.06	-0.05	-0.11	-0.21	-0.38	-0.06	0.09	0.06	0.04	0.10
12	2001-05-04	2001-05-04	M-real Meulemans SA	Metsa Board Oyj	0.09	0.26	0.02	-0.15	-0.02	-0.01	-0.06	0.04	0.27	0.00	-0.21	-0.04	-0.03	-0.13	-0.89	-0.45	-0.01	-0.23	-0.07	-0.02	-0.16
13	2001-05-07	2001-05-07	Ericsson Saab Avionics AB	Saab AB	0.65	0.54	0.03	0.05	0.04	0.02	0.04	0.51	0.42	0.04	-0.01	0.01	0.02	-0.01	1.00	1.25	0.02	-0.07	0.00	0.00	-0.09
14	2001-05-11	2001-05-17	Bula Ltd	Outokumpu Oyj	0.28	0.45	-0.10	0.00	-0.04	-0.04	-0.07	0.08	0.63	-0.09	-0.01	-0.05	-0.06	-0.14	0.45	0.89	-0.10	-0.03	-0.06	-0.04	-0.13
15	2001-05-11	2001-05-11	IVO Transmission Engineering	CapMan Plc	4.29	4.17	-2.67	-6.56	0.01	-0.82	-1.45	2.10	2.94	-3.33	-7.05	-0.60	-1.24	-1.97	4.81	5.27	-3.23	-6.98	-0.56	-1.14	-1.86
16	2001-05-14	2001-05-14	Newcastle International Airport Ltd	Copenhagen Airports A/S	-0.09	-0.19	0.01	0.01	-0.04	-0.01	-0.03	-0.11	0.09	0.10	0.06	0.00	0.00	0.02	1.06	1.30	0.02	0.04	-0.04	0.00	-0.02
17	2001-05-15	2001-07-25	Lifco AB	Midsona AB	-0.41	-0.29			-0.06			-0.17	0.52			-0.06			0.37	0.81			-0.06		
18	2001-05-15	2001-05-30	Loomis Fargo & Co	Securitas AB	0.25	0.14	-0.15	0.35	0.01	0.03	0.08	-0.25	-0.37	-0.14	0.37	0.01	0.03	0.07	-1.02	-0.77	-0.14	0.37	0.00	0.01	0.02
19	2001-05-29	2001-11-30	G. Haindl'sche Papierfabriken KGaA	UPM Corporation	0.05	0.22	-0.03	0.02	0.01	0.00	0.01	-0.20	0.04	-0.05	-0.06	-0.10	-0.06	-0.13	-0.63	-0.19	-0.07	-0.11	-0.12	-0.05	-0.15
20	2001-05-31	2001-07-31	Wijsmuller Groep Holding BV	A.P. Moller - Maersk A/S	-0.08	-0.18	0.23	0.31	0.05	-0.01	-0.02	0.11	0.35	-0.04	0.02	-0.17	0.17	0.29	-0.24	0.00	-0.06	-0.05	-0.18	0.10	0.21
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1154	2015-12-30	2015-12-30	Compose IT System AB	Proact IT Group AB	0.36	0.10			-0.01	0.03	0.09	0.75	0.28			-0.01	0.05	0.13	0.26	0.29			-0.01	0.02	-0.06
1155	2016-01-08	2016-03-07	Grupa DUON S.A.	Fortum Oyj AB	-0.11	0.14	-0.02	-0.04	-0.08	0.04	0.23	-0.01	0.58	0.04	0.18	-0.05	0.05	0.19	-2.67	0.41	0.01	0.14	-0.09	0.06	0.26
1156	2016-01-12	2016-06-01	Onninen Oy	Kesko Group	0.57	0.63	0.03	0.04	-0.01	0.07	0.15	0.28	0.82	0.03	0.04	0.03	0.07	0.22	1.59	1.83	0.04	0.10	0.05	0.06	0.24
1157	2016-01-13	2016-02-18	Nutrition Physiology Company, LLC	Chr. Hansen Holding A/S	-0.51	-0.05	0.02	0.04	-0.01	0.00	0.01	-0.33	0.35	0.02	0.07	0.04	-0.01	-0.01	-0.78	-0.05	-0.03	-0.09	0.00	-0.05	-0.12
1158	2016-01-14	2016-01-14	Lundin Energy AB	Equinor ASA	-0.01	0.25	-0.01	0.06	-0.07	0.01	-0.06	-0.02	0.62	0.03	0.01	0.12	0.11	0.19	-3.02	-0.22	0.03	0.00	0.00	0.05	-0.10
1159	2016-01-20	2016-01-21	Aega Yieldco AS	Aega ASA	-0.54	-0.30			-0.40	0.01	0.11	-1.33	-0.88			-0.16	0.04	0.15	-3.49	-0.40			-1.14	-0.03	-0.01
1160	2016-01-20	2016-03-01	Availon GmbH	Vestas Wind Systems A/S	-0.20	0.05	0.02	0.06	0.04	0.04	0.15	-0.50	0.03	-0.03	-0.03	-0.01	-0.02	0.00	0.85	1.36	-0.04	-0.05	-0.05	-0.05	-0.11
1161	2016-01-28	2016-04-01	Zymetech ehf	Enzymatica AB	0.18	0.06		0.42	0.20	0.26	0.38	-0.04	-0.62		0.66	0.69	0.48	0.75	3.31	3.35		0.90	1.35	0.66	0.89
1162	2016-01-29	2016-02-15	Human Capital Group AB	NGS Group AB	0.47	0.35			0.02	-0.02	-0.04	0.27	-0.41			0.00	-0.07	-0.05	-1.13	-1.10			-0.04	-0.15	-0.21
1163	2016-01-29	2016-04-01	GPV International A/S	Schouw & Co A/S	0.15	0.21	0.07	0.10	-0.03	0.01	0.02	0.20	0.30	0.00	-0.02	-0.01	-0.02	0.01	-0.17	0.07	0.00	-0.02	0.00	-0.01	0.03
1164	2016-02-01	2016-02-01	MAG 45 B.V.	Solar A/S	-0.43	-0.21	0.00	-0.02	0.00	0.00	0.01	-0.47	-0.40	-0.02		0.00	0.01	0.03	-1.18	-0.73		0.04	0.01	0.04	0.12
1165	2016-02-01	2016-04-29	Tapad, Inc.	Telenor ASA	-0.12	-0.15	0.06	0.19	0.03	0.02	0.14	0.05	0.25	0.07	0.20	0.10	0.02	0.11	-0.37	-0.42	0.03	0.38	0.08	0.03	0.35
1166	2016-02-08	2016-05-04	Ganger Rolf ASA	Bonheur ASA	0.13	0.34			-0.04	-0.02	-0.10	0.34	0.81			-0.11	-0.03	-0.21	2.99	3.44			-0.26	-0.07	-0.36
1167	2016-02-08	2016-06-01	Destiny Wireless plc	Anoto Group AB	-0.62	-0.85			-0.24	-0.10	-0.16	-0.68	-0.99		0.12	0.26	0.25	0.49	-1.70	-1.69			-0.43	0.08	0.24
1168	2016-02-08	2016-03-01	LabRum AB	ADDvise Group AB	-0.10	-0.28			0.08	0.07	0.40	-0.31	-0.54			0.04	0.05	0.16	-1.08	-1.12			0.05	0.07	0.13
1169	2016-02-15	2016-04-01	Airteam A/S	Ratos AB	-0.15	0.00			-0.02	-0.01	-0.03	-0.51	-0.60			0.01	0.00	0.02	-0.84	-0.92			0.07	0.02	0.09
1170	2016-03-10	2016-06-01	Kevitsa mine	Boliden AB	0.67	1.09	0.02	0.04	0.03	0.01	0.04	0.71	0.87	0.06	0.10	0.06	0.06	0.08	0.28	1.07	0.05	0.05	0.06	0.07	0.10
1171	2016-03-15	2016-03-15	LED Linear GmbH	AB Fagerhult	0.75	0.89	0.01	0.03	0.02	0.01	0.06	0.61	0.36	-0.01	0.05	0.02	0.01	0.07	-0.98	-0.54	-0.03	-0.09	-0.04	-0.06	-0.18
1172	2016-03-15	2016-04-04	Soikea Solutions Oy; Espotel Oy	Etteplan Oyj	0.25	0.40	-0.01	-0.02	-0.01	-0.01	-0.03	0.73	1.01	0.02	0.06	0.02	0.03	0.04	2.30	2.73	0.01	0.04	0.01	0.00	-0.01
1173	2016-03-17	2016-04-07	Ikas Norge AS	Axactor ASA	0.21	0.31			6.81	0.02	0.00	0.28	-0.09			7.30	0.12	0.27	-1.23	-1.35			7.31	0.11	0.23
1174	2016-03-24	2016-05-12	Strax GmbH	Strax AB	-0.01	-0.02			-0.01	-0.02	0.12	-0.09	-0.57			-0.11	-0.13	-0.39	-0.70	-0.56			-0.10	-0.11	-0.36
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2308	2022-10-13	2022-10-13	Acroud Media Ltd	Acroud AB					0.08	0.03	0.12														
2309	2022-10-17	2022-11-11	Intunor AS	ECIT AS					0.03	0.01	0.03														
2310	2022-10-26	2022-10-26	KickerTech Malta Ltd	Betsson AB			0.00	-0.02	0.03	0.01	0.05														
2311	2022-10-27	2022-11-02	eMundo GmbH	Gofore Plc					0.00	-0.01	-0.01														
2312	2022-11-01	2022-11-01	Astec IT Solutions Ltd	Novotek AB					-0.01	-0.05	-0.07														
2313	2022-11-02	2022-11-02	Custom Vet Products Ltd	Swedencare AB (publ)				-0.06																	
2314	2022-11-02	2022-12-06	McCann Plastics Inc	HEXPOL AB				0.02	-0.05	-0.02	-0.07														
2315	2022-11-03	2022-11-03	MBE AG	Nederman Holding AB				-0.04	-0.02	-0.02	-0.05														
2316	2022-11-08	2022-12-31	ZDK Zolotaya Zvezda ZAO	Kopy Goldfields AB					-0.40	-0.21	-0.47														
2317	2022-11-08	2022-11-08	Furstenwalder Aus- und Weiterbildungszentrum gGmbH	AcadeMedia AB																					
2318	2022-11-11	2022-11-11	Econia Yrityspalvelut Oy	Administer Oy																					
2319	2022-11-18	2022-11-18	Eckero Linjen	Viking Line Abp					0.13	0.06	0.16														
2320	2022-11-22	2022-12-29	NTS ASA	Salmar ASA			-0.02	0.06	0.01	-0.04	-0.03														
2321	2022-11-24	2022-11-24	Palas GmbH	Indutrade AB			0.01	0.01	-0.01	-0.01	0.00														
2322	2022-11-24	2022-12-01	KNET CO., LTD	Hexatronic Group AB				0.13	0.05	0.06	0.15														
2323	2022-12-08	2023-03-01	Hueck Industrie Holding	Norsk Hydro ASA					0.01	0.06	0.05														
2324	2022-12-12	2022-12-12	S-E-T A/S	Relais Group Oy			0.05	0.00	0.02	0.00	0.05														
2325	2022-12-13	2023-01-02	Suomen Sukittajat Oy	tbd30 AB																					
2326	2022-12-13	2023-02-02	CQMS Razer	Epiroc AB			0.01	0.00	0.00	0.00	0.02														
2327	2022-12-19	2023-01-20	UBConnect AS	Transtema AB				-0.02	-0.03	-0.03	-0.13														
2328	2022-12-21	2022-12-21	AB Gardafastigheten 16:17	Platzer Fastigheter AB				0.21	0.01	0.00	-0.02														

Appendix D.2 *Dataset (cont.)*

# Deal	CROSS_BORDER	RELATEDNESS_1	RELATEDNESS_2	CASH	SIZE	MACRO_1	MACRO_2	MACRO_3	MACRO_4	VALUATION	INDUSTRY_1	INDUSTRY_2	INDUSTRY_3	INDUSTRY_4	INDUSTRY_5	INDUSTRY_6	INDUSTRY_7	INDUSTRY_8	INDUSTRY_9	INDUSTRY_10	INDUSTRY_11	PR	LD	SL	DM
1	0	1	0	1	9.42	0	0	1	1	0.28	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
2	1	1	1	1	9.89	0	0	1	1	0.42	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
3	0	0	0	0	7.00	0	0	1	1	1.68	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0
4	1	1	1	1	9.30	0	0	1	1		0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
5	1	1	1	1	8.36	0	0	1	1		0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
6	0	1	0	0	9.39	0	0	1	1	0.28	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
7	1	1	0	1	8.89	0	0	1	1	1.34	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
8	0	0	1	1	8.52	0	0	1	1		0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
9	1	1	0	1	9.93	0	0	1	1	0.53	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
10	1	1	0	1	8.90	0	0	1	1	0.39	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
11	0	1	1	0	9.36	0	0	1	1	0.28	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
12	1	1	1	1	9.64	0	0	1	1		0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
13	0	1	0	1	9.09	0	0	1	1	0.73	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
14	1	1	1	1	9.27	0	0	1	1	1.61	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
15	0	0	0	1	6.94	0	0	1	1		0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
16	1	1	0	1	9.12	0	0	1	1	0.47	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
17	0	1	0	1	7.85	0	0	1	1	0.74	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
18	1	1	1	1	9.95	0	0	1	1	0.25	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
19	1	1	1	1	10.07	0	0	1	1	0.90	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
20	0	1	0	1	9.95	0	0	1	1	0.65	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
1154	0	1	0	1	8.18	0	0	1	0	0.33	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1155	1	1	0	1	10.02	0	0	1	0	0.27	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
1156	0	1	1	1	9.46	0	0	1	0	1.10	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
1157	1	1	0	1	9.91	0	0	1	0	0.57	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
1158	1	1	1	1	10.72	0	0	1	0	0.55	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
1159	0	1	0	0	5.65	0	0	1	0	1.32	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1160	1	1	0	1	10.10	0	0	1	0	0.26	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
1161	1	1	1	0	7.03	0	0	1	0	0.60	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1162	0	1	0	1	7.49	0	0	1	0	0.74	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
1163	0	1	0	1	9.12	0	0	1	0	1.08	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
1164	1	1	1	1	8.72	0	0	1	0	0.73	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
1165	1	1	0	1	10.45	0	0	1	0	0.73	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
1166	0	1	1	0	9.36	0	0	1	0	0.35	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
1167	1	1	1	0	8.06	0	0	1	0	0.91	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1168	0	1	0	1	7.09	0	0	1	0	0.02	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
1169	1	0	1	1	9.37	0	0	1	0	0.45	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
1170	1	1	0	1	9.64	0	0	1	0	0.10	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
1171	1	1	0	1	8.89	0	0	1	0	0.86	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
1172	0	1	1	1	8.04	0	0	1	0	0.35	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
1173	1	1	0	1	8.06	0	0	1	0	1.12	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
1174	1	0	1	0	7.50	0	0	1	0	0.68	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
2308	1	1	1	1	7.58	0	0	0	0	0.18	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
2309	0	1	0	0	8.40	0	0	0	0	-0.04	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2310	1	0	0	1	8.86	0	0	0	0	0.33	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2311	1	0	0	1	8.47	0	0	0	0	0.17	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
2312	1	1	0	1	7.43	0	0	0	0	0.29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2313	1	1	0	1	8.87	0	0	0	0	0.36	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
2314	1	0	0	1	9.55	0	0	0	0	0.68	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
2315	1	1	0	1	8.80	0	0	0	0	0.90	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
2316	1	0	0	1	8.16	0	0	0	0	0.20	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
2317	1	1	0	1	9.15	0	0	0	0	0.18	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
2318	0	1	0	1	7.39	0	0	0	0	0.29	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
2319	0	1	0	1	8.55	0	0	0	0	0.20	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2320	0	1	0	1	9.68	0	0	0	0	0.13	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
2321	1	1	0	1	9.86	0	0	0	0	0.13	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
2322	1	1	0	1	9.46	0	0	0	0	0.14	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
2323	1	1	1	1	10.18	0	0	0	0	0.98	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
2324	1	0	1	1	8.54	0	0	0	0	0.16	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
2325	1	1	1	1	7.96	0	0	0	0	0.36	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
2326	1	1	1	0	10.32	0	0	0	0	0.13	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
2327	1	1	1	1	8.07	0	0	0	0	0.18	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
2328	0	1	0	0	9.24	0	0	0	0	0.32	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1