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Swedish Acquisitions With A Long-Term Perspective

Comparing the Performance of Single and Serial Acquirers

by

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Abstract

This study examines the long-term post-acquisition performance of acquirers, both serial and single, in Sweden within a timeframe spanning from 2000 to 2022. The post-acquisition performance is evaluated using a long-term event study, employing the Buy-and-Hold Abnormal Returns (BHAR) methodology. The results of the 1-year BHAR analysis indicate that, on average, Swedish acquirers exhibit abnormal returns of -20.22%, indicating a trend of value destruction for acquiring firms' shareholders in the long term. The findings of the 6-month BHAR analysis further confirm the presence of negative abnormal returns. Additionally, the study does not yield substantial evidence to establish the outperformance of either single or serial acquirers in the long run. Regression analysis incorporating deal-specific control variables does not uncover statistically significant results.

Keywords: M&A; acquisitions; serial acquirers; long-term performance; BHAR.

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1. Introduction

The topic of mergers and acquisitions (from now own M&A or acquisitions) has been the subject of ongoing debate, generating a significant body of research within the academic community. One of the fundamental questions in this area concerns the value creation of M&A transactions. Specifically, this question is also extended to investigating whether firms that engage in multiple acquisitions over time outperform those that do not. Consequently, with this study, we aim to contribute to the existing literature by offering new insights into this topic.

The research on M&A deals is of great significance and importance, as evidenced by the substantial total value of announced deals, which amounted to $2.983 trillion in 2022. However, it is noteworthy that this figure represents a decline of 35.8% from the previous year, which set a record for M&A. The slowdown may be attributed to various factors, including, but not limited to, higher interest rates, geopolitical tensions, and a decline in confidence in the economic outlook (Mantone, Dholakia and Brennan, 2023).

Given that the primary focus of this thesis is on the analysis of acquisitions, it is essential to acknowledge the lack of clarity often surrounding the terms “merger” and “acquisition”. Hence, distinguishing between the terms is crucial for understanding their implications. Generally, an acquisition involves one company, the buyer, purchasing the assets or shares of another, the seller (or target), whereas a merger refers to two companies joining together as peers, with the merged company ceasing to exist as an individual entity (Sherman and Hart, 2005; Gaughan, 2011).

M&As represent crucial moments in companies' life cycles, offering the potential to accelerate growth compared to organic expansion, enter new markets, and reach new and previously untouched customer bases. Acquisitions, in particular, provide opportunities to reduce tax burdens and realize cost savings through synergies (Renneboog and Vasteenkiste, 2019). Ultimately, these advantages suggest that acquisitions generate value for the companies involved in the deal.

Numerous studies have investigated the potential value creation of acquisitions. However, there is an evident split between scholars who support the notion that acquisitions generate value (e.g., Dutta and Jog, 2009; Alexandridis, Antypas and Travlos, 2017; Renneboog and Vasteenkiste,

2019) and those who believe acquisitions to be value destroying (e.g., Giannopoulos, Lianou and Elmarzouky, 2023). Furthermore, the examination of both serial and non-serial (also referred to as single) acquirers holds great importance in understanding the potential differences in value creation within M&As. By researching whether single acquirers outperform serial acquirers and generate greater returns for their shareholders, we can gain insights into the long-term effects of multiple acquisitions. The body of research on this matter continues to demonstrate a lack of consensus among scholars, with some studies reporting that serial acquirers outperform single acquirers (e.g., Rovit, Harding and Lemire, 2003; Laamanen and Keil, 2008), while others argue that it is single acquirers who perform better (e.g., Ismail, 2008; Al Rahahleh and Wei, 2012; Hossain, Pham and Islam, 2021).

This study is centered on the M&A market in Sweden, limiting the geographical scope to this country. While extensive research has been carried out on the M&A markets of countries such as the United States (e.g., Bradley and Sundaram, 2006; Ismail, 2008; Alexandridis, Antypas and Travlos, 2017), the UK (Giannopoulos, Khansalar and Neel, 2017), Australia (Hossain, Pham and Islam, 2021), and Canada (Dutta and Jog, 2009), research focusing on the Swedish market is extensively limited. This choice is motivated by the considerable gap in the research, coupled with the unique characteristics of the Swedish market. Notably, Swedish firms exhibit a level of ownership concentration that is less pronounced than in other European countries yet more concentrated compared to the US. This suggests the possibility of contrasting results in the context of our study. Moreover, Sweden's M&A transactions in 2022 represented 40% of the total number of Nordic deals, highlighting its importance in the Nordics. This prominence within the Nordic region is particularly noteworthy given that the Nordics are recognized as Europe’s most active M&A markets in relative terms (KPMG, 2022).

In addition, this study differs from previous research by examining a time period characterized by factors such as inflation, increased borrowing expenses globally, and the unprecedented Covid-19 pandemic. This “unique” crisis has given rise to an initial upsurge of corporate transactions, which subsequently led to a discernible shift in the economic environment. However, as evidence on this is still limited, our investigation presents an opportunity to shed light on the effects of the current economic landscape.

Furthermore, most existing research focuses on studying post-acquisition performance in the short term. Hence, our study focuses on the long-term performance of M&A deals to fill a gap in the literature and provide a more comprehensive analysis of the performance of M&A deals in Sweden.

Overall the contribution of research to the existing literature is by providing insights into the performance of M&A deals in Sweden by investigating the performance of serial and non-serial acquirers in Sweden in the long term. The research question guiding this investigation is: *How do Swedish acquirers perform in the long term, and how does the post-acquisition performance of serial acquirers compare to that of non-serial acquirers?*

In order to address our research question and attain our aim, we have developed two hypotheses.

The empirical model selected for our research is a long-term event study, which is intended to provide valuable insights into the creation of value in acquisitions. Specifically, we employ a buy-and-hold abnormal return (BHAR) approach, which facilitates the examination of abnormal returns associated with a specific event.

To provide a well-structured analysis, the study establishes several delimitations. Firstly, the sample used in this study consists exclusively of Swedish public acquisitions announced between 2000 and 2022. Concerning value creation, this thesis examines public acquirers' post-acquisition performance. Therefore, a specific emphasis is given to the value generated for the acquiring firm's shareholders.

Given the scarcity of literature on acquisitions and serial acquirers in Sweden, and the absence of a set definition, serial acquirers have been identified as firms engaging in at least three acquisitions over the time frame analyzed.

While it is essential to acknowledge the limitations of the chosen methodology, particularly inherent to long-term event studies, we have carefully selected an appropriate methodology that allows for a comprehensive exploration of our research question. Further discussion regarding the methodology is presented in Section 3.

The findings obtained from this study indicate an underperformance among Swedish acquirers following the announcement of an acquisition. However, the analysis did not produce substantial

evidence indicating a difference in the post-acquisition performance between serial and non-serial acquirers in Sweden.

The remainder of this thesis is organized as follows. Section 2 presents a comprehensive review of the existing literature on post-acquisition performance and the factors that influence it, as well as a development of the hypotheses which guide our study. In Section 3, the research methodology is outlined along with any potential drawbacks. A detailed description of the data sample is provided in Section 4. Section 5 presents the results and includes a follow-up analysis. Finally, Section 6 offers a conclusion to the study.

2. Literature/Theoretical Review

2.1 Performance of Acquiring Firms

For many years, the bulk of research on M&A has predominantly centered around the investigation of gains and losses that occur after the announcement of the deal. Despite a wealth of literature on this subject, the performance of M&As after their announcements remains a topic of significant interest among scholars due to a lack of consensus on short-term outcomes and the challenges associated with conducting long-term studies.

2.1.1 Performance of Acquiring Firms in the Short-Term

As previously indicated, there is an ongoing debate within the research community regarding the short-term performance outcomes that follow an acquisition. While the majority of existing literature supports the notion that acquisitions create value for shareholders of the target firm and on an aggregate bias, there is significant variability in the results concerning the value creation for the acquiring firms (Dutta and Saadi, 2011).

Numerous studies have approached this topic by quantifying the value creation in M&As by analyzing the related companies' market price changes. In a study focused on the United States market, Alexandridis, Antypas, and Travlos (2017) have concluded that acquisitions are value-creating for acquiring firms' shareholders. These results align with other studies that similarly concluded that M&As create value for the acquiring firm's shareholders. Giannopoulos, Khansalar, and Neel (2017), conducting a study on UK's acquisitions during the timeframe spanning from 2002 to 2006, report that the acquiring firm's shareholders observe considerable gains during the short-term event window surrounding the announcement day. In a previous study focusing on Canadian firms between 1994 and 2000, Yuce and Ng (2005) reported significant positive abnormal results for acquiring companies.

As previously noted, a considerable number of scholars hold a different opinion and do not uphold the notion that acquisitions are value-creating for the bidder firm's shareholders, instead detecting value-destructing results through their studies.

A recent study aimed at assessing the value creation for shareholders from M&A deals, emphasizing the impact of the 2007-2008 financial crisis in Greece, was conducted by Giannopoulos, Lianou, and Elmarzouky (2023). The study found negative abnormal returns for bidder firms that ensued after the acquisition's announcements. Akin results have been obtained from earlier research documenting the underperformance of acquiring firms compared to target firms (Renneboog and Vansteenkiste, 2019). These studies confirm and extend earlier research efforts primarily focused on the US market and found either negative or insignificant abnormal returns for acquirers' shareholders (Dutta and Saadi, 2011). These findings indicate that, despite the substantial research already conducted, there remains scope for additional investigation, given the contrasting results.

2.1.2 Performance of Acquiring Firms in the Long-Term

Although most research has traditionally focused on investigating the short-term performance of firms following an acquisition, the last thirty years have seen an increment in studies analyzing the long-term effect on performance following M&A deals, thus gradually filling the gap present in the research.

The previous scarcity of research on the long-term performance of acquiring firms may be attributed, in part, to the underlying belief in the Efficient Market Hypothesis (Fama, 1970). In its argued semi-strong form, the EMH states that all publicly available information is already incorporated in current market prices, suggesting that each announced acquisition should promptly be priced by the market after the announcement, consequently leaving minimal scope for examining long-term effects. Thus, the prevalent belief in market efficiency had resulted in a scarcity of research; however, as a growing number of long-term studies producing inconsistent results with the belief have emerged, research efforts have intensified. Specifically, the findings of long-term studies, characterized, on average, by the observation of negative abnormal returns exhibited by acquiring firms, revealed a lack of market recognition of value creation, thereby challenging the EMH. An additional reason justifying the relative lack of research on long-term performance stems from the difficulty in distinguishing the effect of a deal from other factors that will affect the firm in the years after the transaction (Renneboog and Vansteenkiste, 2019).

Several significant studies have explored the long-term effects of acquisitions on firms' performance, including investigations by Gregory (1997) and Loughran and Vijh (1997), who reported significantly notably negative abnormal returns for UK and US companies, respectively. A significant development in this field of research was the meta-analysis conducted by Agrawal and Jaffe (1999), which provided valuable insights into the long-run performance trends observed following acquisitions. By examining 22 papers, the authors report that most studies provide evidence of statistically significant negative abnormal returns in the long run. In addition, scholars agree that relying exclusively on immediate market reactions to evaluate the success of an acquisition may depict an inaccurate picture of the long-term impact on the company's value. While there might be a positive reaction in the stock prices in the short term, the negative impact on the acquiring company's stock price is more significant (Andrade, Mitchell, and Stafford, 2001). These findings underscore the importance of also considering the long-term post-acquisition performance in assessing the success of an acquisition.

Nevertheless, as is the case with short-term studies, long-term studies' findings are not always consistent. For instance, Dutta and Jog (2009), examining the long-term performance of acquiring firms in Canada between 1993 and 2002, found no significant abnormal returns following the deal. Consequently, the authors concluded that such acquisitions do not show evidence of value destruction. Similarly, Andrade, Mitchell and Stafford (2001) conducted a study on a sample of US companies and found no significant evidence of reliable abnormal performance.

2.1.3 Differences in Short and Long-Term Performance

Based on an examination of the existing literature, it is evident that scholars hold divergent views on value creation and post-acquisition performance, both in the short and long term. It is also noticeable that, while most studies suggest that acquisitions generate value in the short term, this trend changes in the long run, with evidence of diminishing and negative abnormal results.

Given these findings, exploring the underlying reasons for the discrepancy in the results of short- and long-term studies is crucial. Such an investigation is necessary to understand the factors influencing post-acquisition performance comprehensively.

Methodological concerns surrounding long-term studies constitute one possible reason for such contrasting results. For instance, the introduction of the BHAR methodology in Loughrun and Vijh's (1997) study led to several subsequent studies reporting negative long-run abnormal returns following M&A transactions. In addition, long-term studies that employ a comprehensive set of benchmarks and methodologies often provide inconclusive evidence or no abnormal returns (Dutta and Saadi, 2011). As a result, long-term studies' findings are susceptible to bias and inaccuracy. Nevertheless, scholars have differing opinions regarding the importance of short-term and long-term studies. Some scholars believe that short-term studies provide the most objective/accurate evidence of efficiency (Fama, 1991) and are the optimal approach to assess the effect of acquisitions on firms' performance. Conversely, other researchers argue that long-term studies are equally important and necessary for understanding the factors that influence post-acquisition performance (Andrade, Mitchell, and Stafford, 2001). Further discussion on this topic is provided in Section 3, which focuses on the methodology.

In addition, it has been observed that behavioral biases may play a significant role in shaping the long-term performance of acquiring firms by causing an overestimation of potential synergies (Dutta and Saadi, 2011; Renneboog and Vansteenkiste, 2019). The impact of behavioral motives and biases, examined in depth in Section 2.2, is often found to lead to value destruction in the long term. Thus, these biases have been identified as a potential explanation for the differences in short and long-term post-acquisition performance.

2.2 Motives Behind M&As and Value Creation Drivers

Throughout history, scholars have extensively studied the underlying motives that drive firms to engage in M&As. In particular, Berkovitch and Narayanan (1993) have identified three primary motives: synergies, agency, and hubris. These motives can be categorized into two broad perspectives, namely the neoclassical view and the behavioral view. The neoclassical perspective suggests that M&As are an efficient and rational response to market inefficiencies driven by managers seeking to maximize shareholder value (Gorton, Kahl and Rosen, 2009). Conversely, the behavioral perspective hypothesized that managerial self-interest plays a significant role in driving M&A decisions.

According to the neoclassical perspective, the synergy motive assumes that managers act in the interest of shareholders, seeking to maximize their wealth. Therefore, acquisitions are only pursued if they are expected to generate positive gains for both the acquirer and the target firms (Berkovitch and Narayanan, 1993). Synergies, in this context, refer to the potential for the combined firm to be more profitable than the individual entities that were combined. This, in turn, enables the firm to offset the costs associated with the acquisition process and still achieve a premium (Gaughan, 2011). In essence, synergies are a compelling driver of value creation for firms involved in acquisitions. Furthermore, scholars have identified other motives, such as attaining faster growth through inorganic growth, penetrating new markets, and reducing competition (Renneboog and Vansteenkiste, 2019).

In contrast, behavioral motives, including hubris, frequently lead to the destruction of value rather than its generation. Nevertheless, such motives continue to lead to M&A activity.

The hubris hypothesis maintains that managers' mistakes drive acquisitions, creating no synergies (Berkovitch and Narayanan, 1993). Roll (1986) introduced this theory, stating that managerial overconfidence leads to decreased shareholders' wealth in subsequent deals. Numerous scholars have supported this theory, including Renneboog and Vansteenkiste (2019), who asserted that CEOs' overconfidence and acquisitiveness are the most recurring reasons for the long-term underperformance of acquiring firms. Aktas, de Bodt, and Roll (2009) add to the hubris hypothesis by offering a new perspective by introducing the CEO learning theory. According to their theory, the declining post-acquisition performance of serial acquirers is not solely driven by negative factors such as hubris but rather by the fact that CEOs improve their skills as they partake in more acquisitions. Consequently, experienced CEOs may bid more aggressively and win acquisition contests, leading to the natural outcome of declining performance. While Aktas, de Bodt, and Roll (2009) do not entirely cross out the effects of hubris as potential explanations for declining post-performance, they emphasize the role of CEO learning to shape M&A outcomes.

A significant driving force behind the pursuit of acquisitions, the agency theory is a widely accepted framework that explores the potential conflict of interest between corporate managers and shareholders (Jensen, 1986). According to this theory, acquisitions are driven by the self-interests of the acquiring firm's management rather than shareholder wealth maximization.

This motive arises from the opportunity it provides for managers to extract value from the target company (Berkovitch and Narayanan, 1993). In this regard, managers may aim to diversify their personal portfolio and increase the firm's size (Jensen, 1986). Additionally, Gorton, Kahl, and Rosen (2009) suggest that managers' self-interest may be driven by the assumption that the pursuit of acquisitions increases the firm's size, thereby preventing the company from becoming a target or creating significant premia in the case of a takeover. The authors further report that the industry in which the acquiring companies operate affects post-acquisition performance. Furthermore, research suggests that CEO compensation incentives significantly determine post-acquisition performance, particularly during out-of-wave periods (Hillier, McColgan and Tsekeris, 2020).

The drivers mentioned above represent only part of the various factors that influence the creation and destruction of value in the context of acquisitions. Economic cyclicality and merger waves may be additional plausible explanations for the differing post-acquisition performance (Xu, 2017). Merger waves, as illustrated in Appendix 1, denote the clustering of M&A activity during specific periods. Xu (2017) has identified multiple merger waves in Sweden and found that the post-acquisition performance of firms varies depending on the timing of the acquisitions within these waves. Therefore, the merger wave phenomenon partially explains the findings observed in the literature concerning value creation and destruction deriving from M&As. Nevertheless, it should be emphasized that the underlying reasons and the complexity of the contradiction require additional research.

2.3 Serial Acquirers

The analysis of serial acquisitions has been broad in the literature. However, a consensus on the definition of a firm engaging in repeated multiple acquisitions has yet to be established in the field, leaving room for subjective interpretation. Therefore, it is essential to note that the studies discussed in this section employ their definition of serial acquirers, making it challenging to compare findings across studies.

2.3.1 Post-acquisition Performance of Serial Acquirers

The field of research on the value creation of serial acquirers is split into two branches, as was the case with the question of whether acquisitions generate value. Some researchers (e.g., Laamanen and Keil, 2008) have proved that frequent acquirers can achieve better long-term returns than less frequent acquirers. Bradley and Sundaram (2006) have found that serial acquirers in the United States outperformed non-serial acquirers during the 1990s and have argued that good stock performance before acquisition encourages managers to pursue additional acquisitions. Even in earlier research, evidence indicates that frequent acquirers outperform non-frequent acquirers (Rovit, Harding and Lemire, 2003).

Nonetheless, most research points to evidence indicating the underperformance of serial acquirers, as proved by lower abnormal returns in frequent buyers compared to single acquirers. Ismail (2008), for instance, concluded that single acquirers outperform serial acquirers by 1.66% in the short term. Specifically, he reports that although the shareholders of the acquiring firm benefit from the deal, single acquirers experience higher returns. Ismail's findings align with Kengelbach, Klemmer, Schwetzler, and Sperling (2012), who also found that serial acquirers have lower (by 0.4 percentage points) cumulative abnormal returns in the short-term compared to single acquirers, as well as with Al Rahahleh and Wei (2012), whose research on serial acquisitions in emerging countries revealed a declining pattern in serial acquirers' returns. Giannopoulos, Khansalar, and Neel (2017) recently conducted a short-term event study demonstrating that single acquirers consistently outperform serial acquirers. These findings are consistent with those of Hossain, Pham, and Islam (2021), who likewise found that serial acquirers tend to have lower stock returns than single acquirers.

2.3.2 Differences in Performance of Serial and Non-Serial Acquirers

To understand the diverging findings in research regarding serial and non-serial acquirers, an examination of the underlying factors contributing to these differences is necessary. Existing literature suggests that such factors may arise from variations in the choice of control variables and behavioral motives, among other potential factors.

Giannopoulos, Khansalar and Neel (2017) have determined that deal characteristics such as payment method, target status, target location, and industry relatedness significantly impact the

consistent outperformance of single acquirers over their serial counterparts. Additional research conducted by Fuller, Netter and Stegemoller (2002) delves further into the topic and establishes that serial acquirers outperform when acquiring a private firm while underperforming when acquiring a public firm. Their findings also report a positive relationship between target size and returns, mainly when the payment method involved is stock. Furthermore, Ismail (2008) highlights that, in addition to factors such as size and relative size, the difference in performance between serial and non-serial acquirers can be attributed to the payment method. Specifically, his research indicates that single acquirers generate higher returns than serial acquirers in equity transactions.

Scholars consider behavioral reasons to be equally crucial in understanding the performance differences between acquirers. Specifically, several studies have analyzed the influence of hubris on the performance of serial acquirers, particularly following successful first acquisitions. Ismail (2008) found evidence of diminishing returns for successful first-time acquirers. Similar results were also observed in previous research by Billet and Qian (2005), who identified negative wealth effects for serial acquirers after the development of acquisition experience. Giannopoulos, Khansalar and Neel (2017) further support these findings, reporting diminishing returns exhibited by successful first-time acquirers, indicating the presence of hubris. It is worth noting that the studies mentioned above are also in line with the diminishing returns hypothesis, which states that the most favorable opportunities are typically realized in the initial acquisitions (Giannopoulos, Khansalar and Neel, 2017).

Conversely, when examining the performance of unsuccessful first-time acquirers, many studies are consistent with the learning theory. Previously overlooked in research, Aktas, de Bodt, and Roll (2009) highlighted the importance of the learning theory by proposing a formal designation with the CEO learning hypothesis. This theory suggests that unsuccessful first-time acquirers tend to learn from their mistakes and improve their subsequent acquisitions. Ismail's (2008) findings also support this theory, indicating a pattern of improving returns among first-time unsuccessful acquirers. Contributing to this theory, Giannopoulos, Khansalar and Neel (2017) argue that the learning hypothesis can be experienced subsequent to hubris, suggesting that hubris is not permanent and that subsequent acquisitions may produce improved results. However, it is important to acknowledge that the CEO learning theory also introduces the possibility of a potential winner's curse. Indeed, as elaborated in Section 2.2, experienced CEOs

may engage in more aggressive acquisition strategies, which can result in a natural decline in performance.

What emerges as significant is that both hubris and the CEO learning theory are essential to the outcome of the first transaction. While hubris is associated with diminishing returns after successful first acquisitions, the CEO learning theory suggests that learning from mistakes can lead to improved performance in subsequent acquisitions.

Furthermore, the variability in the rate of acquisitions (Laamanen and Keil, 2008), the extent of managerial control acquired through the deal (Hossain, Pham and Islam, 2021), and the announcement of the acquisition program (Giannopoulos, Khansalar and Neel, 2017) have also been identified as potential explanations for the differing performance observed in serial and non-serial acquisitions.

2.4 Hypotheses Development

The existing body of literature on M&A has predominantly focused on the US and Canadian markets, with limited attention given to the Swedish market. Although Sweden's market may be relatively minor, it is the largest in the Nordic region and offers a distinct perspective on regulations, agency issues, and governance systems. Notably, Swedish firms tend to have lower levels of ownership concentration compared to other European countries while a higher ownership concentration compared to the US, which has been the primary focus of the existing research in this area. This is noteworthy because previous studies have suggested that ownership concentration may affect the post-acquisition performance of firms (Bhaumik and Selarka, 2012). Therefore, characteristics of the Swedish market suggest that M&A outcomes in Sweden may differ from those reported in the existing literature.

Furthermore, research on serial and non-serial acquirers in Sweden is minimal, particularly regarding post-acquisition performance. Existing literature on the Swedish market primarily focuses on the trend of “M&A compounders”, where frequent acquisitions of small, quality firms at reasonable multiples have become a core strategy for many firms. These repeated acquisitions enhance managers’ expertise and improve post-acquisition performance (Kujala, 2021). Although “M&A compounders” may offer a potential for diverging findings compared to studies

conducted in other countries, they are expected to have a minimal impact on our research due to our specific sample selection criteria, outlined in Section 4.1.

The discussion of the Swedish market's characteristics and “M&A compounders” is intended to provide the relevant context for this study. Nevertheless, this study aims to investigate the long-term performance of serial and non-serial Swedish acquirers, thereby addressing the research gap regarding the Swedish market.

A review of the existing literature indicates that while scholars have contrasting perspectives on acquirers' post-acquisition performance, most have reported negative long-term returns from acquiring firms. Moreover, the majority of research suggests that single acquirers outperform their serial counterparts. With this in mind, we have developed the following hypotheses to guide our analysis:

H1: *Swedish public acquirers have negative abnormal long-term returns from their acquisitions*

H2: *Single acquirers outperform serial acquirers in Sweden in the long term*

3. Methodology

3.1 Event Studies

Event studies are extensively used in M&A research as they are very helpful in measuring the impact of specific events such as mergers, acquisitions, and earnings announcements both on a short and a long-time horizon. Thus, they are widely employed in determining the impact of economic events on a firm's value and measuring post-acquisition stock performance. Event studies also play a crucial role in research because, since they examine whether the post-event abnormal returns of a selected sample of firms are statistically different from zero, they enable testing of market efficiency. In fact, the persistence of non-zero abnormal returns following a specific event is inconsistent with market efficiency (Kothari and Warner, 2007).

The history of event studies is extensive, dating back to an article published by Dolley in 1933, though not widely spread until Ball and Brown (1968) and Fama, Fisher, Jensen, and Roll (1969) introduced them to a broader audience. Although there were minor advancements in the methodology over the subsequent years, Ball and Brown (1968) and Fama et al. (1969) established the methodology that remains in use today. Thereafter, many studies (see, e.g., Brown and Warner, 1980; Brown and Warner, 1985) focused on modifying and refining the original model (MacKinley, 1997). Nevertheless, while new studies introduce alterations and improvements, scholars largely agree on the statistical properties of event study methods (Kothari and Warner, 2007).

The introduction and adoption of the event study methodology have been a pivotal point not only in finance research but it has also impacted related fields. Although its use was only limited to the areas of investments and accounting for measuring the reaction of stock prices to earnings announcements, it has proven to be valuable also in law and economics for estimating the effect of regulations and damages in legal liability cases (MacKinley, 1997; Binder, 1998; Kothari and Warner, 2007).

While event studies lack a unique methodological framework, MacKinley (1997) presents a series of steps that form the basis of a comprehensive event study and serve as a reference for research. The first step is to define the event and determine the event window, which is the

period over which abnormal returns are measured and analyzed. The event window might consist solely of the day of the event, or it might be expanded to include several days before and after the announcement. Including prior days is necessary to account for the potential effect of rumors and information leakage, a common occurrence in M&As. The inclusion of days subsequent to the event is to capture the price effects of deals announced after the markets close. Following this, selection criteria must be established to identify the firms to be studied, although data availability might impose limitations. The third step involves calculating abnormal returns necessary for measuring the event's impact. Abnormal returns are defined as the difference between the actual return and the expected return of a security. Abnormal returns modeled after the market model are given by:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (1)$$

(where R_{it} are the actual returns).

Although more sophisticated models have been developed, the market model is still widely used. Several scholars argue that, since with this model the expected returns are conditional as they are given by the market, it yields similar results compared to the more sophisticated ones (Brown and Warner, 1985; MacKinlay, 1997; Fama, 1998).

Nonetheless, the estimation window, the period over which the model for the expected returns, needs to be estimated. A typical choice for event studies using daily data and the market model is 120 days prior to the event (MacKinley, 1997). Moreover, MacKinley suggests that the estimation and event windows should not overlap. Once the estimation window has been defined and normal returns are calculated, abnormal returns can be measured. Subsequently, the measured abnormal returns are subjected to statistical testing and interpreted accordingly.

3.2 Buy-and-Hold Abnormal Returns

To account for the realization of the possible synergies, economies of scale, and other drivers of acquisitions, we opted to utilize the buy-and-hold abnormal return (BHAR) method to measure the post-acquisition performance of the acquirers in our sample. The BHAR method has been widely adopted in numerous long-term event studies, leading to its establishment as the standard approach for analyzing such studies. Also known as the characteristic-based matching approach,

it is defined as the measurement of abnormal returns obtained in investing in all companies that have undergone an event and then selling it at a predetermined specified holding period, as opposed to investing in similar companies that did not undergo this event (Mitchell and Stafford, 2000). In essence, the BHAR method involves evaluating the companies' stock price after the announcement date and comparing it with the expected return. According to Barber and Lyon (1997), Lyon, Barber and Tsai (1999), and Kothari and Warner (2007), this approach is superior to other methods involving periodic rebalancing, as it perfectly captures investor experience.
The empirical method for finding BHARs is introduced in the following equation (2):

$$BHAR_{i\tau} = \prod_{t=1}^{\tau}\left[1 + R_{it}\right] - \prod_{t=1}^{\tau}\left[1 + E(R_{it})\right] \quad (2)$$

Moreover, Barber and Lyon (1997) propose a t-test for testing the null hypothesis that the average BHAR is equal to zero for a sample of firms, utilizing the following test statistics:

$$t_{BHAR} = \frac{\overline{BHAR_{it}}}{\sigma(BHAR_{it})/\sqrt{n}} \quad (3)$$

where $\overline{BHAR}_{it}$ is the sample average and $\sigma_{BHAR_{it}}$ the cross-sectional sample standard deviation.

The test statistic specified in Equation (3) is utilized in this study to test hypothesis H1.

Prior research has suggested that the most suitable benchmark for the BHAR model is to match all companies to similar firms that have not undergone an event (e.g., Barber and Lyon, 1997). While this approach would be feasible in the US market, it may prove impractical and almost impossible to find suitable matching firms for the Swedish market due to its size. Therefore, we propose using the market model, whereby the Stockholm Stock Exchange market index (OMXS30) serves as the market benchmark for expected returns, as per the following formula:

$$E(R_{it}) = \widehat{\alpha}_i + \widehat{\beta}_i(R_m) \quad (4)$$

Given the exclusive focus of our sample on Swedish acquirers, the OMXS30 is the most appropriate market index. Furthermore, as both the OMXS30 and the individual stock returns are denominated in the same currency, the impact of currency fluctuations on the measures is minimized.

In addition, Sweden is not a closed market, meaning that global events also affect the Swedish market. Indeed, the graph movements for the Swedish stock market index closely mirror the MSCI World index (Appendix 5). The price data and returns for OMXS30 were derived from the S&P Capital IQ and DataStream databases covering the period from 2000 to 2022.

To avoid returns omission, we derived α and β from an estimation window of 6 months prior to the announcement that would not overlap with the estimation window. The same formula (4) was used to obtain the corresponding α and β to each acquisition observation.

In their research, Barber and Lyon (1997) employed an event window ranging from one to five years to measure their BHAR. However, we argue that such a long period will introduce more noise to the results. Hence, we opted for an event window of one year. For serial acquirers, a time period longer than one year would result in significant overlapping event windows, necessitating the removal of some events from the sample. As our study focuses on serial acquisitions, we deemed it more appropriate to shorten the event window to one year.

3.3 Welch's t-test

To test the second hypothesis H2, and to conduct a comparison of the BHARs between serial and single acquirers, Welch's t-test, also known as the Unequal Variance t-test, was employed, and the associated p-value was calculated. Welch's t-test allows a comparison of the averages of two samples with different standard deviations, making the most suitable approach for our study where the original sample was divided into serial acquirers and non-serial acquirers subsamples to determine their respective BHARs. The t-statistic formula for Welch's t-test is introduced below:

$$t_{Welch} = \frac{mean1 - mean2}{\sqrt{\frac{var1}{n1} + \frac{var2}{n2}}} \quad (5)$$

(where numbers 1 and 2 correspond to the two different subsamples)

To obtain the corresponding p-value, it is necessary to derive the appropriate degrees of freedom through the application of the following formula:

$$df_{Welch} = \frac{\left(\frac{var1^2}{n1} + \frac{var2^2}{n2}\right)^2}{\frac{\left(\frac{var1^2}{n1}\right)^2}{n1-1} + \frac{\left(\frac{var2^2}{n2}\right)^2}{n2-1}} \quad (6)$$

3.4 Regression Specification

Explanatory variables are widely utilized in scholarly literature to control for and explain the research findings (see, e.g., Ismail, 2008). Our study sought to further analyze our results by incorporating company size, industry, and relative size as explanatory variables. Additionally, we aimed to control for the cross-border characteristics and timing of the deals by using target countries and announcement years as explanatory variables. These variables may offer insights into the sources of variation in BHAR averages. These explanatory variables were incorporated into an Ordinary Least Squares regression using dummy variables, as per the following formula:

$$BHAR_i = \alpha + \beta_1 Serial_i + \beta_2 Size_i + \beta_3 Industry_i + \beta_4 Relsize_i + \beta_5 Crossborder_i + \beta_6 Timing_i + \gamma_j + \delta_t + \epsilon_i, \quad (7)$$

where γ_j and δ_t are industry effects for *j* industries and time effects for *t* periods, respectively.

Despite their relevance in the existing literature, the inclusion of deal characteristics, such as payment method and relatedness (Section 2.3.2) as control variables, was not feasible in our study due to the significant reduction in sample size that would have ensued.

A comprehensive discussion regarding the definition and application of the control variables employed can be found in Section 4.5.

3.5 Issues with Long-Term Event Studies

As discussed in Section 3.1, event studies have proven useful in short and long-term time horizons. To be considered long-term, studies typically assess how abnormal returns evolve over the course of one to five years, as stated by Ang and Zhang (2011).

Over the years, the increase in long-term event studies has led to the expected rejection of the Efficient Market Theory. Analyzing 200 long-term event studies, Kothari and Warner (2007) reported that the majority contradicted the Efficient Market Hypothesis. Fama (1998) provided a

potential explanation for the contradiction by proposing that long-term anomalies may emerge due to the methodology employed, which aligns with the principles of market efficiency theory. Consequently, adjusting the methodological techniques can lead to the resolution of these anomalies.

Notwithstanding methodological improvements, long-term event studies still face limitations, leading to unreliable inference (Kothari and Warner, 2007). Specifically, errors and misinterpretations can arise from inadequate test power, the use of biased benchmarks for abnormal returns measurement, and issues in analysis specification (Kothari and Warner, 2007; Ang and Zhang, 2011).

Moreover, the BHAR methodology is subject to three primary drawbacks: new listing bias, rebalancing bias, and skewness bias, all of which may negatively impact returns and the associated t-statistics. Proposed solutions, such as matching sample firms to control firms with similar size and book-to-market ratios (Barber and Lyon, 1997) or using bootstrapping techniques (Lyon, Barber and Tsai, 1999; Kothari and Warner, 2007), still possess limitations and fail to ensure the reliability of findings.

Despite the potential limitations and issues associated with conducting a long-term event study and using the BHAR methodology, which could impact the reliability of the results, we maintain that this methodology is the most suitable approach for addressing our research question.

4. Data

4.1 Data Sources and Selection

The acquisition data collected for this study was obtained from the Zephyr database, covering the period between January 1st 1997 and April 5th 2022. In order to ensure the inclusion of relevant transactions, we imposed specific criteria as follows:

i. The acquirer is located in Sweden
ii. The acquirer is listed or delisted, while the target can be listed, unlisted, or delisted
iii. The deal status is marked as "completed" on the database
iv. The minimum deal value is set at 100M SEK
v. The acquirer obtains at least 51% of the target's shares

The selected time frame was chosen to encompass multiple business cycles and a recent period characterized by volatile market conditions. In order to measure performance, it was necessary to utilize market prices. As a result, all the acquiring firms included in the sample are publicly traded. The decision to establish a minimum deal value threshold of 100 million SEK was driven by the objective of capturing transactions that would substantially impact the acquiring company, thereby excluding smaller deals. Furthermore, the prerequisite of a minimum of 51% in final ownership stake was implemented to ensure that the acquiring firms attained a controlling power over the target firms.

Refinitiv Eikon's DataStream was used to collect the daily price data for this study. Specifically, we derived the daily price data one day prior to the announcement of the acquisition and one year after each acquisition announcement. The prices obtained were based on the Total Return Index from DataStream, which includes the total dividends paid by the companies in addition to the price changes. We maintain that employing this approach allows for better comparability among the price data samples.

Following the established criteria, we initially obtained data for 700 acquisitions from the Zephyr database. However, observations labeled as "Completed Assumed" were removed to ensure that the acquisitions were valid and completed. Additionally, as total assets data was necessary to

control for company size, further observations had to be eliminated if the requisite data were unavailable.

Subsequent to the data-cleaning steps, DataStream provided daily price data for only 211 acquisitions. Moreover, due to the presence of outliers, the data were trimmed by removing observations that deviated from the mean by more than three standard deviations, resulting in an additional loss of three observations. It is noteworthy that although the timeframe for data collection spanned from 1997 to 2023, the data-cleaning process ultimately resulted in a sample of 208 observations, solely encompassing a period of time from 2000 to 2022. Consequently, this specific time interval is used in this study.

Despite this reduction, we maintain that the remaining data is sufficient to conduct a robust statistical analysis.

4.2 Serial Acquirer Definition

Per Section 2.3, there is no standard definition for serial acquirers in the literature. Different scholars have proposed several definitions. For instance, Klasa and Stegemoller (2007) define a firm as a serial acquirer if it engages in five or more acquisitions within 12 months, with no more than 24 months between any two acquisitions. On the other hand, Fuller, Netter, and Stegemoller (2002) maintain that a firm must carry out at least five deals over any 3-year window to be considered a serial acquirer.

Other researchers, such as Giannopoulos, Khansalar, and Neel (2017) and (Billett and Qian, 2008), define serial acquirers as firms that have made at least two acquisitions in a two- or five-year window, respectively. Ismail (2008) provides a more ambiguous definition, depicting serial acquirers as firms that acquired more than one company over the 20 years examined.

In this study, we define serial acquirers as companies that have made at least three acquisitions within a time frame of 20 years, with at least two acquisitions being no more than 24 months apart. To our knowledge, this definition of serial acquirers has not been used in previous research, as we had to adapt the definitions of previous studies to suit the Swedish market. Our definition was partly inspired by Giannopoulos, Khansalar, and Neel (2017) and Ismail (2008). We argue that our sampling approach can identify companies with an acquisition strategy and distinguish them from single acquirers in the dataset.

4.3 Data Overview and Descriptive Statistics

The final data sample included 208 acquisitions carried out by 103 different companies (Table 1). Of these acquisitions, 97 were made by 17 different serial acquirer firms. This suggests that slightly under 17% of the companies in our sample executed nearly half of the acquisitions. The Swedish M&A market has a significant number of companies engaging in multiple acquisitions. This characteristic contributes to the inherent interest in examining serial acquirers.

Table 1. Sample Overview

	Full Sample	**Single Acquirers**	**Serial Acquirers (3+)**
Number of Deals	208	111	97
Unique Firms	103	86	17
Geographical Coverage			
Domestic	56	39	17
Cross-border	152	72	80

Table 1 presents the final sample for single and serial acquirers between 2000 and 2022 in Sweden.

The sample encompassed a wide range of deal sizes exceeding 100 million SEK. The average deal size, as presented in Table 4, was €331,170,566.

Out of the total 208 acquisitions included in the sample, 152 involved cross-border transactions, indicating that the target firm's country was outside of Sweden (see Tables 1 and 2). Among the cross-border acquisitions, 93 were carried out in Europe, with 33 specifically targeting firms in other Nordic countries. North America emerged as another popular target country, accounting for 49 transactions. In contrast, only 56 were domestic acquisitions, suggesting Swedish companies' clear interest in expanding their operations globally.

Table 2. Target Countries Overview

	Number of Deals
Full Sample	208
Domestic	56
Cross-border	152
Europe	93
(Nordic Countries excluding Sweden)	*33*
North America	49
South America	1
Asia	6
Oceania	3

Table 2 presents an overview of the target countries of the final sample of acquisitions between 2000 and 2022 in Sweden.

Regarding the industries of the acquirers and the corresponding acquisition activity, industry-specific data has been presented in Table 3. The sample includes acquisitions from all 11 industries classified according to the Industry Classification Benchmark (ICB). Notably, the *Industrials* industry recorded the highest number of acquisitions, totaling 65 transactions. Between serial and single acquirers, the *Technology* and *Consumer Staples* industries primarily saw acquisitions made by single acquirers. Conversely, the *Telecommunications* and *Utilities* industries exhibited a prevalence of acquisitions executed by serial acquirers.

Table 3. Acquirer Industry Overview

	Number of Deals	Serial	Single
Full Sample	208	97	111
by Industry Classification Benchmark (ICB)			
Technology (10)	15	-	15
Telecommunication (15)	25	23	2
Health Care (20)	27	19	8
Financials (30)	8	3	5
Real Estate (35)	15	5	10
Consumer Discretionary (40)	19	6	13
Consumer Staples (45)	5	-	5
Industrials (50)	65	23	42
Basic Materials (55)	24	14	10
Energy (60)	1	-	1
Utilities (65)	4	4	-

Table 3 presents an overview of the industries of the final sample of acquirers in Sweden.

The time series of the full sample reveals that the volume of acquisitions in the sample orderly follows the volume of all Swedish acquisitions over time (see Appendix 1 and 8). The presence of clustering, particularly during the early 2000s, may influence the final BHARs. Therefore, it is of interest to incorporate the time effect as an independent variable in the regression analysis.

4.5 Control Variables Description

As discussed in Section 3.4, several control variables were incorporated to enrich the analysis and further examine the results. Descriptive statistics of these variables are presented in Table 4.

The natural logarithm of the acquiring companies' total assets at the announcement date was utilized to account for company size and to explore the impact of size. This was done to determine whether larger companies possess better capabilities for successfully carrying out acquisitions, as the acquiring companies' size may influence the realization of synergies and other post-acquisition operations in the sense of capabilities.

To control for industry-specific variations, the acquirers' sample was divided into industries using the Industry Classification Benchmark (ICB) classification (see Table 3). This allows for differentiation between industries, as acquisitions in various industries may significantly differ in characteristics and returns. The findings of industry-specific variation in BHARs may provide insights for future research in the Swedish market, particularly if the different industries significantly affect the returns.

Controlling for relative size could provide additional information regarding the opportunities and challenges the acquiring company faces beyond the effect of company size. The explanatory variable was derived by dividing the deal value by the acquiring company's total assets in the same currency. This variable contrasts the deal value, usually included in the acquiring company's balance sheet, with the acquiring company's prior-deal balance sheet. Relative size as an explanatory variable may provide valuable insights into the ability of companies acquiring relatively large companies to manage the acquisition effectively and the ability of companies acquiring relatively small firms with lower associated risks.

To account for cross-border characteristics, we adopted domestic acquisitions as the base case and introduced dummy variables for cross-border acquisitions. This approach allows the

comparison between domestic and globally diversified acquisitions, which can be particularly interesting when examining the relatively small Swedish market. Moreover, controlling for cross-border characteristics can also shed light on the post-performance of cross-border acquisitions, where buyers and sellers may have diverse cultural and geographical backgrounds.

To control the timing of the acquisitions, we incorporated dummy variables for the announcement years of the acquisitions. We opted to divide the sample's timeframe into twelve different time windows corresponding to the trends and waves of the M&A market in Sweden (see Appendix 1). This division allowed us to account for the impact of various cycles of the waves and determine whether the returns differ during out-of-wave and in-wave periods.

Table 4 presents descriptive statistics for the control variables. By examining this table, it can be observed that, according to the ICB industry classification, acquiring companies within the *Utilities* industry exhibit, on average, the highest negative BHAR, followed by the *Health Care*, *Consumer Discretionary*, and *Technology* industries. Analyzing the performance over time, it is apparent that acquisitions conducted during the subperiod of *2020-2021* demonstrate the most significant negative BHAR, followed by the subperiods of *2000-2001* and *2002-2003*. Furthermore, the table reveals that during the subperiods of *2006-2007*, *2008-2009*, and *2010-2011*, acquisitions yield, on average, nearly constant BHARs. It becomes evident that the clustering pattern of acquisitions within our sample does not perfectly align with the clustering presented in Appendix 1. This discrepancy is likely attributed to the selection criteria employed for our sample.

Table 4. Descriptive Statistics

Variable	N	Mean	Median	Std. dev.	Min	Max
Pre-deal acquirer total assets (*m*EUR)	208	3433,2	917,9	5363,2	3,6	23 468,2
Deal value/Total assets	208	0,57	0,13	0,12	0,001	20,62
Deal value (thousands €)	208	331 171	60 025	885 880	9 973	7 450 000
BHAR Cross-border 1 year	152	-18,71%	-12,50%	87,12%	-428,86 %	376,30 %
BHAR Technology 1 year	15	-31,99 %	-32,79 %	168,40 %	-313,89 %	376,30 %
BHAR Telecommunication 1 year	25	-4,37 %	6,21 %	66,16 %	-241,91 %	98,08 %
BHAR Health Care 1 year	27	-47,28 %	-13,88 %	136,99 %	-428,86 %	173,52 %
BHAR Financials 1 year	8	-29,57 %	-8,36 %	77,70 %	-206,22 %	41,31 %
BHAR Real Estate 1 year	15	-17,82 %	5,93 %	91,00 %	-241,42 %	68,03 %
BHAR Consumer Disc. 1 year	19	-36,16 %	-23,78 %	75,65 %	-223,37 %	109,24 %
BHAR Consumer Staples 1 year	5	14,27 %	10,73 %	51,27 %	-61,81 %	72,88 %
BHAR Industrials 1 year	65	-13,03 %	-14,34 %	44,94 %	-152,45 %	78,75 %
BHAR Basic Materials 1 year	24	-6,74 %	-4,65 %	49,64 %	-87,73 %	101,68 %
BHAR Energy 1 year	1	13,38 %	13,38 %	-	13,38 %	13,38 %
BHAR Utilities 1 year	4	-56,28 %	-33,21 %	150,92 %	-256,64 %	97,97 %
BHAR 2000-2001 1 year	4	-43,29 %	6,50 %	108,81 %	-206,22 %	20,07 %
BHAR 2002-2003 1 year	32	-44,47 %	-22,41 %	95,16 %	-256,64 %	97,97 %
BHAR 2004-2005 1 year	25	-3,24 %	5,88 %	72,20 %	-235,24 %	173,52 %
BHAR 2006-2007 1 year	18	-21,20 %	-15,01 %	58,23 %	-152,45 %	69,08 %
BHAR 2008-2009 1 year	10	-18,62 %	-27,72 %	49,37 %	-88,61 %	66,73 %
BHAR 2010-2011 1 year	24	-19,63 %	-12,80 %	38,31 %	-95,01 %	75,91 %
BHAR 2012-2013 1 year	7	-15,85 %	-15,78 %	30,11 %	-60,65 %	17,92 %
BHAR 2014-2015 1 year	12	-26,47 %	-4,95 %	128,62 %	-400,71 %	109,24 %
BHAR 2016-2017 1 year	27	-2,92 %	7,38 %	85,73 %	-266,02 %	153,25 %
BHAR 2018-2019 1 year	22	12,76 %	5,81 %	98,82 %	-184,16 %	376,30 %
BHAR 2020-2021 1 year	22	-52,15 %	-15,55 %	123,72 %	-428,86 %	68,03 %
BHAR 2022 1 year	5	-23,09 %	-22,21 %	81,70 %	-145,93 %	77,21 %

Table 4 presents the descriptive statistics for the control variables

5. Results and Analysis

5.1 Average BHAR for the Full Sample of Swedish Acquirers

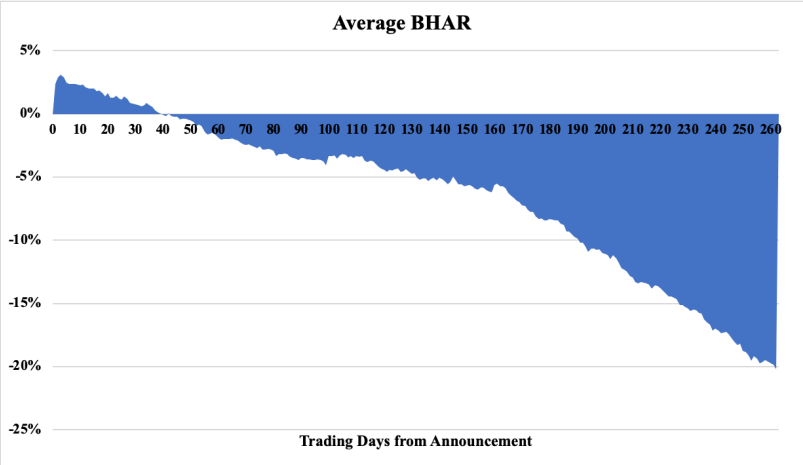
The BHAR model yields abnormal returns that are calculated by compounding a company's stock returns followed by subtraction of the expected compounded returns following Formula 2, which has previously been introduced in this thesis. For the 208 final observations, this model yielded an average BHAR of -20,22% (see Table 5). This means that, on average, Swedish acquirers experience underperformance of over 20 percentage points compared to their expected returns one year after their acquisition announcement. As previously outlined in Section 4.1, a trimming procedure was used to address outliers, resulting in the elimination of three observations. It is important to note that had the trimming not been applied, the average BHAR would have been even more substantial at -35%. To gather further insight, we included a control period of 6 months as another event window to derive additional BHARs. For the 6-month control period, we found an average BHAR of -4,70%. This would also seem to suggest an underperformance of the Swedish acquirers but with a slightly lesser negative. To examine the statistical significance of our BHAR results, we utilized the same t-statistic as Barber and Lyon (1997) had used in their research. The formula for t-statistics is the previously introduced Formula 3.

The t-statistic was derived from the average BHARs and the p-values were calculated consequently. The final values can be observed in Table 5. The results are presented for the initial event window of 1 year and the 6-month control period. Figure 1 illustrates the evolution of the average BHAR.

Table 5. BHAR Results

	Mean	**Std. Dev.**	**t-stat.**	**p-value**	**Median**	**Max**	**Min**
BHAR 1 year	-20,22%	87,08%	-3,35	0,0005	-10,05 %	376,30 %	-428,86 %
BHAR 6 mon.	-4,70%	38,01%	-1,79	0,038	-1,46 %	141,88 %	-160,46 %

Figure 1. Average BHAR Results



To further analyze the robustness of the results, we tested for normality, multicollinearity, and heteroscedasticity in our sample (see Appendix 3, 6, and 7). Normality was rejected and multicollinearity was apparent in only one of the explanatory variables, the *Industrials* industry dummy variable. The observed correlation may be attributed to the presence of acquisitions *Industrials* acquirers, which contributed to over 31% of the total number of acquisitions. To control for multicollinearity, we conducted a new regression and examined the VIF scores without the *Industrials* dummy variable. We failed to reject the null hypothesis on the White test for homoscedasticity, which suggests an absence of significant heteroscedasticity (see Appendix 7).

5.2 Swedish Serial vs. Single Acquirers

The final sample was divided into two subsamples representing two groups of acquisitions made by serial and single acquirers. We found that, on average, Swedish serial acquirers experience an underperformance of -19,53 percentage points compared to their expected returns. On the other hand, single acquirers experience slightly greater underperformance of -20,82 percentage points on average. These two results are, however, very close to each other and do not seem to prove either group's outperformance. Both of the subsamples' average BHARs had an increased p-value compared to the base sample's average BHAR. Both could still be interpreted with a confidence interval of 90%. However, this is likely due to the split number of observations.

The average BHARs of the two subsamples were tested with Welch's t-test (Equation 5), and the results are presented in Table 6. Welch's t-test appeared to reject the null hypothesis and thus suggest no significant difference between serial and single acquirers' performance, as contemplated above.

Table 6. BHAR Results for Serial and Single

	Mean	Std. Dev.	t-stat.	df	p-value
BHAR Single 1 year	-20,82%	93,31%	-2,35	110	0,010
BHAR Single 6 months	-3,78 %	39,01 %	-1,02	110	0,155
BHAR Serial 1 year	-19,53%	79,84%	-2,41	96	0,009
BHAR Serial 6 months	-5,74 %	37,02 %	-1,53	96	0,064
Welch's test 1 year	-	-	-0,11	200,36	0,457
Welch's test 6 months	-	-	0,37	206,91	0,645

To conduct a thorough examination into the differences between serial and non-serial acquirers while also accounting for potential performance determinants, our study employed characteristics of the acquisitions as explanatory variables through the use of dummy variables within a linear regression framework. The findings reveal that the coefficients of the dummy variables used in the regression analysis are not statistically significant. This lack of statistical significance can be attributed to the inherent noisy and volatile nature. Stock returns are influenced by many factors, including macroeconomic trends, local and global political events, industry-specific news, and the reputation of companies. Consequently, attempting to explain the volatility of stock returns using only a limited set of variables becomes challenging, thereby limiting the possibility of definitive conclusions regarding their relationship. Concerning the comparison between serial and single acquirers, we incorporated a dummy variable representing serial acquirers. The coefficient of this dummy variable is once more insignificantly different from zero, corroborating the findings of the univariate test and suggesting the absence of any discernible difference between single and serial acquirers. Furthermore, the subgroups of serial and single acquirers failed to exhibit statistical significance. The lack of statistical significance can be attributed again to the nature of stock returns. The nature of stock returns is further visible in the significantly low values of R^2 (see Tables 7 and 8). Nevertheless, the inclusion of explanatory variables remains valuable in exploring potential factors contributing to the variable nature of returns.

The results for the 1-year BHARs are presented in Table 7, while the results for the controlling 6-month BHARs are presented in Table 8.

Table 7. 1-year BHAR Regression Results for Control and Explanatory Variables

	Full Sample		Serial		Single	
	Coeff.	**t-stat.**	**Coeff.**	**t-stat.**	**Coeff.**	**t-stat.**
Constant	-1.2691	-1.621	-1.6118	-1.232	-0.1490	-0.110
Serial	-0.0435	-0.268	-	-	-	-
Size	0.0634	1.435	0.1113	1.381	-0.0031	-0.045
Industries - Base Utilities						
Technology	-0.1142	-0.423	-	-	-0.1113	-0.356
Telecommunication	0.0063	0.026	-0.2057	-0.734	0.4319	0.562
Health Care	-0.2385	-1.111	0.1037	0.394	-0.6806	-1.699
Real Estate	0.0436	0.149	-0.7602	-1.312	0.2882	0.761
Consumer Discretionary	-0.0647	-0.262	-0.1253	-0.304	-0.2421	-0.670
Consumer Staples	0.1207	0.280	-	-	0.1760	0.366
Basic Materials	0.0789	0.366	-0.0055	-0.019	0.1204	0.341
Energy	0.6348	0.625	-	-	0.2763	0.216
Financials	-0.1096	-0.316	-0.0163	-0.027	-0.0631	-0.123
Relative Size	0.0540	1.274	-0.1620	-1.449	0.0442	0.841
Cross-border	0.0376	0.229	0.0976	0.375	0.0004	0.002
Timing - Base 2022						
2000-2001	0.0938	0.146	0.2250	0.223	-0.3764	-0.401
2002-2003	0.0014	0.003	-0.3173	-0.496	-0.3265	-0.398
2004-2005	0.3570	0.726	0.0760	0.114	0.1206	0.148
2006-2007	0.1968	0.387	0.1229	0.180	-0.3461	-0.395
2008-2009	0.2359	0.434	-0.4324	-0.593	0.2579	0.292
2010-2011	0.1784	0.363	-0.2039	-0.313	-0.0139	-0.017
2012-2013	0.2746	0.478	-0.1715	-0.219	-0.2144	-0.228
2014-2015	0.0727	0.136	-0.7857	-1.084	0.3982	0.470
2016-2017	0.3736	0.762	-0.2111	-0.295	0.1058	0.127
2018-2019	0.5283	1.058	-0.1306	-0.182	0.3107	0.377
2020-2021	-0.1155	-0.236	-0.1272	-0.199	-0.4339	-0.539
R^2	0.090		0.219		0.179	
Adjusted R^2	-0.029		0.013		-0.038	
F-statistic	0.757		1.064		0.823	
N	208		97		111	
Jarque-Bera	201.932		20.251		82.941	

Table 8. 6-month BHAR Regression Results for Control and Explanatory Variables

	Full Sample		Serial		Single	
	Coeff.	**t-stat.**	**Coeff.**	**t-stat.**	**Coeff.**	**t-stat.**
Constant	-0.4490	-1.295	-0.6143	-1.008	0.1331	0.228
Serial	-0.0580	-0.807	-	-	-	-
Size	0.0179	0.917	0.0315	0.838	-0.0085	-0.292
Industries - Base Utilities						
Technology	-0.1080	-0.904	-	-	-0.0795	-0.595
Telecommunication	0.0085	0.080	-0.0498	-0.382	-0.1343	-0.408
Health Care	-0.0559	-0.588	0.0054	0.044	-0.1270	-0.740
Real Estate	-0.0535	-0.414	-0.3755	-1.392	0.1056	0.651
Consumer Discretionary	-0.0398	-0.364	-0.0507	-0.264	-0.1208	-0.780
Consumer Staples	0.0559	0.293	-	-	0.0927	0.450
Basic Materials	0.0338	0.354	-0.0557	-0.426	0.1393	0.921
Energy	0.2003	0.446	-	-	-0.0792	-0.144
Financials	-0.0236	-0.154	0.0140	0.049	-0.0535	-0.244
Relative Size	0.0140	0.744	-0.0560	-1.076	0.0099	0.439
Cross-border	0.0642	0.884	0.0647	0.533	0.0215	0.216
Timing - Base 2022						
2000-2001	0.1322	0.465	0.1991	0.423	-0.1546	-0.384
2002-2003	0.1117	0.518	0.1269	0.426	-0.2423	-0.690
2004-2005	0.2263	1.040	0.1970	0.634	0.0181	0.052
2006-2007	0.1521	0.676	0.2739	0.862	-0.3270	-0.871
2008-2009	0.1939	0.806	-0.0552	-0.163	0.1447	0.382
2010-2011	0.1238	0.568	0.0754	0.249	-0.1030	-0.299
2012-2013	0.0957	0.376	0.1018	0.279	-0.2547	-0.633
2014-2015	0.0932	0.394	-0.1338	-0.396	0.0888	0.244
2016-2017	0.1759	0.810	0.0352	0.106	-0.0674	-0.189
2018-2019	0.2236	1.012	0.0979	0.293	0.0002	0.001
2020-2021	0.1170	0.539	0.1019	0.343	-0.0465	-0.135
R^2	0.049		0.182		0.138	
Adjusted R^2	-0.076		-0.033		-0.090	
F-statistic	0.3897		0.8456		0.6032	
N	208		97		111	
Jarque-Bera	34.268		17.418		12.821	

5.3 Analysis

This thesis offers an overview of the Swedish M&A market from the public acquirers' perspective, spanning over a period covering more than two decades. The sample analyzed includes acquisitions completed in 22 calendar years, featuring acquirers from every industry based on the ICB classifications. These characteristics provide a comprehensive sample employed to compute buy-and-hold abnormal returns. Notably, the average BHARs were found to be negative and different from zero in a statistically significant way. Thus, we find evidence in support of our first hypothesis H1: '*Swedish public acquirers have negative abnormal long-term returns from their acquisitions'*. Accordingly, we can confidently conclude that, on average,

Swedish acquirers experience negative abnormal returns over an event window of one year after the announcement of their acquisitions. This result is broadly consistent with the majority of previous research conducted (e.g., Gregory, 1997; Loughran and Vijh, 1997; Agrawal and Jaffe, 1999), which documented negative abnormal returns for acquiring companies in the long term. Upon comparing the magnitude of our findings to those presented in the reviewed literature, it is worth noting that Gregory (1997) reported the closest magnitude to ours with abnormal returns of -18%. This is followed by Loughran and Vijh (1997), who documented abnormal returns of -15.9%. However, it is important to highlight that these studies employed investigation periods of two and five years, respectively, which differ from the duration employed in our study. In addition, Agrawal and Jaffe (1999) only identified one study, conducted by Malatesta (1983), which utilized an investigation period corresponding to ours. However, the magnitude of the abnormal returns reported by Malatesta (-7.6%) differs significantly from our findings of -20.22%.

Despite the idiosyncratic features of the Swedish market, such as the ownership structure discussed in Section 2.4, our study for Sweden does not reveal results remarkably different from the majority of existing research.

In the analysis of serial and single acquirers in Sweden, the average BHARs were revealed to be closely similar. The evidence of BHARs was ultimately insufficient to establish a difference between the subsamples. Consequently, we do not find support for our second hypothesis H2:'*Single acquirers outperform serial acquirers in Sweden in the long term'*. Therefore, it is clear that Swedish public single acquirers do not outperform serial ones. Multiple factors may contribute to the absence of a significant outperformance between serial and single acquirers. One potential explanation is the variation in the definitions of serial acquirers adopted in the literature. Alternative criteria for the classification of serial acquirers could have produced different results. Moreover, as previously discussed in this thesis, agency problems, hubris, and other behavioral motives affect may both subsample and one more profoundly than the other. While the diminishing returns associated with hubris could potentially influence the performance of the serial acquirers, the value-creating effects of the CEO learning theory might offset this impact. Nevertheless, the impact of CEO learning theory could also be value-destructing, resulting in canceling out its influence on the returns. Thus, this rationale may account for the non-discernable difference in findings between the two subsamples.

The absence of evidence in our study to support the long-term underperformance among serial acquirers in Sweden deviates from the prevailing findings of the existing literature (e.g., Ismail, 2008; Kengelbach et al., 2012; Al Rahahleh and Wei, 2012; Giannopoulos, Khansalar and Neel, 2017; Hossain, Pham and Islam, 2021). However, it is crucial to note that our study also does not find any significant evidence of the outperformance of serial acquirers in the long term. Additionally, it is noteworthy that the majority of the reviewed literature on serial acquisitions primarily focuses on the short-term perspective, thus justifying the diverging results obtained in our long-term study. Furthermore, as highlighted in Section 2.4, these contrasting findings may also be attributed to the Swedish market's characteristics, which differ from other countries, such as the US, which serves as the base for most of the existing literature. Specifically, Sweden's more concentrated ownership structure may provide stability, a greater focus on the long-term, and a stronger alignment of interests between shareholders and management, both for serial and non-serial acquirers. Consequently, it is plausible that Sweden's ownership structure contributes to a more favorable environment for acquirers, regardless of their serial or single status, thereby mitigating the differences in findings observed in prior studies.

In summary, our long-term study reveals that Swedish acquirers exhibit negative returns and there is no evidence of the outperformance of single acquirers compared to serial ones in Sweden. Our empirical findings are inconsistent with the neoclassical theory (Section 2.2), which emphasizes the maximization of a firm's value. In contrast, our results reveal a pattern of value destruction, as evidenced by the negative long-term returns. Nevertheless, our empirical findings may find reconciliation when accounting for behavioral reasons, which offer plausible explanations for these results.

6. Conclusion

This thesis examines the long-term post-acquisition performance of Swedish acquirers subsequent to the announcement of their acquisitions. Specifically, we aimed to address the research question: *"How do Swedish acquirers perform in the long term, and how does the post-acquisition performance of serial acquirers compare to that of non-serial acquirers?"*. To this end, the study initially examines whether acquiring firms in Sweden generate value for their shareholders over the long term and subsequently evaluates the performance of both single and serial acquirers in order to identify which group achieved superior results.

The study's final sample includes 208 acquisitions between 2000 and 2022 in Sweden. The sample was divided into two distinct subsamples, one representing single acquirers and the other serial acquirers, with the latter defined as companies that had undertaken at least three acquisitions during the 22-year timeframe considered, with at least two acquisitions being no more than 24 months apart. Of the total acquisitions, 111 were carried out by non-serial acquirers, while 97 were made by 17 different serial acquirers. An event study methodology was employed to measure the long-term performance of the sample, and the buy-and-hold abnormal return approach was utilized, which revealed statistically significant results. In order to test the robustness of our findings and explore the influence of explanatory factors, a regression analysis was conducted. The selection of explanatory variables was based on the most prevalent factors highlighted in the existing literature: acquirer company size, relative size, industry classification, geographical scope, and acquisition timing.

Our findings for BHAR analysis, consistent with the majority of existing literature, indicate that, on average, Swedish acquirers experience a significant underperformance of over 20 percentage points compared to their expected returns one year after their acquisition announcement. The results for the control period of 6 months also suggest underperformance, although to a lesser extent. The explanatory variables failed to yield statistically significant results regarding the impact of the acquiring companies' different characteristics on the returns. Overall, these findings provide support for our first hypothesis.

However, the findings do not support our second hypothesis regarding the performance of single acquirers versus serial acquirers, as the BHAR of the two subsamples did not exhibit a significant difference. Explanatory variables did not provide any significant insights in this regard either, possibly due to the noisy and volatile nature of stock returns and limitations of the explanatory variables. These findings are inconsistent with the prevailing outcomes reported in previous studies focused on other countries and, as such, are somewhat surprising. Nevertheless, a plausible explanation for our findings may be attributed to the distinctive characteristics of the Swedish market, which is relatively minor in size, coupled with the definition we adopted to identify serial acquirers.

Overall, the study addressed the research question by examining the long-term performance of Swedish acquiring firms. The findings suggest that Swedish acquirers underperform after the announcement of an acquisition, thus destroying shareholder value. However, the study cannot conclusively determine which acquirers, serial or non-serial, perform better in the long run.

In light of the obtained results, we maintain that this thesis has addressed a research gap regarding the long-term post-acquisition performance of Swedish acquirers, encompassing both serial and non-serial. Although the study's findings are relevant to M&A post-acquisition performance, further research is needed to have relevant implications in other contexts. Despite its support from previous studies, the rejection of our hypothesis could serve as a starting point for further research in this area. This may include exploring the underlying reasons for the value destruction observed in Swedish acquisitions.

Moreover, future research could consider an alternative approach to implementing the control firm technique suitable for the US market to smaller markets. This could improve statistical inference by minimizing biases; however, as previously mentioned, the current form of the Swedish market may preclude its implementation.

The data limitations highlighted in this study could also be improved for future research if data accessibility improves.

Another promising opportunity for further research would be to delve deeper into the different industries in Sweden, which may have distinct needs and characteristics for acquisitions. This could allow greater applicability of the findings and determine whether similar outcomes are observed across different industries.

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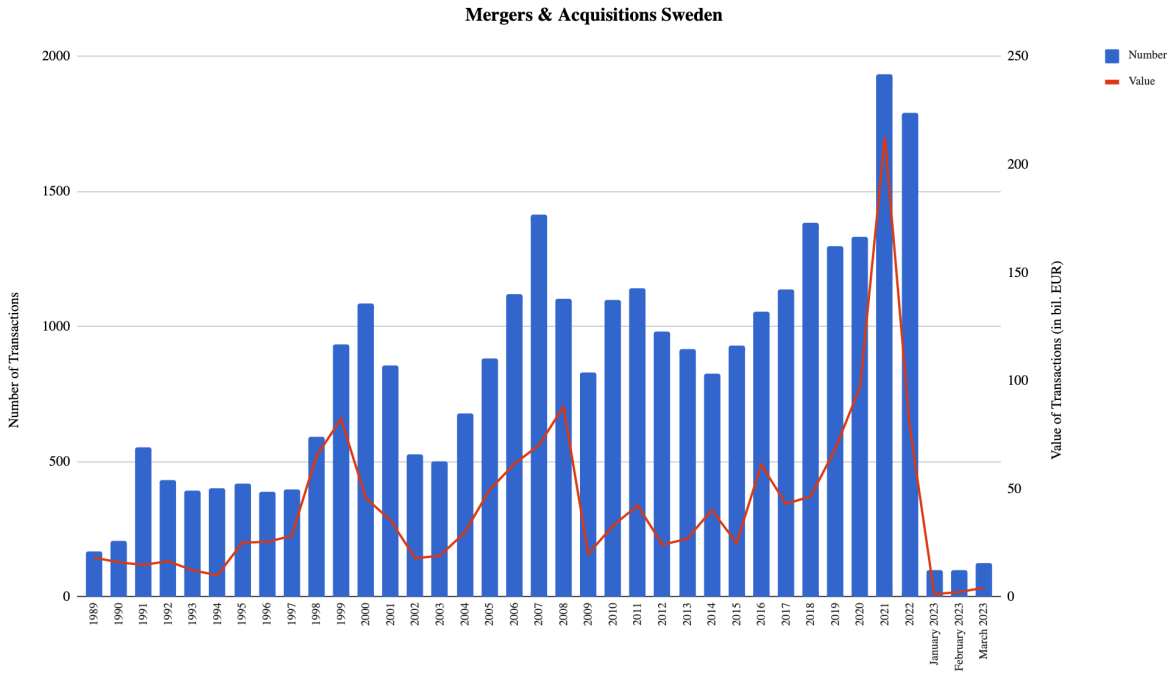
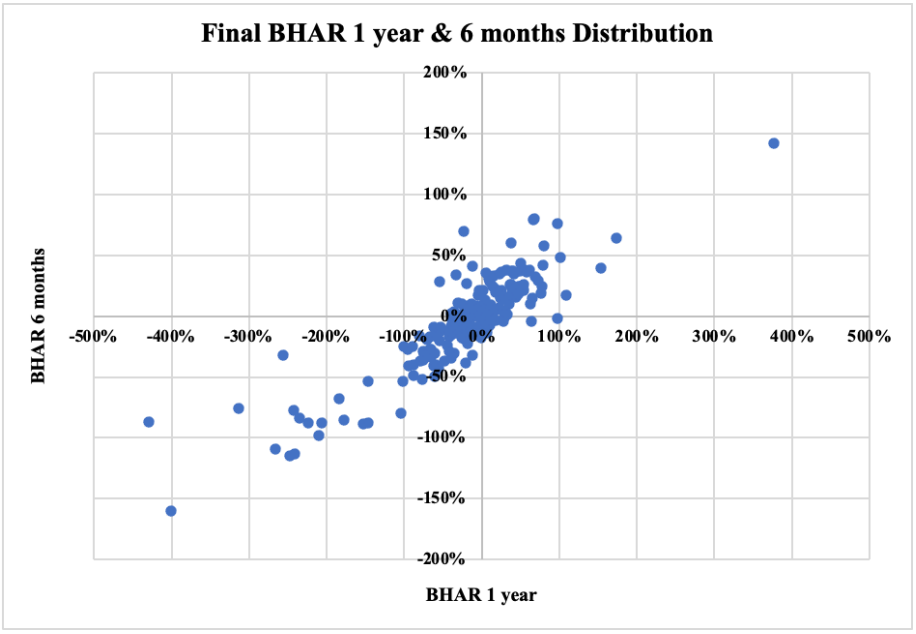
Appendix

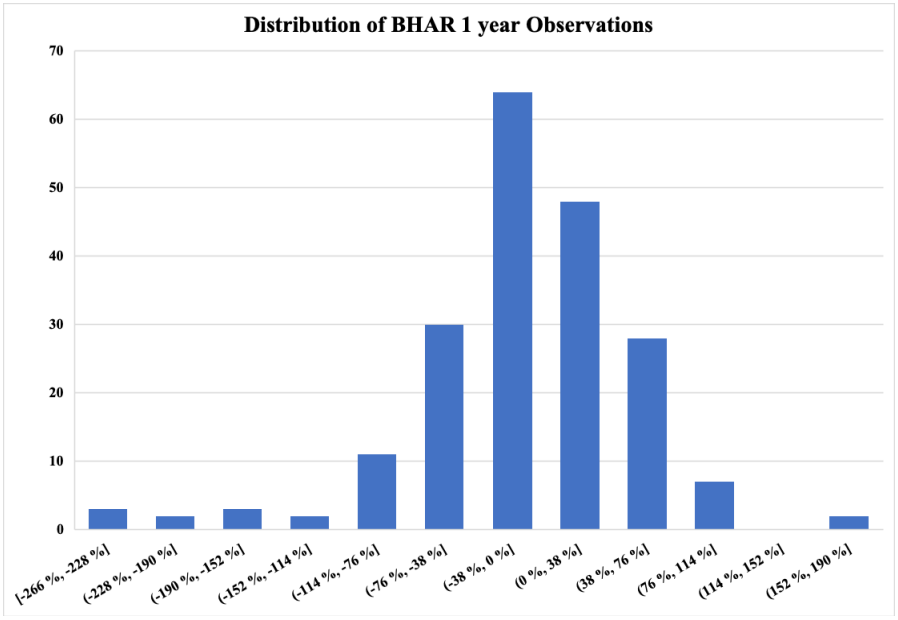
Appendix 1. Number and Value of Mergers and Acquisitions in Sweden from 1989 to 2023 (IMAA)



Appendix 2. Distribution of the Final Sample BHARs



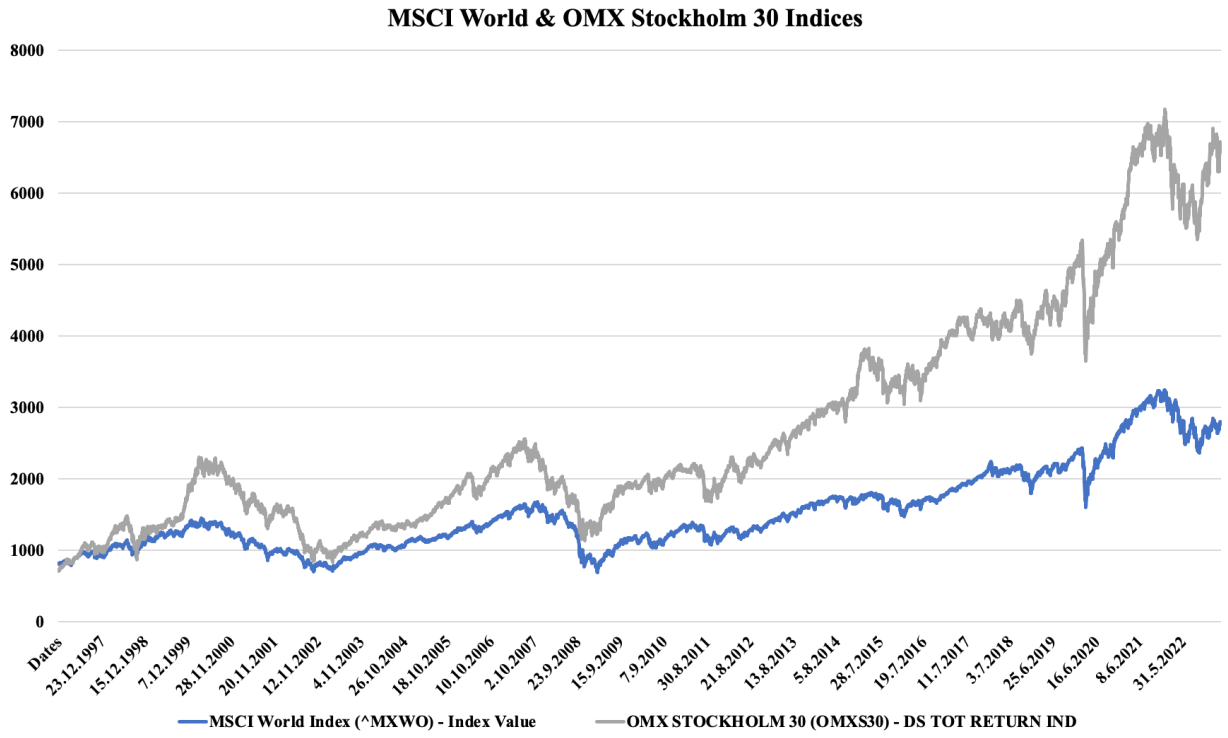
Appendix 3. Distribution of the Final Sample 1-year BHARs



Appendix 4. Explanatory Variables' VIF Scores

Predictor	VIF Score
Serial	1.751165
Size	2.295202
Technology	1.298374
Telecommunication	1.601114
Health Care	1.388608
Real Estate	1.517543
Consumer Discretionary	1.352031
Consumer Staples	1.160195
Basic Materials	1.264584
Energy	1.314300
Financials	1.182417
Relative Size	1.410991
Cross-border	1.410545
2000-2001	2.074023
2002-2003	8.247221
2004-2005	6.812122
2006-2007	5.440675
2008-2009	3.606221
2010-2011	6.584658
2012-2013	2.861253
2014-2015	4.131714
2016-2017	7.242476
2018-2019	6.281255
2020-2021	6.055585

Appendix 5. MSCI World and OMX Stockholm 30 Indices from the beginning of 1997 until April 2023 (MSCI)



Appendix 6. Cross-Correlations of Explanatory Variables

Variable	Size	Serial	Cross-border	Relative Size	Technology	Telecommunication	Health Care	Real Estate	Consumer Discretionary	Consumer Staples	Basic Materials	Energy	Financials	2000-2001	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011	2012-2013	2014-2015	2016-2017	2018-2019	2020-2021
Size	1	0,52	0,17	-0,42	-0,29	0,35	-0,08	0,09	-0,23	-0,04	0,09	-0,07	-0,02	-0,09	-0,05	0,05	0,00	0,04	0,19	-0,01	-0,05	-0,06	-0,07	-0,02
Serial	0,52	1	0,20	-0,14	-0,26	0,34	0,18	-0,07	-0,10	-0,15	0,08	-0,06	-0,04	-0,06	0,11	0,04	0,09	0,02	0,11	-0,01	-0,02	-0,10	-0,16	-0,04
Cross-border	0,17	0,20	1	-0,04	0,04	0,02	0,07	-0,38	0,00	-0,12	0,05	-0,11	-0,05	-0,07	0,02	0,09	-0,04	0,09	-0,05	0,05	0,10	-0,09	0,03	-0,07
Relative Size	-0,42	-0,14	-0,04	1	0,06	-0,03	0,03	-0,02	0,20	0,01	-0,06	0,01	-0,01	-0,02	-0,07	0,00	0,01	-0,03	-0,09	0,02	0,26	-0,03	-0,02	0,04
Technology	-0,29	-0,26	0,04	0,06	1	-0,10	-0,11	-0,08	-0,09	-0,04	-0,10	-0,02	-0,06	0,10	-0,07	0,01	0,05	-0,06	-0,10	0,05	-0,07	0,06	0,09	0,02
Telecommunication	0,35	0,34	0,02	-0,03	-0,10	1	-0,14	-0,10	-0,12	-0,06	-0,13	-0,03	-0,07	-0,05	-0,08	0,05	0,15	0,12	-0,04	-0,07	-0,09	0,08	-0,08	0,02
Health Care	-0,08	0,18	0,07	0,03	-0,11	-0,14	1	-0,11	-0,12	-0,06	-0,14	-0,03	-0,08	-0,05	0,07	0,03	-0,07	0,11	0,04	0,09	0,09	-0,11	-0,09	-0,04
Real Estate	0,09	-0,07	-0,38	-0,02	-0,08	-0,10	-0,11	1	-0,09	-0,04	-0,10	-0,02	-0,06	-0,04	0,04	-0,05	-0,09	-0,06	-0,10	-0,05	-0,07	0,06	0,02	0,21
Consumer Discretionary	-0,23	-0,10	0,00	0,20	-0,09	-0,12	-0,12	-0,09	1	-0,05	-0,11	-0,02	-0,06	-0,04	0,00	-0,07	0,14	0,01	0,04	-0,06	-0,01	-0,12	-0,05	0,11
Consumer Staples	-0,04	-0,15	-0,12	0,01	-0,04	-0,06	-0,06	-0,04	-0,05	1	-0,06	-0,01	-0,03	-0,02	-0,07	-0,06	-0,05	-0,04	-0,06	0,14	-0,04	0,13	0,15	-0,05
Basic Materials	0,09	0,08	0,05	-0,06	-0,10	-0,13	-0,14	-0,10	-0,11	-0,06	1	-0,03	-0,07	-0,05	0,05	0,05	0,00	-0,01	0,06	-0,07	0,10	0,04	-0,08	-0,12
Energy	-0,07	-0,06	-0,11	0,01	-0,02	-0,03	-0,03	-0,02	-0,02	-0,04	-0,10	-0,02	-0,01	-0,01	-0,03	-0,03	-0,02	-0,02	-0,03	-0,01	-0,02	-0,03	-0,02	-0,02
Financials	-0,02	-0,04	-0,05	-0,01	-0,06	-0,07	-0,08	-0,06	-0,06	-0,03	-0,07	-0,01	1	0,15	-0,09	0,00	-0,06	-0,04	0,01	-0,04	-0,05	0,15	-0,07	0,01
2000-2001	-0,09	-0,06	-0,07	-0,02	0,10	-0,05	-0,05	-0,04	-0,04	-0,02	-0,05	-0,01	0,15	1	-0,06	-0,05	-0,04	-0,03	-0,05	-0,03	-0,03	-0,05	-0,05	-0,05
2002-2003	-0,05	0,11	0,02	-0,07	-0,07	-0,08	0,07	0,04	0,00	-0,07	0,05	-0,03	-0,09	-0,06	1	-0,16	-0,13	-0,10	-0,15	-0,08	-0,11	-0,16	-0,15	-0,15
2004-2005	0,05	0,04	0,09	0,00	0,01	0,05	0,03	-0,05	-0,07	-0,06	0,05	-0,03	0,00	-0,05	-0,16	1	-0,11	-0,08	-0,13	-0,07	-0,09	-0,14	-0,13	-0,13
2006-2007	0,00	0,09	-0,04	0,01	0,05	0,15	-0,07	-0,09	0,14	-0,05	0,00	-0,02	-0,06	-0,04	-0,13	-0,11	1	-0,07	-0,11	-0,06	-0,08	-0,12	-0,11	-0,11
2008-2009	0,04	0,02	0,09	-0,03	-0,06	0,12	0,11	-0,06	0,01	-0,04	-0,01	-0,02	-0,04	-0,03	-0,10	-0,08	-0,07	1	-0,08	-0,04	-0,06	-0,09	-0,08	-0,08
2010-2011	0,19	0,11	-0,05	-0,09	-0,10	-0,04	0,04	-0,10	0,04	-0,06	0,06	-0,03	0,01	-0,05	-0,15	-0,13	-0,11	-0,08	1	-0,07	-0,09	-0,14	-0,12	-0,12
2012-2013	-0,01	-0,01	0,05	0,02	0,05	-0,07	0,09	-0,05	-0,06	0,14	-0,07	-0,01	-0,04	-0,03	-0,08	-0,07	-0,06	-0,04	-0,07	1	-0,05	-0,07	-0,06	-0,06
2014-2015	-0,05	-0,02	0,10	0,26	-0,07	-0,09	0,09	-0,07	-0,01	-0,04	0,10	-0,02	-0,05	-0,03	-0,11	-0,09	-0,08	-0,06	-0,09	-0,05	1	-0,10	-0,09	-0,09
2016-2017	-0,06	-0,10	-0,09	-0,03	0,06	0,08	-0,11	0,06	-0,12	0,13	0,04	-0,03	0,15	-0,05	-0,16	-0,14	-0,12	-0,09	-0,14	-0,07	-0,10	1	-0,13	-0,13
2018-2019	-0,07	-0,16	0,03	-0,02	0,09	-0,08	-0,09	0,02	-0,05	0,15	-0,08	-0,02	-0,07	-0,05	-0,15	-0,13	-0,11	-0,08	-0,12	-0,06	-0,09	-0,13	1	-0,12
2020-2021	-0,02	-0,04	-0,07	0,04	0,02	0,02	-0,04	0,21	0,11	-0,05	-0,12	-0,02	0,01	-0,05	-0,15	-0,13	-0,11	-0,08	-0,12	-0,06	-0,09	-0,13	-0,12	1

Appendix 7. White Test Results for Heteroscedasticity

	Test statistic	p-value
BHAR Full Sample	163.47	0.128
BHAR Serial	96.45	0.131
BHAR Single	79.74	0.933

Appendix 8. Time Series of the Acquisitions