M&A VALUE CREATION IN EUROPE

An empirical event study on the short-term value creation in public-to-public transactions in Europe from 2000 to 2024

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ABSTRACT

This thesis investigates short-term value creation in public-to-public M&A transactions in continental Europe from 2000 to 2024. While existing literature primarily focuses on earlier merger waves or U.S. markets, this study contributes to the academic field by analyzing a comprehensive European sample of 792 transactions, covering both the sixth and seventh merger waves. The goal of the thesis is to assess how M&A announcements affect the short-term shareholder value of target and acquiring firms and to identify which deal-, firm-, and macroeconomic-specific characteristics drive these effects. To address this, two hypotheses are tested.

The first hypothesis examines whether M&A announcements have a statistically significant impact on Cumulative Abnormal Returns (CAR). This is assessed using two statistical models (Market Model and Constant Mean Return Model) and one economic model (Capital Asset Pricing Model). The thesis incorporates both local indices and a broader European index as benchmarks. To fully capture the market's reaction and ensure comparability with existing literature, CAR is measured across four event windows: [-1; +1], [-3; +3], [-5; +5], and [-10; +10], with subsequent testing using parametric statistical tests. Consistent with prior research, target companies earn statistically significant positive abnormal returns across all models and event windows. As the event window expands, the CAR increases. In contrast, acquirers earn modest but statistically significant positive CARs exclusively in the shorter event windows [-1; +1], [-3; +3], and [-5; +5]. The choice of benchmark has little to no effect. Combined CARs are positive and significant, demonstrating net value creation for both parties.

The second hypothesis examines the relationship between eleven categorical variables and CAR through multiple linear regression. For variables not significant in the regression, univariate analysis is conducted separately. For targets, all explanatory variables exhibit statistically significant relationships with CAR across all event windows, whereas for acquirers, the explanatory variables demonstrate statistical significance primarily in the shorter [-1; +1] and [-3; +3] event windows. For targets, higher CARs are associated with stronger financial health, relatively smaller size, hostile bids, all-cash payments, and non-sponsored deals. They also benefit from cross-border deals and diversification. Acquirers benefit from financial stability, relatively larger size, industry relatedness and domestic deals. Hostile takeovers reduce the acquirers' CARs, while all-cash payments and non-sponsored deals enhance them. Finally, the effects of economic downturns during the dot-com bubble, financial crisis, and COVID-19 yield conflicting yet significant results for both parties, suggesting the need for further research.

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1. INTRODUCTION

Mergers & Acquisitions (M&A) is a broad definition for the purchase, sale, spin-off and combination of companies, their subsidiaries and assets (Rosenbaum & Pearl, 2021). An acquisition is defined as the purchase of an entire company or a controlling interest in a company whereas a merger refers to the absorption of one firm by another (Gaughan, 2017; Hillier et al., 2021). M&A plays a critical role in reshaping corporate landscapes, driving growth and fostering innovation across industries. It allows businesses to enter new markets, integrate complementary capabilities and achieve strategic or financial objectives. These complementary capabilities are commonly known as synergies between the combining entities. Whether these synergies create added value for the shareholders of the acquiring company is widely discussed and has mixed findings throughout the literature, without overall conclusive evidence to support whether M&A destroys or creates shareholder value.

The current literature widely acknowledges six merger waves, which are specific time periods of higher M&A activity in response to various economic, regulatory and technological factors (Mitchell & Mulherin, 1996; Harford, 2005). There is a broad consensus that five of these waves occurred in the 20th century and that one occurred in the 21st century, spanning from 1897 to 2007 (Gaughan, 2017; Cho & Chung, 2022). While the current findings are modest when it comes to defining a seventh merger wave, the literature suggests that we are currently in the seventh merger wave from year 2012 onward, due to increased activity post 2008 financial crisis (Cho & Chung, 2022; Emiru & Weisblatt, 2025). This increased activity peaked in 2021, when the global M&A market reached record levels in terms of deal volume and value with 58,308 completed transactions and over $5.2 trillion in value (IMAA, 2025).

Unlike previous literature, this thesis will base its quantitative study on significantly more recent empirical data and will focus specifically on public-to-public transactions among European companies. The primary emphasis will be on conducting an event study aimed at estimating short-term value creation, measured as Cumulative Abnormal Returns (CAR). CAR will be calculated for the target, the acquirer and from a combined perspective, assessing short-term value creation around the M&A announcement date. The analysis will include four event windows: [-1; +1], [-3; +3], [-5; +5], and [-10; +10]. The thesis uses a research design that is shaped by existing literature and methodologies. This deductive approach ensures that existing theoretical frameworks and concepts are empirically tested. Findings and conclusions will be consistently compared with prior research in the field, highlighting any possible discrepancies or statistical inferences.

1.1 RESEARCH QUESTION AND HYPOTHESES

This thesis is a quantitative study of the short-term value creation in public-to-public M&A transactions in Europe from 2000 to 2024. It seeks to uncover whether a short-term abnormal return is achieved for the shareholders of the target and acquiring company. In extension to this, the thesis tries to uncover various factors to support the conclusion of the achieved abnormal return. The above introduction has led to the following research question:

How do public-to-public M&A announcements in Europe affect the short-term value of the target and acquiring company and what factors drive these effects?

The research question is supported by the following hypotheses and sub questions. H_0 demonstrates the null hypothesis, H_1 demonstrates the alternative hypothesis, and S reflects the sub question.

Hypothesis 1:

$\boldsymbol{H_0}$: M&A announcements do not have a statistically significant impact on CAR.

$\boldsymbol{H_1}$: M&A announcements have a statistically significant impact on CAR.

- $\boldsymbol{S_{1.1}}$: *How does the choice of model for estimating CAR affect the result?*
- $\boldsymbol{S_{1.2}}$: *How does the length of the event window for estimating CAR affect the result?*

Hypothesis 2:

$\boldsymbol{H_0}$: No statistically significant relationship can be demonstrated between the selected explanatory variables and CAR.

$\boldsymbol{H_1}$: A statistically significant relationship can be demonstrated between the selected explanatory variables and CAR.

A Multiple Linear Regression (MLR) is conducted to test the explanatory variables defined in Table 1, with subsequent univariate analysis of insignificant variables. Some variables have multiple underlying dummy variables.

Table 1: Overview of explanatory variables

Explanatory variables			
#1	Country	#7	Method of payment
#2	Industry classification	#8	Sponsor backed
#3	Financial distress	#9	Related industry
#4	Relative size	#10	Cross-border
#5	Deal status	#11	Time of crisis
#6	Deal attitude		

Source: Author's own creation.

1.2 RELEVANCY

Analyzing modern M&A transactions, particularly during the sixth and seventh merger waves, is relevant due to the fundamental changes in the macroeconomic landscape. Merger waves have been shown to be caused by a combination of shocks defined as either economic, regulatory or technological (Mitchell & Mulherin, 1996). Economic shocks come from a rapidly growing economy, which motivates companies to accommodate the growing demand. Regulatory shocks occur through deregulation that opens opportunities for consolidations that might not have been possible before (Gaughan, 2017). Technological shocks, as the word implies, happen when certain industries experience growth because of technological advancements. Harford (2005) found that shocks on a standalone basis are not enough to trigger a merger wave. He documented that sufficient capital liquidity must be present to trigger a merger wave. Emiru & Weisblatt (2025) analyzed M&A transactions from 1928 to 2019 and found that merger waves tend to initially start during economic downturns and that contractionary monetary policies lead to a decline in M&A activity. As monetary policies tend to be more contractionary in normal economic times, it can lead to a shortage of capital liquidity (Emiru & Weisblatt, 2025).

These findings are particularly relevant given that global M&A transaction volume and value reached record levels in 2021 (IMAA, 2025), only to decline in 2022 because of contractionary monetary policies to battle growing inflation (Melgar et al., 2022). The rapid shift from near-zero interest rates to aggressive monetary tightening by central banks globally represents a large policy reversal in recent financial history. While other factors such as delayed transactions due to COVID-19 may have contributed to M&A record levels, the favorable macroeconomic conditions in 2021 and decline in 2022, are consistent with previous research on capital liquidity and its effect on M&A activity (Harford, 2005; Emiru & Weisblatt, 2025).

The European M&A market encompasses several unique characteristics in terms of diverse regulatory frameworks, corporate governance structures, and the impact of European Union policies. These characteristics are often more observable in public-to-public transactions, as these deals are subject to greater market scrutiny, regulatory oversight, and information disclosure requirements. As most of the literature focuses on earlier periods, it leaves a research gap regarding the impact of recent merger waves on short-term wealth creation in European M&A. Accordingly, the author finds it relevant to examine shareholder effects through abnormal returns in European public-to-public transactions surrounding the announcement date of M&A transactions during both the sixth and seventh merger waves. Earlier empirical evidence is often limited by data availability, which is why this thesis uses an extensive data set of 792 transactions from 2000 to 2024.

1.3 DELIMITATIONS

The goal of the delimitations is to ensure a focused and meaningful analysis with defined boundaries, to better answer the research question and underlying hypotheses. This allows for more precise statistical inference and helps control potentially confounding variables. The limitations are consistent with previous academic approaches and deemed necessary for maintaining methodological rigor as well as appropriate comparability with existing M&A research. The following delimitations have been applied:

i. The data set consists solely of transactions announced between 01.01.2000 and 31.12.2024.
ii. The data set consists solely of public companies headquartered geographically within Europe.
iii. The data set consists solely of Mergers and Acquisitions (M&A).
iv. The data set consists solely of transactions gathered from S&P Capital IQ.
v. The thesis applies the event study methodology.
vi. The thesis focuses solely on the short-term wealth creation, measured as the Cumulative Abnormal Return (CAR), in the following event windows [-1; +1], [-3; +3], [-5; +5], and [-10; +10].

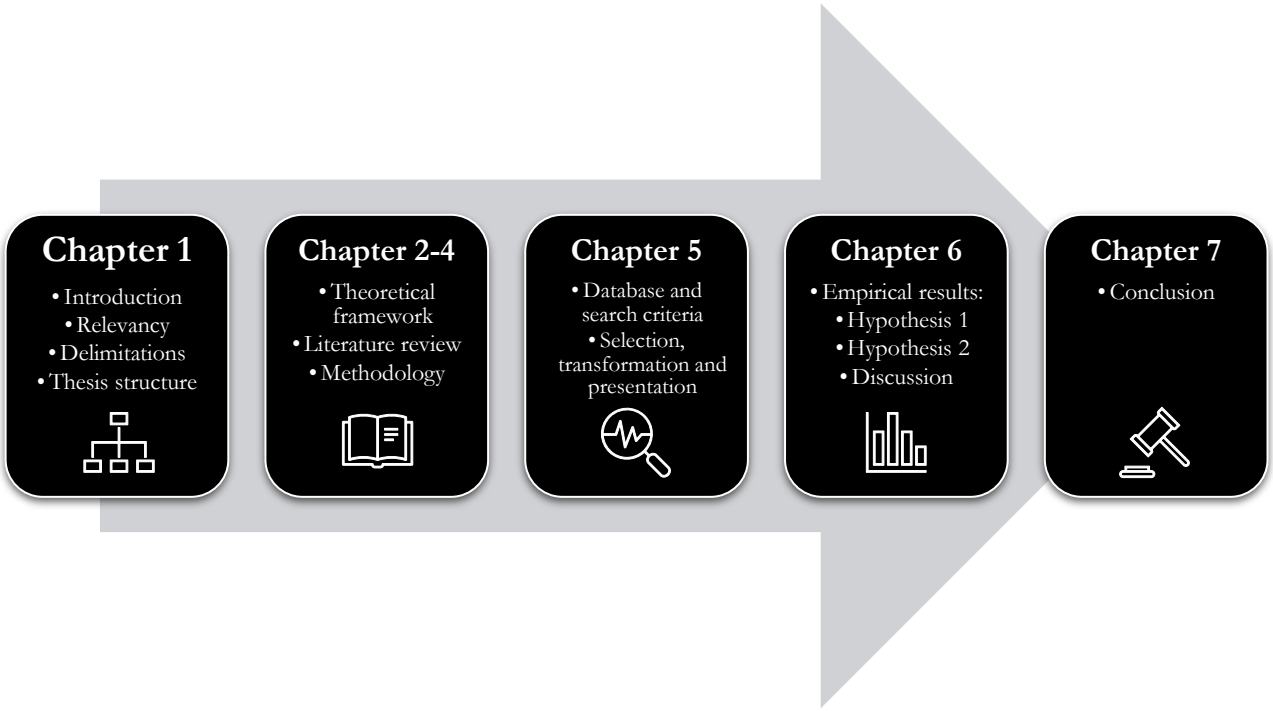
The above constraints serve as the main delimitations of the thesis, while further specifications for the data set will be examined in Chapter Five.

1.4 STRUCTURE OF THE THESIS

The thesis is structured into seven chapters with each chapter building upon the previous. This gives optimal clarity for the reader and ensures accurate conclusions to the research question and underlying hypotheses. The first chapter introduces the reader to the characteristics of the event study, its relevancy as well as delimitations surrounding the applied methodology. The second chapter explains the value creation in M&A through synergies and presents financial theories with assumptions necessary to complete the empirical analysis. The third chapter is a literature review on M&A including its history and value creation measured through CAR, including what deal-, firm-, and macroeconomic-specific characteristics drive these effects. The fourth chapter provides an overview of the applied methodology in the thesis, including parameters of the event study methodology, the measurement of abnormal returns, the use of both statistical and economic models, as well as model specification for the multiple linear regression. The fifth chapter details the data set used in the empirical analysis, including the database, search criteria, transformation and selection process, ending with a presentation of the final data set. Chapter Six examines the results of the empirical analysis. Hypothesis 1 is tested through univariate analysis while hypothesis 2 is tested through multivariate analysis. The results are presented

and discussed. Lastly, Chapter Seven concludes the thesis with respect to the research question and underlying hypotheses.

Figure 1: Thesis structure



Source: Author's own creation.

1.4.1 Definitions

To provide the reader with clarity, key terms related to M&A are defined below. Synonymous terms are used interchangeably throughout the thesis.

i. The '***target'*** company refers to the company being sold by a seller.

ii. The '***buyer'***, '***acquirer'*** or '***bidder***' refers to the buying entity.

iii. A '***merger'*** is when two entities combine operations to become one company.

iv. An '***acquisition***' or '***takeover'*** is when the buyer purchases the target.

v. '***M&A***' is an overall term for both mergers and acquisitions.

vi. The '***deal***' or '***transaction***' are both terms that describe the agreement between the parties.

vii. The '***premium***' is the additional amount paid by the buyer to the seller, above the target company's current market value.

2. THEORETICAL FRAMEWORK

The goal of this chapter is to uncover the theoretical and conceptual framework behind the empirical analysis. Theoretical frameworks are grounded in pre-existing theories and seek to test or extend established theories. It builds upon formal theories that have already been validated through previous research (Eisenhart, 1991; Maxwell, 1996). In contrast, conceptual frameworks incorporate both theoretical and empirical findings, allowing researchers to develop their own concepts based on their specific research objectives (Miles & Huberman, 1994; Jabareen, 2009). The reader is first introduced to the rationale behind M&A transactions, specifically the added value defined as 'synergies'. The reader is then introduced to the 'Efficient Market Hypothesis' (hereafter EMH) and the 'Capital Asset Pricing Model' (hereafter CAPM). The EMH and CAPM are financial theories grounded in necessary assumptions to complete the empirical analysis and provide the reader with a fundamental understanding of market efficiency and asset pricing. Once discussed, the chapter uncovers the elementary scientific methods applied throughout the thesis.

2.1 SYNERGIES

Synergies are defined as the added value created when two corporations combine their operations through M&A. Gaughan (2017) describes it simply as the ability to be more profitable when combining operations, than when the firms operate individually. The word 'synergy' derives from the Greek word 'synergos' which means working together. Synergies represent the value enhancers for M&A transactions, especially in horizontal[1] and vertical[2] mergers (Rosenbaum & Pearl, 2021). The algebraic expression for synergy value is formulated by Damodaran (2006) as:

$$V(AB) > V(A) + V(B) \tag{1}$$

Where $V(AB)$ is the combined value of company A and B, $V(A)$ is the value of company A and $V(B)$ is the value of company B. The literature typically distinguishes between two primary types of synergies: operational synergies and financial synergies. The added value created in operational and financial synergies adheres to rational economic, also called neoclassical theory (Sudarsanam, 2010). Neoclassical models conjecture with the idea that managers in M&A seek to maximize long-term shareholder value. The theory assumes that financial markets are efficient and rational, meaning that securities reflect all available information and managerial decisions are made rationally, without information asymmetry.

[1] Mergers where the combining entities has the same core or related business model
[2] Mergers where the combining entities share different stages of the supply chain

Operational synergies allow firms to use their existing assets for increased profitability and growth, while financial synergies aim to increase cash flow and reduce cost of capital (Damodaran, 2006). Operational synergies are commonly split into either revenue or cost synergies, where the goal is to either increase operational income or reduce operational costs.

Although the primary motivation for undertaking M&A transactions is synergies, the empirical evidence from the literature has conflicting results as to whether they are actually realized. Several studies suggest that this is due to the uniqueness of each transaction, making them difficult for comparison (Capron & Pistre, 2002; Larsson & Finkelstein, 1999). Devos et al. (2009) analyzed all completed public-to-public mergers from 1980 - 2004 (264) and found average synergetic gains of 10.03% through both operating (8.38%) and financial synergies (1.64%). In contrast, Sirower (1997) documented that 65-85% of mergers fail to create value, often due to overestimated synergies and implementation difficulties. This is consistent with Larsson & Finkelstein's (1999) findings that organizational integration is the single most important factor in explaining synergy realization. They also found that mergers where the operational synergy came from combining production and marketing yielded more resistance from employees than synergetic complementary benefits.

Poor management decisions have also been a defining factor in M&A. Roll (1986) introduced the 'hubris hypothesis', suggesting that managers often overestimate their ability to realize synergies due to overconfidence. This was also documented by Datta (1991), who found that differences in management styles between the acquiring and target company led to integration difficulties and performance deterioration. Strong synergetic management teams can, however, also create an added value for the companies merging. Krishnan et al. (1997) documented that complementary top management teams led to superior post-acquisition performance with ROA[3] improving by 4-5%. An overview of the synergies and their characteristics is presented in Table 2.

[3] Return on assets [net income ÷ total assets]

Table 2: Overview of synergies

	Operational synergies		**Financial synergies**	**Management synergies**
	Revenue synergies	**Cost synergies**		
Rationale	Increased operational income	Reduced operational costs	Reduced cost of capital	Complementary skillsets
Synergetic value	• Up-sell & cross-sell • Pricing power • Increased market share • New markets • Patents	• Economies of scale • Economies of scope • Sales & marketing costs • R&D costs • Personnel costs • Premises costs • Patents	• Debt capacity • Tax benefits • Diversification	• Transfer of best practices • Strategic capabilities • Improved corporate governance
Sector	• Financials • Technology • Pharmaceutical • Consumer	• Sector agnostic	• Private equity • Leveraged Buyouts (LBO)	• Professional services • Financials
Difficulty to achieve	High	Low	Low	Medium
Time to achieve	Slow	Fast	Slow	Slow
Literature	• Houston et al. (2001) • Capron & Pistre (2002) • Devos et al. (2009) • Hoberg & Phillips (2010)	• Healy et al. (1992) • Devos et al. (2009) • Andrade et al. (2001) • Fee & Thomas (2004)	• Kaplan & Strömberg (2009) • Guo et al. (2011) • Axelson et al. (2013)	• Krishnan et al. (1997) • Zollo & Singh (2004)

Source: Author's own creation.

2.1.1 Operational synergies

As defined in the previous section, operational synergies are defined as synergies that either increase operational income or reduce operational costs. Revenue synergies are usually harder to realize because they are dependent on external market factors and customer behavior, which are less controllable than internal cost structures (Eccles et al., 1999). This is also consistent with the speediness of operational integration, as cost synergies can be better planned and executed with relative certainty (Goold & Campbell, 1998).

2.1.1.1 Revenue synergies

In this section, the theoretical framework behind revenue synergies will be presented. The most scientifically explored research on revenue synergies is up-selling, cross-selling, pricing power, entrance to new markets, and patents. Up-selling is a sales strategy that increases the revenue of the business by inviting customers to purchase more expensive items. It enables retailers to reach their revenue goals by

increasing transaction value instead of acquiring new customers (Ebster et al., 2006). Schweiger & Goulet (2000) found that up-selling opportunities are most successful when the combining firms' product lines are complementary, sales forces are well-integrated, customer relationships are maintained, and IT systems are successfully merged. In cross-selling, the increased revenue stems from offering additional products to the merging entities' existing customer base.

Increased pricing power for two merging entities derives from reducing market competition and enhancing market position. This leads to greater bargaining power with suppliers, which ultimately results in higher margins and operating income (Damodaran, 2006). Kim & Singal (1993) examined pricing power in airline industry mergers and documented that merged firms gained significant pricing power, leading to price increases in markets where they competed. It is, however, worth noting that mergers exhibiting increased pricing power often raise antitrust[4] considerations.

The next documented revenue synergy is the entrance to new markets. Entering new markets can increase the revenue of the combined entities by expanding their existing customer base. This can be achieved through geographical expansion, customer base expansion and/or distributional channel expansion (Anderson & Gatignon, 1986; Barkema et al., 1996; Homburg & Bucerius, 2005). In geographical expansions, the acquiring company gains access to new geographic markets and leverages the existing distribution networks of the target company, whereas customer base expansion involves leveraging the current customer base of the target company.

The expansion of distribution channels allows the acquiring company to increase revenue by adding to their existing sales channels. An example of this is when Amazon purchased Whole Foods in 2017 (Edelson, 2023). This allowed the online retailer to expand into physical stores, i.e. breaking into a new segment. Lastly, patents held by the target company can increase the competitiveness of the acquiring company by increasing product quality. This has been demonstrated particularly within technology, where patented technologies are more frequent than other sectors. Makri et al. (2010) showed that mergers combining complementary patent portfolios generated more new patents compared to deals without patent synergies.

[4] Antitrust laws that regulate the concentration of economic power to prevent monopolies

2.1.1.2 Cost synergies

Contrary to revenue synergies, this section introduces the reader to cost synergies, that aim to reduce operational costs by combining two entities. Cost synergies are the central argument in many M&A transactions, as they are the fastest and easiest to realize (BCG, 2018). Christofferson et al. (2004) found that revenue synergies are much more frequently overestimated than cost synergies, with nearly 70% of mergers failing to achieve expected revenue synergies. The most well-researched cost synergies are economies of scale, economies of scope, value chain cost optimization (sales, marketing, R&D, personnel and, premises costs) and patents.

Economies of scale refer to the cost advantages that arise when a company increases its production volume. As production quantities increase, the average cost per unit typically decreases, assuming other factors remain constant. The increased operational efficiencies come from a cost reduction in fixed costs for manufacturing and as the output levels rise, the per-unit cost decline (Gaughan, 2017). This is consistent with Healy et al. (1992), who found that merged firms often experience significant operating synergies due to improved asset productivity. Similar to economies of scale, are economies of scope. Economies of scope refer to the merging companies' ability to utilize a set of inputs to provide a broader range of outputs or services (Gaughan, 2017). Panzar & Willig (1981) provided the foundational framework for understanding economies of scope in corporate mergers. They demonstrated that economies of scope exist when it is less costly to combine two or more product lines in one firm, than to produce them separately.

The rationale behind value chain optimization comes from reducing operating costs across the acquiring firms' operations. Capron (1999) examined 253 horizontal acquisitions in Europe and the U.S. and found that firms engaging in active post-acquisition resource redeployment often realized reductions in sales, marketing, R&D, personnel, and premises costs. They did, however, find that when acquirers implemented asset divestitures at the target firm without adequately redeploying resources, post-acquisition performance could suffer. This supports the idea that information asymmetry can hinder effective integration and value creation in M&A. Lastly, just as patents can contribute to increased operational income (Section 2.1.1.1), they can also enhance post-merger efficiency. Cassiman et al. (2005) found that when merging firms possess technologically complementary knowledge bases, they tend to achieve greater R&D efficiency following the acquisition. In contrast, mergers between firms with technologically substitutive profiles often experience a decline in R&D output. These findings align with those of Makri et al. (2010), who also emphasized the value-creating potential of complementary patent portfolios (Section 2.1.1.1).

2.1.2 Financial synergies

This section outlines the synergetic values gained from lowering cost of capital or increasing cash flows by combining two entities (Damodaran, 2006). Cost of capital is a fundamental concept in finance, that represents the minimum return a company must earn on its investments to satisfy its providers of capital, both debt holders and equity holders. It is also called the discount rate, as it is used to discount future cash flows in valuations. In company valuations, the cost of capital (equity) is often obtained using CAPM and then modified according to the specific companies' debt/equity structure, interest payments and tax payments. This is commonly known as the Weighted Average Cost of Capital (hereafter WACC). The WACC method adjusts for the interest tax shield there is for corporations, by using the after-tax cost of capital as the discount rate (Berk & DeMarzo, 2024). Cost of capital can be lowered in M&A by increasing debt capacity, capitalizing on tax benefits or by diversification (Damodaran, 2006). Increased debt capacity reduces the combining entities' cash flow volatility and enhances their debt-servicing ability. This can allow them to gain higher interest tax shields and lower their cost of capital (Lewellen, 1971). Likewise, tax benefits can be especially efficient if the acquiring company can take advantage of tax laws, to write up the target company's assets, or to reduce their tax burden by acquiring an unprofitable company (Damodaran, 2006). Hayn (1989) found that tax considerations motivate acquisitions, and that tax attributes of target firms are significant in explaining abnormal returns for both entities in M&A, following the announcement of the acquisition.

Diversification is often cited as a potential source of synergy in mergers, particularly through the reduction of earnings volatility and perceived risk. According to Damodaran (2006), however, diversification on a stand-alone basis typically does not create value for shareholders of publicly traded companies, as investors can achieve diversification more efficiently themselves. The literature typically distinguishes between related and unrelated diversification (Sudarsanam, 2003). Related diversification involves expansion into industries with operational or market linkages, often enabling horizontal or vertical integration synergies. In contrast, unrelated or conglomerate[5] diversification involves expansion into entirely distinct industries, where strategic synergies are less obvious. Richard Rumelt, regarded as a pioneer in diversification strategy, characterized diversification in his (1982) study:

"*Diversification takes place when the firm expands to make and sell products or a product line having no market interaction (technically, having zero cross price-elasticity) with each of the firm's other products.*"

[5] Mergers where the combining entities does not share the same core or related business model

Finally, in its simplest form, the rationale behind combining cash flows comes from gaining excessive cash flows to undertake projects that would have otherwise not been undertaken, due to a lack of liquidity. As with the tax benefits, this is often true for larger firms acquiring smaller firms (Damodaran, 2006).

Financial synergies are particularly relevant in private equity (hereafter PE) and leveraged buyout (hereafter LBO) transactions, where the optimization of capital structure and the strategic use of debt are central to value creation. PE firms conduct acquisitions with the goal of improving performance and exit with a profit, often through a better capital structure, operational efficiencies and tax optimization (Kaplan & Strömberg, 2009). LBO investment firms are generally considered a subset of private equity. The objective of an LBO is to use the acquired company's cash flows to service and repay acquisition-related debt, while simultaneously increasing its value through restructuring or strategic initiatives (Rosenbaum & Pearl, 2021). In simple terms, the key difference between a traditional PE acquisition and an LBO lies in the proportion of debt financing. The financing in PE typically comes from a closed-end private equity fund with a fixed life span, typically ten years (Kaplan & Strömberg, 2009).

2.1.3 Management synergies

While less prominently featured in the literature compared to operational and financial synergies, management synergies have been explored by several economists who argue for their potential to create value in M&A transactions. Roll's (1986) pioneering study introduced the concept of possible 'dissynergies' through the hubris hypothesis. This hypothesis postulates that managers in a position of power may exhibit overconfidence, which can potentially damage the success of the acquisition. Such overconfidence may lead to overpaying for targets or overestimating synergies and ultimately lead to destroying value for the acquiring firm's shareholders. There are, however, studies showcasing successfully integrated management synergies in the form of transfer of best practices, strategic capabilities and improved corporate governance. Canella & Hambrick (1993) found that the departure of executives from acquired firms is harmful to post-merger performance. They also found that providing one or more executives with top management team status, in the newly combined entity, resulted in better post-merger performance.

Roll's (1986) hubris hypothesis, in contrast to neoclassical theory, adheres to the branch of literature revolving behavioral theories. Advocates for behavioral theory believe that managers in M&A can take advantage of market misvaluations of firms by acquiring companies at a market discount (Sudarsanam, 2010). For such behavior to persist, behavioral theory assumes that markets are not fully efficient, allowing managers to potentially earn abnormal returns by acquiring undervalued firms. Other behavioral

theories include asymmetrical information (Akerlof, 1970) and the principal-agent theory (Ross, 1973) among others. Asymmetrical information refers to situations where one party in a transaction possesses more or better information than the other, which can potentially lead to adverse selection or moral hazard (Akerlof, 1970). The principal-agent theory builds on this theory, by highlighting the conflict that can arise when managers (agents) pursue their own interests over the shareholders (principals) (Ross, 1973). Specific empirical findings on information asymmetry will be presented in Chapter Three. The theoretical framework of market efficiency will be presented in the following section.

2.2 THE EFFICIENT MARKET HYPOTHESIS (EMH)

The purpose of this section is to introduce the reader to the theoretical framework behind market efficiency. The assumptions behind efficient markets are necessary for completing the empirical analysis, as the thesis is a quantitative study of publicly available stock prices and abnormal returns surrounding the announcement date of the transactions.

The EMH, introduced by Fama (1970) adds to preexisting literature by Bachelier (1900) who proposed that stock price movements follow a 'random walk', making future movements unpredictable based on past prices. The concept was later rediscovered and developed by Kendall & Hill (1953), who analyzed weekly price changes and found random patterns in the movements of stock and commodity prices. Further developing the concept, Samuelson (1965) provided economic logic to the randomness of the movements, demonstrating that the random price movements are evidence of market efficiency rather than irrationality. He found that it is not possible to forecast price changes in competitive markets, when the market fully incorporates the expectations and information of all market participants. Finally, Fama (1970) combined these ideas and provided a comprehensive theoretical framework defining three forms of market efficiency: 'weak form', 'semi-strong form' and 'strong form'. Fama went on to win the Nobel Prize in 2013 for his work on EMH and contributions to empirical asset pricing.

EMH states that when the market is in weak form efficiency, all stock prices reflect past prices, and no form of technical analysis can be used to aid investors in predicting future stock prices. Advocates for this form of efficiency follow the belief that investors can achieve abnormal returns by using fundamental analysis to find undervalued stocks (Elton et al., 2017). In a semi-strong efficient market, all publicly available information is already priced into stock prices, and thus investors cannot achieve above-market returns, by utilizing either technical or fundamental analysis. It is, however, still possible to achieve abnormal returns if the investor has private information (i.e., insider trading). This is a known phenomenon in M&A transactions prior to the announcement date. Keown & Pinkerton (1981) found

statistically significant evidence of inside information, up to 12 trading days prior to the first public announcement. They described the issue as "*what most traders already know.*" Lastly, the strongest form of the efficient market hypothesis states that all information, both public and private, is already priced into current stock prices, concluding that no type of information can lead investors to achieve abnormal returns (Elton et al., 2017). There are several critiques of the EMH, who have tried to demonstrate that markets are not efficient, primarily due to behavioral bias. Malkiel (2003) studied EMH and its critics and concluded that:

"*Our stock markets are more efficient and less predictable than many recent academic papers would have us believe.*"

Contrary to the mainstream narrative, suggesting that markets are indeed efficient, some studies have shown otherwise. Frazzini et al. (2018) studied the returns achieved by Berkshire Hathaway and found that they had delivered a Sharpe Ratio[6] of 0.76 from 1976-2017, nearly double the market, suggesting skill rather than luck. The random walk hypothesis has also been subject to testing and validation by several economists. Lo & MacKinlay (1988) developed the variance ratio test and applied it to weekly stock returns, finding positive serial correlation that contradicted the random walk hypothesis. The test is today widely acknowledged to study autocorrelation in stock price movements, by comparing the variances of returns over longer time horizons with single period returns. Fadda (2019), utilizing the variance ratio test, analyzed major stock indices in Europe including FTSE100 (England), DAX (Germany), CAC40 (France), and IBEX35 (Spain) in the period 2006-2016 and rejected the random walk hypothesis for CAC40 and FTSE100, while he could not reject the hypothesis for DAX and IBEX35.

Given the empirical evidence of insider trading prior to M&A announcements, this thesis adopts the semi-strong form of market efficiency (Keown & Pinkerton, 1981). Accepting the semi-strong form of market efficiency is essential for conducting the event study of European M&A transactions, as it postulates that stock prices rapidly adjust to incorporate all publicly available information. Specifically, it enables the measure of abnormal returns around the M&A announcements, reflecting the market's unbiased assessment of the transactions' economic impact. If the market is not deemed efficient, the price reaction might be delayed or incomplete, making it impractical to draw reliable conclusions from the empirical analysis. This prerequisite also underlines that any rapid movements prior to the announcement date are considered leakage, consistent with the semi-strong form of EMH.

[6] The risk-adjusted return $\left[\frac{R_p - R_f}{\sigma_p}\right]$

2.3 THE CAPITAL ASSET PRICING MODEL (CAPM)

The Capital Asset Pricing Model (CAPM) is one of the most widely used valuation models in finance, developed independently by William Sharpe (1964), John Lintner (1965), and Jan Mossin (1966), with earlier unpublished contributions from Jack Treynor (1961, 1962). CAPM is an equilibrium theory of asset pricing that posits a linear relationship between expected return and systematic risk under market equilibrium conditions. The theoretical foundation is grounded in its premise, that in market equilibrium, investors are compensated only for systematic risk, as unsystematic risk can be eliminated through diversification. Simply put, systematic risk refers to the risk of the entire market or market segment (Elton et al., 2017). It is also known as 'undiversifiable risk', as it affects the overall market. Conversely, unsystematic risk refers to the risk associated with a specific segment, industry or stock. CAPM relies on several key assumptions due to its nature as an equilibrium pricing model. Without these assumptions, the linear relationship between risk and return would not hold. The assumptions of CAPM are (Sharpe, 1964):

i. Investors are rational and risk-averse.
ii. Investors can borrow and lend unlimited amounts at the risk-free rate.
iii. All investors have homogeneous expectations.
iv. All assets are perfectly divisible and liquid.
v. There are no transaction costs, taxes, regulations or short-selling restrictions.
vi. The market is efficient and in equilibrium.
vii. All assets are marketable.

The assumption that investors are risk-averse and rational, is grounded in the idea that investors prefer higher expected returns for any given level of risk. If the expected return is the same on a relatively less-riskier asset, investors will prefer this asset. This assumption has been criticized by many economists in the space of behavioral finance. Barber & Odean (2001) analyzed trading patterns from over 35,000 households in the period 1991-1997 and found that they significantly underperformed the market. They also found evidence that increased trading activity led to even worse performance. The men in the study traded 45% more than women, which reduced their net returns by 2.65% relatively to the market. This excessive trading, primarily due to overconfidence bias, challenges Sharpe's (1964) first assumption.

The second assumption assumes that investors can, usually through government-backed securities like treasury bills or bonds, lend an unlimited amount of capital. The prerequisite for this assumption is that the state issuing the securities has a near zero risk of defaulting. This is, however, not always the case.

Greece, an EU member state since (EU, 2024), experienced a severe sovereign debt crisis following the 2008 financial crisis, leading to multiple bailout programs. Ultimately, EU had to lend money to Greece for them to meet their payments (BBC, 2018). The third assumption assumes that all investors have homogeneous expectations, meaning all investors have the same information available to them, and their expectations for the risk and expected return are the same. Miller (1977) challenged this assumption and found that when investors had divergent opinions and short-selling constraints existed, stock prices tended to reflect only the valuations of the optimistic investors, while pessimistic investors stayed out of the market. This showed that there was biased pricing that did not reflect the average opinion of all investors, contradicting CAPM's assumptions of homogeneous expectations.

The fourth assumption assumes that all assets can be sold and bought in any given volume and in any given fraction. Reasonably, this is unrealistic, since in real markets, transactions require both a willing buyer and seller. If there is insufficient demand or supply, trades cannot occur freely at any price or volume. In practice, it is also not possible to purchase fractional shares. The fifth assumption assumes that there are no transaction costs, taxes, regulations and no restrictions on short selling. The assumption of no transaction costs is problematic because financial intermediaries rely on fees to operate profitably. Furthermore, most countries have individual tax rates and regulations, why it would be hard to avoid these. The assumption of no short-selling restrictions implies unlimited market liquidity, which is unrealistic, equaling the assumption that assets can be traded in unlimited quantities. In practice, investors would be able to borrow unlimited amounts of shares to sell short.

The sixth assumption states that the market is efficient, consistent with the EMH (Section 2.2), and in equilibrium. Market equilibrium assumes that all assets are correctly priced relative to their risk and no arbitrage opportunities exist. Grossman & Stiglitz (1980) challenged this assumption, by showing that when informed traders have perfect information concerning a risky asset's return, no overall equilibrium will exist. Their logic was, that if markets were always in equilibrium, there would be no incentive to gather information. Lastly, the seventh assumption assumes that all assets are marketable, meaning that the market portfolio in theory should include stocks, bonds, real estate, private business, human capital and any other asset that contributes to wealth. This means, that to perfectly utilize the CAPM, the market portfolio should include all assets in the world, to achieve accurate pricing.

Although many of these assumptions may not fully reflect market realities, CAPM continues to serve as a fundamental framework for asset pricing in modern finance. Fama & French (2004) acknowledged CAPM's theoretical limitations, but found that the model provides valuable insights into the relationship

between risk and return, and remains widely used in practice for estimating the cost of capital (equity). The CAPM formula (Fama & French, 2004) is written as:

$$E(R_{i,t}) = R_f + \beta_{i,m}(E(R_{m,t}) - R_f) \quad (2)$$

Where $E(R_i)$ is the expected return of asset i at time t, R_f is the risk-free rate, $\beta_{i,m}$ is the beta coefficient of asset i with respect to the market portfolio m and $E(R_{m,t})$ is the expected return of the market m at time t.

CAPM is a single factor model that incorporates beta as the systematic risk factor, by measuring an asset's sensitivity to non-diversifiable market risk. Beta is calculated as the covariance between an asset's returns and market returns, divided by the variance of market returns (Fama & French, 2004):

$$\beta_{iM} = \frac{cov(R_{i,t}, R_{m,t})}{\sigma^2(R_{m,t})} \quad (3)$$

2.3.1 Beta

Beta quantifies how much an individual security's returns fluctuate relative to the overall market. A beta of 1 indicates that the security's volatility is equal to that of the overall market, with values above 1 indicating higher volatility and values below 1 indicating lower volatility. The traditional way of calculating beta is through a regression of the asset's excess returns against the market's excess returns, where the slope coefficient represents the asset's sensitivity to market movements (Sharpe, 1964). This method is implemented using Ordinary Least Squares (hereafter OLS), where the regression line is fitted to minimize the sum of squared differences between the observed values and the predicted values of the model. The accuracy of beta estimation depends on the selection of the most efficient time period of the OLS regression (length estimation interval), return interval (days, weeks, months) and market index (market portfolio).

2.3.1.1 Estimation and return interval

Alexander & Chervany (1980) found that monthly return intervals generally yield more stable beta estimates than daily or weekly data, with optimal stability achieved using an estimation interval of four to six years. Similarly, Bartholdy and Peare (2005) reported that monthly returns yield more reliable estimates than daily returns for beta estimation, identifying five years of monthly data as the optimal input for securities. In contrast, Daves et al. (2000) found that three-year estimation periods using daily data provide more accurate beta estimates than five-year intervals, arguably because shorter periods better

reflect changes in a firm's characteristics over time. While these findings are particularly relevant in empirical asset pricing research, event studies typically employ shorter estimation windows due to their focus on specific events and brief event windows. The literature generally supports estimation windows of approximately 250 trading days for event studies (MacKinlay, 1997; McWilliams & Siegel, 1997; Beitel et al., 2004). In accordance with the common academic approach, this thesis also estimates beta through a regression of the targets' and buyers' returns against the markets' returns during the estimation window of 252 trading days. The estimation and event window will be further detailed in Chapter Four.

2.3.1.2 Market index

Sharpe's (1964) assumption, that all assets are marketable, states that the market index used in CAPM should in theory include all assets. This is, in practice, not possible, why the most desirable option would be to choose a stock index that includes an equally weighted portfolio of all stocks on the market. The most common group of stocks used in empirical asset pricing studies in the U.S., include stocks listed on the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX) or the National Association of Securities Dealers Automated Quotations (NASDAQ) (Bali et al., 2016). These are represented by the Standard and Poor's 500 Composite Index (hereafter S&P 500), NYSE Composite Index and Nasdaq Composite Index and gathered from Center for Research in Security Prices (CRSP). Bartholdy & Peare (2005) also studied the impact of using different indices to estimate beta in CAPM and found that the CRSP Equally Weighted Index, which includes an equal weight of all stocks on NYSE, AMEX and NASDAQ, was superior to the S&P 500 and the CRSP Value Weighted Index. These findings are consistent with the idea that a broader index better reflects the true market portfolio (Sharpe, 1964). Equal-weighted mean returns are commonly used in studies on empirical asset pricing (Bali et al., 2016).

For event studies, the S&P 500 Index, CRSP Value Weighted Index and CRSP Equally Weighted Index are popular choices (Campbell et al., 1997). In European M&A event studies, indices such as the S&P 350 Europe Index and MSCI Europe Index are commonly used (Craninckx & Huyghebaert, 2015; Andriuskevicius, 2019; Mateev & Andonov, 2018). The MSCI Europe Index includes 15 developed markets (hereafter DM) countries in Europe and represents 85% of the free-float adjusted market capitalization across the European DM equity universe (MSCI, 2025). In several M&A event studies, especially within cross-border M&A, the respective indices of the parties involved in the transaction have been used (Goergen & Renneboog, 2004). Erel et al. (2012) conducted an extensive study on 56,978 cross-border mergers between 1990 and 2007 and found that the local stock market performance between the acquirer and target affected the likelihood of the firms merging. Their findings indicated that

a greater difference in local stock market performance between the countries increased the likelihood of the superior-performing country purchasing the worse-performing country.

In line with previous event studies on European M&A announcements, this thesis estimates beta using local stock market indices for the respective countries. Furthermore, based on the premise that a larger and equally weighted sample size increases the accuracy of the OLS regression (Bartholdy & Peare, 2005), the thesis also estimates beta using only the MSCI Europe Index. A list of the included countries and their respective indices are presented in Appendix 4.

2.3.2 The risk-free rate

The risk-free rate, also known as the riskless asset, is defined as an asset with zero variance where investors with certainty know their expected return for a specific time horizon (Sharpe, 1964; Damodaran, 1999). The riskless asset is uncorrelated with all risky assets and has no default or liquidity risk. In practice, the investor can lend and borrow at the risk-free rate through government backed securities (Section 2.3). Depending on the time period of the expected returns, the risk-free rate may vary anywhere from one, five or ten years (Damodaran, 1999). This thesis uses 10-year government bond rates from the respective countries of both parties involved in the European M&A transactions. The average yield of the period 01.01.2000 - 31.12.2024 is utilized to adjust for any macroeconomic changes throughout the period.

2.3.3 The market portfolio

The final component of the CAPM is the market portfolio. It represents the theoretical portfolio comprising all marketable securities in the world. The expected return on the market portfolio, when compared to the risk-less asset (Equation 2), is called the market risk premium. The market risk premium is the return investors expect to gain from investing in the market portfolio, that includes all risky assets, rather than investing solely in a riskless asset (Damodaran, 1999). The principles of choosing an appropriate market portfolio are equivalent to choosing the appropriate stock market index when estimating beta and are thus used interchangeably throughout the thesis. In line with the beta estimation (Section 2.3.1.2), this thesis uses both local stock market indices and the MSCI Europe Index as the market portfolio.

While the CAPM answered the question of whether expected stock returns are positively and linearly related to systematic risks (Sharpe 1964), the model has shown limited explanatory power in recent studies, as beta does not accurately explain cross-sectional differences in average returns (Artmann et al.,

2012). Several economists have found that adding additional variables, also known as multifactor models, increases the accuracy of the model. The Fama-French 3-factor model (Fama & French, 1993) is one of the most prominent multifactor models in empirical asset pricing. It includes three factors: 1) The Market Factor, which represents the systematic risk from the traditional CAPM, 2) The Size Factor, representing the difference between small-cap and large-cap stocks and 3) The Value Factor, defined as the difference in returns between high book-to-market[7] ('value stocks') and low book-to-market ('growth stocks'). While studies suggest that multifactor models are stronger in empirical asset pricing, the opposite has been found in event studies. MacKinlay (1997) found that statistical models such as the Constant Mean Return Model (hereafter CMR) and the Market Model (MM) are preferable in event studies, as economic models such as the CAPM and the Arbitrage Pricing Theory (hereafter APT) (Ross, 1976) rely on economic assumptions that may not hold in practice. Furthermore, MacKinlay (1997) found that when utilizing multi-factor models, such as the APT, where the expected return of a given asset is a linear combination of multiple risk factors, the most important factor is The Market Factor and additional factors add little explanatory value. Thus, the main reason to use a model based on APT over CAPM, is to eliminate the restrictions of CAPM.

It has been documented that researchers overwhelmingly prefer statistical models over CAPM, as explicitly stated by MacKinlay (1997). However, some economists have found that CAPM is superior to the CMR and that CAPM, in some cases, is superior to the Market Model. Cable & Holland (1999) compared the Market Model, CAPM and CMR, using a sample of 30 firms, and found a significant regression in 21 cases out of the 30 considered. In the 12 cases where the CAPM was accepted, it was compared to the Market Model where it outperformed in 5 out of 12 cases. In comparison, the CMR model was rejected against the Market Model in every case. While Cable & Holland (1999) provided valuable insights into model comparison, their limited sample size of 30 firms suggests the need for further research with larger samples. Brown and Warner (1985) demonstrated that samples under 50 firms can produce unreliable statistical inferences, suggesting that Cable & Holland's (1999) research should be validated with a more extensive data set.

Consistent with MacKinlay's (1997) findings, this thesis utilizes two statistical models in the empirical analysis: 1) the Market Model and 2) the CMR model. Additionally, for reference, the thesis uses one economic model: 3) the CAPM.

[7] The relationship between stocks' book value of equity and market equity value [Book value of equity ÷ Market value of equity]

2.4 RESEARCH PARADIGM

The objective of this section is to provide the reader with an overview of the scientific approach applied in the thesis, including its ontology, epistemology, and methodology. Overall, the thesis utilizes the scientific method, where observations are explored to answer the research question and underlying hypotheses.

The ontology of the thesis is based on objective realism, as financial markets and their reactions to corporate events are assumed to exist independently of the observer. This is consistent with the semi-strong market efficiency, as the study seeks to test whether M&A announcements cause a measurable effect on the target and acquiring companies' stock price. The epistemological foundation of the thesis is primarily positivist, assuming that knowledge can best be obtained through objective, observable and quantifiable evidence. M&A event studies are grounded in a deductive research approach, where preexisting theoretical frameworks and concepts are empirically tested against observed market behavior surrounding the announcement date of the M&A transactions. This deductive approach involves formulating hypotheses from established theory and evaluating them through empirical analysis (Saunders et al., 2023).

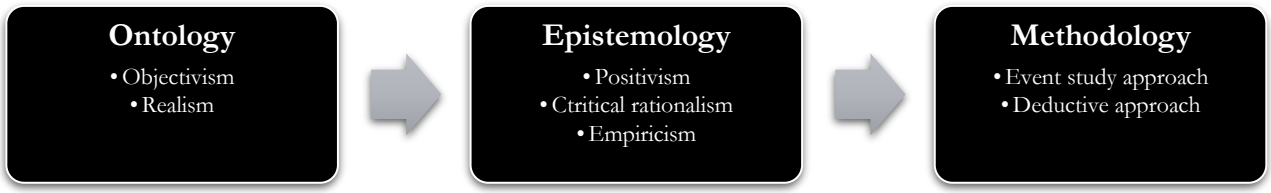
In addition to positivism, the study incorporates both empiricism and rationalism as they both endorse the intuition/deduction thesis (Markie, 2004). The intuition/deduction hypothesis was introduced by Descartes (1641), and states that we can gain knowledge only through intuition and deduction. The thesis was originally rejected by empiricists, but has been accepted by several empiricists such as Locke, Hume and Reid (Markie, 2004). Empiricism is an epistemological view stating that knowledge is based solely on experience and observations. It entails that knowledge can only be gained from experience, rather than reason and logic. This is, in M&A events studies, expressed through empirical analysis of objective market data and the assumption of market efficiency, specifically in the measurement of abnormal returns as observable market reactions to corporate events. In contrast, rationalism states that reason can be a primary source of concepts or knowledge, expressed in M&A event studies through the application of theoretical economic and statistical models, which specify the deductive structure for analyzing market behavior.

Karl Popper (1959) introduced critical rationalism, arguing that science should utilize a methodology based on falsifiability. Following this principle, the research question of this thesis has led to two hypotheses, which will subsequently either be supported or falsified through empirical testing. The data set consists of quantitative data in the form of publicly available stock prices, gathered from S&P Capital

IQ, ensuring sufficient reliability and validity. Consistent with the event study methodology, the gathered data will be processed to examine the impact on CAR around the announcement date of the European public-to-public transactions. The CAAR of the acquiring and target company will then be tested in several event windows through parametric tests, consistent with the most appropriate test method in event studies (Henderson, 1990).

Event studies align with positivism, as they represent a standardized research method that assumes objective observable market reactions to corporate events. Positivist paradigms value rationalism, because rationalism provides the logical structure and deductive reasoning necessary to form hypotheses that can be empirically tested. Scientific studies grounded in positivism focus on identifying explanatory associations through quantitative approaches, where empirical findings from large sample sizes are favored (Park et al., 2020). In line with the positivistic approach, this thesis examines the impact of CAR around the announcement date of the M&A transactions using both univariate and multivariate analysis, as the multivariate analysis can help provide a better understanding of the causal relationships in the data set. The event study methodology and its structure will be further detailed in Chapter Four.

Figure 2: Research paradigm of the thesis



Source: Authors' own creation.

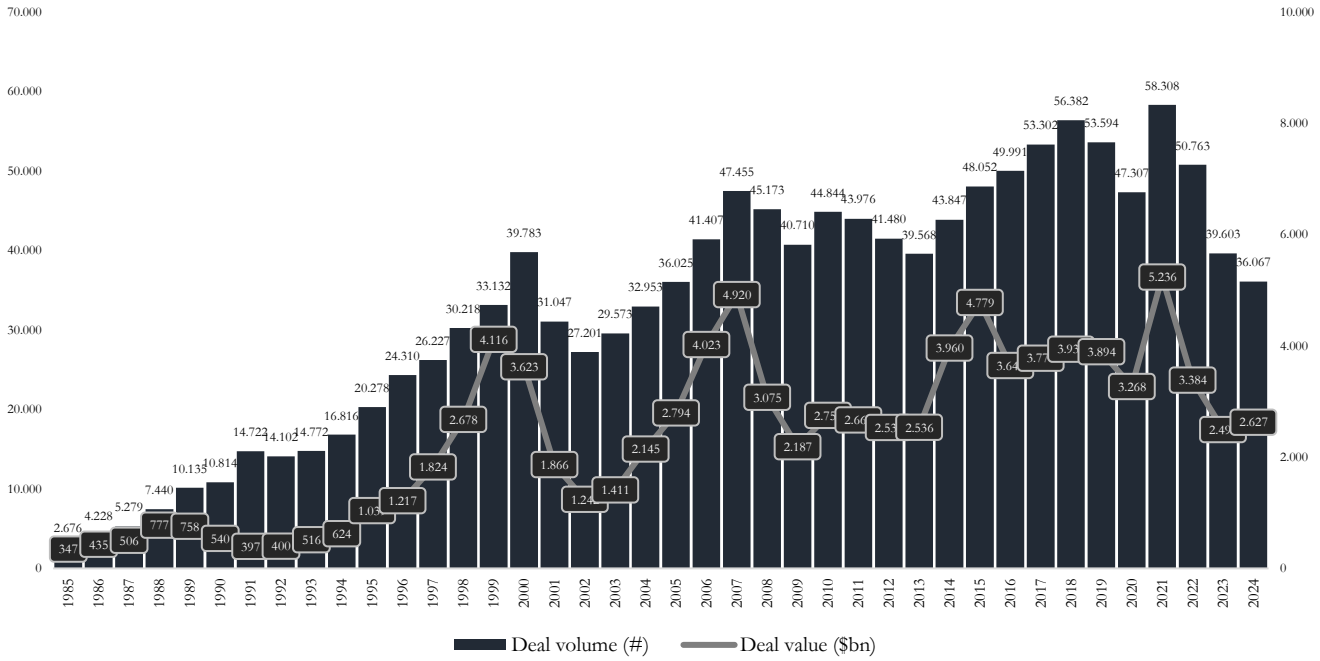
3. LITERATURE REVIEW

This chapter seeks to present the reader with the current literature on M&A. The first part of the chapter aims to uncover the history of M&A, and its cyclical behavior defined in the literature as merger waves (Figure 3). This lays the foundation for the second part, presenting empirical evidence from previous event studies that utilize CAR as a measurement of value creation in M&A. The latter includes both conclusions from studies on univariate and multivariate analysis. Subsequently, the findings from the literature regarding the explanatory variables presented in the second hypothesis (Table 1) will be reviewed individually.

3.1 THE HISTORY OF M&A

One of the earliest mergers, resembling M&A in modern times, is The Dutch East India Company. It was founded in 1602 by the merger of several companies, that allowed the companies to work together instead of competing with one another (Ferguson, 2004). Looking towards modern times, the first merger wave began after the depression of 1883 (1883 - 1885), in 1897, and ended in 1904 (Gaughan, 2017). Since then, the literature implies that five additional merger waves have occurred in the U.S. and that we are currently in the seventh merger wave, from 2012 and onward. The merger waves and their characteristics are primarily based on Gaughan's (2017) contributions and will be presented in the following sections.

Figure 3: Global M&A activity (1985 - 2024)



Source: Author's own creation based on data from IMAA.

3.1.1 The First Merger Wave (1897 - 1904)

The first merger wave is widely recognized as the first of its kind in the U.S. It was dominated by eight industries that stood for two thirds of all mergers during the period: metals, petroleum products, chemicals, transportation equipment, fabricated metal products, machinery, coal and food products (Nelson, 1959). The mergers were primarily characterized as horizontal mergers, which resulted in a near monopolistic market structure (Gaughan, 2017). The merger wave came to an end in 1904 after the U.S. Supreme Court used the Sherman Anti-Trust Act (U.S., 1890) to dissolve The Northern Securities Company because of its monopoly within the railroad industry in the U.S. (Stigler, 1950). While some economists argue that the first merger wave also occurred in Europe, others claim that it was only present in Great Britain. Goergen & Renneboog (2004) claimed that the second industrial revolution culminated in the first European merger wave from 1880 to 1904 and that it was equal to the U.S. merger wave in terms of creating monopolies. In contrast, Mariana (2012) argued that these types of consolidations were only present in Great Britain in certain sectors such as textiles and tobacco.

3.1.2 The Second Merger Wave (1916 - 1929)

The second merger wave was a result of the post-World War I economic boom in the U.S. and lasted from 1916 to 1929 (Gaughan, 2017). The economic boom provided increased access to capital, due to strong economic conditions. By 1914, Congress had passed the Clayton Antitrust Act (FTC, 1914), which was even stricter than the Sherman Anti-Trust Act, to ensure anti-monopolistic conditions. This resulted in fewer monopolies, more oligopolies and a lot of vertical mergers (Gaughan, 2017). The latter resulted in the first establishment of conglomerates on a larger scale. The merger wave came to an end due to the Great Crash of 1929. As with the first merger wave, Goergen & Renneboog (2004) argued that Europe also had a second merger wave lasting from 1919 to 1929 with similar characteristics as the U.S. merger wave. According to Ceddaha (2007) this was the first period of M&A activity outside of the U.S.

3.1.3 The Third Merger Wave (1965 - 1969)

The third merger wave began in the U.S. in 1965 and was like its predecessors initiated by strong economic conditions (Gaughan, 2017). It is known as the conglomerate era of mergers, as 80% of mergers in the U.S. between 1965 and 1975 were conglomerate mergers (FTC, 1977). In Europe, the merger wave began in the 1950s and peaked in mid-1960s (Goergen & Renneboog, 2004). The focus in Europe was also on diversification through large conglomerates and the increased merger activity was mostly visible in larger European economies such as Great Britain, Germany and France (Berk &

DeMarzo, 2024). The merger wave came to an end after the 1969 Tax Reform Act, which required that convertible debt should be treated as equity when calculating earnings per share[8] (EPS). This, along with other legal changes, made it harder to use debt to finance acquisitions, ultimately leading to the end of the merger wave (Gaughan, 2017).

3.1.4 The Fourth Merger Wave (1984 - 1989)

The fourth merger is widely recognized across the literature as occurring in both Europe as well as in the U.S. The U.S. merger wave began in 1984 after a downward trend of M&A activity in the 1970s that reverted in the beginning of the 1980s (Gaughan, 2017). In Europe, the merger wave began in 1983 as a result of increased technological advancement in biochemistry and electronics. Furthermore, the global financial markets experienced an increase in available financing instruments (Goergen & Renneboog, 2004). The increased financial innovation led to higher levels of hostile bids, which by the 1980s was considered an acceptable form of corporate expansion (Gaughan, 2017). Corporate raiding[9], LBOs, junk bonds and deregulation were all driving factors of the increased M&A activity that defined the fourth merger wave (Mariana, 2012). The merger wave ultimately came to an end in 1989 due to an economic slowdown causing a mild recession in 1990 (Gaughan, 2017). The junk bond market, which had provided financing for LBOs, also collapsed, contributing to the end of the fourth merger wave.

3.1.5 The Fifth Merger Wave (1993 - 2001)

After the mild recession in 1990-1991 companies once again began to engage in M&A activities (Gaughan, 2017). The fifth merger wave is the first wave where there is consensus in the literature regarding its comparable characteristics across the U.S., Europe and Asia (Mariana, 2012). It was also this wave where European transaction volume reached a number that was comparable to the U.S. The fifth merger wave included various cross-border megamergers, fewer hostile takeovers (in the U.S.) and more strategic mergers (Gaughan, 2017). Notable cross-border megadeals included Vodafone (UK) and AirTouch (US) (1999) as well as Vodafone (UK) and Mannesmann (GE) (2000), the latter being the largest merger in history (IMAA, 2025). The increased M&A activity was caused by economic expansion and globalization, as companies increasingly competed internationally rather than domestically (Cho & Chung, 2022). Furthermore, the development of new European stock exchanges and growth in internet and telecommunications led to increased M&A activity across Europe (Goergen & Renneboog, 2004).

[8] The ratio between a companies' total earnings and number of shares outstanding
[9] The process of acquiring a stake in a company and undertake hostile measures to increase share value

By 1999, the European M&A market accounted for 47% of all M&A activity in the U.S. and Europe combined. The merger wave came to an end in 2001 when the dot-com bubble started to burst, ultimately leaving the NASDAQ Composite down 78% in 2002 from its all-time high.

3.1.6 The Sixth Merger Wave (2003 - 2007)

The sixth merger wave unfolded after the Federal Reserve held interest rates low after the terrorist attack in New York on September 11, 2001, sparking a favorable environment for increased M&A activity (Gaughan, 2017). The low-interest rate environment contributed to increased private equity activity, as leveraged acquisitions became significantly cheaper to finance. In Europe, the introduction of the Euro currency within the member countries, sparked an increase in cross-border acquisitions of 8% in 2004 compared to 1999 (Mariana, 2012). The characteristics of the sixth merger wave are similar to the fifth merger wave, as globalization, technology, deregulation and favorable market conditions were all important factors behind the increased M&A activity. Ironically, the most important factor for the existence of the sixth merger wave also ended up becoming its ruin. Many argue that because the Federal Reserve kept interest rates low for so long, it fueled a speculative bubble in real estate, ultimately bursting in late 2007, also known as the subprime mortgage crisis (Gaughan, 2017).

3.1.7 The Seventh Merger Wave (2012 -)

Although not as researched as the previous merger waves, several studies suggest that we are currently in a seventh merger wave from 2012 and onward (Thorsten, 2020; Cho & Chung, 2022; Emiru & Weisblatt, 2025). From a strategic and disruptive viewpoint, Thorsten (2020) suggests that the increased M&A activity is due to increased technological innovation across all industries, evident in the ecosystems built by large tech companies such as Apple, Google and Microsoft. Big tech companies keep extending their service and product portfolios through both organic growth and acquisitions. He also mentions that Industry 4.0[10] technologies such as SAP, IoT, SaaS, Cloud Computing, Augmented Reality and AI has been a contributing factor to the increased M&A activity. This increased activity is clearly visible in recent global M&A transactions by industry, where technology, media and telecommunications have accounted for the greatest number of deals in both 2023 (24.3% of all deals) and 2024 (23.8% of all deals) (White & Case, 2025).

[10] Also known as the 'Fourth Industrial Revolution' in reference to the modern digitalization of the manufacturing sector (McKinsey, 2022)

The global deal volume and value from 2012 and forward suggests a seventh merger wave, however more research in the field is necessary to draw reliable conclusions. One could also argue that the seventh merger wave has already ended in 2022, when American stock markets entered a 10-month bear market due to increased inflation and delayed effects of Covid-19 (WFE, 2023). In 2024, M&A deal volume fell to its lowest levels since 2005, raising questions about whether the seventh wave has concluded (Figure 3).

3.2 M&A VALUE CREATION

The purpose of this section is to present the reader with the literature and its conclusions on short-term value creation in M&A. The current academic literature supports the event study methodology as the most widely used and effective approach for measuring short-term value creation in M&A transactions (Sudarsanam, 2010; Eckbo, 2008; Bruner, 2004). This is due to its ability to quantify the created value through the effect of the announcement on public stock prices held by the shareholders. Duso et al. (2010) researched whether the event study methodology was effective in capturing the anticipated profitability of mergers. They studied the ex-post value created in 114 mergers during the fifth merger wave, by assessing both stock market data and accounting data. Their study concluded that abnormal returns identified through the event study methodology and ex-post profitability measured via accounting data were positively and significantly correlated. The alignment between market reactions and accounting outcomes suggests that event studies can effectively capture the anticipated profitability of mergers.

As highlighted in Section 2.1, each M&A transaction is unique, and the findings in the literature, as to whether synergies are realized post-merger, are often mixed (Larsson & Finkelstein, 1999; Capron & Pistre, 2002). Accordingly, the findings regarding whether M&A creates shareholder value for the acquiring company have also been contradictory. Bruner (2004) examined 50 event studies and found that approximately 60% of the studies found positive abnormal buyer returns around the announcement date. He also examined 25 event studies on abnormal target returns and found that all of them reported positive abnormal returns, in line with the consensus among researchers, that M&A creates value for target shareholders, regardless of time period, deal type and observation period (Bruner, 2004). Because of these general conclusions across the literature, researchers have spent more time analyzing abnormal returns for buyers rather than targets. Furthermore, a prerequisite for conducting an event study using CAR, is that one of the parties involved is public, which is usually the acquirer.

The following sections will review the literature on short-term value creation in events studies, specifically the abnormal returns, measured as CAR, of both target, acquirer, and a combination of the two. This is done to ensure the best comparability with the empirical results presented in Chapter Six. A comprehensive literature review of 41 event studies on targets, 55 on buyers and 14 combined can be viewed in Appendix 1, Appendix 2, and Appendix 3, respectively.

3.3 CUMULATIVE ABNORMAL RETURNS (CAR)

Fama et al. (1969) developed the statistical framework for isolating the impact of specific events on stock prices using abnormal returns. Ball & Brown (1968) had published their work on event studies the year before, today considered the foundation of modern event study methodology. While CAR is the most used in event studies, other methods such as the buy-and-hold abnormal returns (hereafter BHAR) have been used to analyze longer time periods (Kothari & Warner, 2007). Simply put, BHAR compounds estimation errors over time, making CAR more accurate for shorter event windows, because the compounding effects of BHAR are minimal in short periods. CAR and CAAR are commonly used interchangeably across the literature, as the latter is simply the average of the aforementioned. As such, this thesis adheres to the academic consensus. The event study methodology and the components of CAR will be further detailed in Chapter Four.

3.3.1 Target

As previously established, M&A announcements generally have a positive effect on the abnormal returns of the target company (Bruner, 2004). The literature review of 41 target studies from 1977 to 2019 (Appendix 1) shows consistently positive CARs for targets across most geographies, industries, time periods, deal types and observation periods, consistent with Bruner's findings (2004). The CARs of the studies range from 3.8% to 45.6% with an average CAR of 21.8%. The results are significant in 40 out of the 41 studies.

Langetieg (1978) studied one of the longest time periods from 1929 to 1969 and found a positive CAR of 10.6% when using a [-180; +30] event window. In contrast, Dodd & Ruback (1977) studied the period 1958 - 1969 and found a CAR of 20.6% when looking only at the announcement date, suggesting that shorter event windows increase the CAR of the target. This is inconsistent with the findings of Maquieira et al. (1998), who found a CAR of 41.7% using a [-60; +60] event window from 1963 to 1996. Although this suggests that longer windows capture more of the market's anticipation or reaction to the

transactions, differences in sample periods, methodology, and deal characteristics also likely influence the results. These findings highlight the difficulty in isolating the effect of event window length on CAR.

While all the studies in the literature review represent a positive CAR, the results vary depending on the length of the event window, observation period, sample size and deal characteristics of the transactions. It is, however, evident that the CAR is generally higher when the study is conducted on American transactions rather than European. Mulherin & Boone (2000) examined public-to-public transactions in the U.S. during the fifth merger wave and found a positive CAR of 21.2%, which is consistent with Wang & Xie's (2009) findings, who examined the period 1990 - 2004 and found a positive CAR of 21.5%. In contrast, Goergen & Renneboog (2004) examined the fifth merger wave in Europe and found a positive CAR of 13.0%. Likewise, the lower CAR is evident in the findings of Martynova & Renneboog (2011), who also examined the fifth merger wave in Europe, including both private and public targets, and found a positive CAR of only 12.5%. Yilmaz & Tanyeri (2016) investigated this phenomenon by analyzing over 263,000 deals in 47 countries. They found a positive CAR of 11.4% within a [-1; +1] event window when including more than 16,000 acquisitions from 1992 to 2011 in the U.S. In comparison, over 34,000 acquisitions from other developed countries only achieved a positive CAR of 6.61% in the same period.

3.3.2 Buyer

In line with previous findings, the literature review consisting of 55 event studies from 1977 to 2019 (Appendix 2) on acquirers' CAR have mixed results and conclusions (Bruner, 2004). The CAR of the studies ranges from -14.4% to 6.1%, with an average CAR of -0.4%. 42 out of the 55 studies achieved significant results in at least one of their CAR analyses on acquirers. In 46.7% of the studies, the acquirers achieved positive abnormal returns. Looking only at studies with significant results, 49.3% of the acquirers had positive abnormal returns, similar to Bruner's (2004) results of 46%.

Langetieg (1978) also studied abnormal returns for acquirers from 1929 to 1969 and found a negative CAR of -2.8% in his long event window of [-180; +30]. In contrast, Dennis & McConnell (1986) compared a 13-day event window with a 2-day event window and found that the longer event window averaged positive abnormal returns of 4.0% in comparison to the short event window, which returned a CAR of -0.1%. These findings are consistent with Smith & Kim's (1994) findings, who used a [-5; +5] window and found a positive CAR of 0.5%. When they used a [-1; AD[11]] window, the acquirers achieved a negative CAR of -0.2%. These contrasts are consistent with the target literature review (Section 3.1.1),

[11] Day of the announcement

as certain lengths of the event window cannot draw general conclusions regarding the abnormal returns of the acquirer. It is rather, specifically with the acquirers, other factors that influence CAR. Acquisitions paid in cash have over time been a positive contributing factor for the abnormal returns of the acquirers. Franks et al. (1991), Walker (2000), Kohers & Kohers (2000) and Alexandridis et al. (2012) all found positive CARs across four different decades when using 2-day, 3-day, 5-day, 11-day, and 21-day event windows in all-cash takeovers. In line with the target literature, abnormal acquirer returns have also been found slightly greater within the U.S. Yilmaz & Tanyeri (2016) found that over 76,000 acquirers in the U.S. from 1992 to 2011 achieved average abnormal returns of 1.55% when using a [-1; +1] event window. In contrast, the CAR of 24 developed countries, including over 109,000 transactions, achieved a CAR of only 1.35% under the same conditions.

Looking globally at public-to-public transactions, BCG (2018) found that acquirers earned average abnormal returns of -0.8% in a [-3; +3] event window from 1990 to 2017. This result is consistent with previous literature on public-to-public transactions (BCG, 2011; Mulherin & Boone, 2000). Bradley & Sundaram (2004) studied the difference of acquirer returns in public and private acquisitions. Using a sample of 12,476 transactions during the fifth merger wave, they found that acquirers earned negative abnormal returns of -0.7% when the target was public, compared to 2.0% when the target was private. Bradley & Sundaram (2006) described the phenomenon as a 'lemons problems' (Akerlof, 1970) due to information asymmetries between the public buyer and private target. Because the sellers in a private company limit the number of bidders and the information they provide about their firm, the bidder ends up paying a lower price, with the resulting discount effectively accruing to the buyer. While they note that the phenomenon is worthy of further research to draw general conclusions, they also suggest that private acquisitions are more likely to be initiated by the seller, which gives the public acquirers a greater bargaining advantage.

3.3.3 Target & Buyer (combined)

The combined CAR of the target and buyer is an expression of the combined abnormal returns surrounding the announcement date of the transaction. The literature review includes 14 studies from 1989 to 2019 (Appendix 3). The combined CAR in the studies ranges from -0.2% to 11.3% with an average CAR of 3.0%. 97% of the studies reported positive combined abnormal returns and the other 3% representing a study on 1,181 transactions from 1993 to 2007, were when the transactions were equity-financed (Alexandridis et al., 2012). This negative result is consistent with previous findings on cash as payment (Franks et al., 1991; Walker, 2000; Kohers & Kohers, 2000; Alexandridis et al., 2012).

The positive results of combined CAR are not a surprise, considering the results from the literature review on targets (Appendix 1) and acquirers (Appendix 2). Abnormal target returns are mostly positive and abnormal acquirer returns are typically neutral or slightly negative or positive. The formula and components of combined CAR will be presented in Chapter Four.

3.4 CHARACTERISTICS

This section examines the literature on factors contributing to short-term value creation in M&A transactions. As established in the literature review, multiple factors play a significant role in explaining abnormal returns. M&A event studies typically employ two analytical approaches: univariate analysis, which examines each observation (CAR) individually, and multivariate analysis, which incorporates several variables simultaneously. In multivariate analysis, researchers select categorical variables to explain what influences the abnormal returns identified in the univariate analysis, with CAR serving as the response variable.

This thesis incorporates eleven categorical variables in the multivariate analysis, as outlined in Section 1.1 (Table 1), to provide a comprehensive interpretation of the observed abnormal returns. The following sections present findings from existing literature for each variable, facilitating optimal comparison with the multivariate analysis later presented in Chapter Six.

3.4.1 Country

The early empirical evidence on M&A value creation primarily focused on transactions in the United States (Dodd & Ruback, 1977; Jarrell & Poulsen, 1989; DeLong, 2001). This geographic focus can most likely be explained by the pioneering development of empirical finance and event study methodologies at American universities (Sharpe, 1964; Fama et al., 1969; Fama, 1970), along with the higher volume of M&A activity and superior data availability on the U.S. market. As previously established, the empirical evidence shows that abnormal returns are highest in the U.S. (Mulherin & Boone, 2000; Goergen & Renneboog, 2004; Martynova & Renneboog, 2011; Wang & Xie (2009); Yilmaz & Tanyeri, 2016).

Some event studies from the 20th century expanded the focus to include the United Kingdom (Sudarsanam et al., 1996; Firth, 1979). Sudarsanam et al. (1996) examined public-to-public transactions in the U.K. from 1980 to 1990, documenting positive abnormal returns of 29.2% for targets and -4.0% for acquirers.

In emerging markets, Arik & Kutan (2015) observed positive abnormal target returns of 6.6% across 1,648 transactions in 20 countries. Within their sample, Egypt displayed the highest CAR (34.5%) while Chile showed the lowest (-20.8%) using a [-30; +1] event window. Yilmaz & Tanyeri's (2016) global study spanning 1992 to 2011 identified Luxembourg, Sweden, and Finland as countries with the highest target CARs, while Canada, Colombia, and Australia yielded the highest abnormal returns for acquirers. These findings align substantially with Martynova & Renneboog (2006), who ranked Sweden third highest for target firms and Australia third highest for acquiring firms using a [-5; +5] event window.

Looking at more isolated regions, Rose et al. (2017) analyzed public-to-public transactions in Northern Europe (Denmark, Sweden, Norway, Iceland, and Finland) from 1995 to 2014, and found abnormal returns of 23.0% for targets and -1.3% for acquirers using a [-10; +10] event window. While their sample size only consisted of 71 transactions, the target CARs were remarkably higher than those from global samples during the same period (BCG, 2011).

An interesting observation from Goergen & Renneboog's (2004) comparative study of the U.K. and Continental Europe revealed that U.K. targets experienced average abnormal returns of 29.3% compared to just 14.8% in Continental Europe. They attributed this significant disparity to the U.K.'s enhanced disclosure requirements, more liquid equity markets, and stronger shareholder protections. These conclusions align with Bradley & Sundaram's (2006) findings that lower information asymmetry in the U.K. market corresponded to higher premiums paid to sellers.

3.4.2 Industry classification

Industry classification as an independent factor receives less emphasis in event studies compared to variables like payment method or geography. It is, however, a significant contributing factor in explaining abnormal returns as each industry is unique, illustrating why some sectors experience higher M&A activity than others.

Jiang (2019) analyzed the cumulative abnormal returns of 583 horizontal American mergers from 1995 to 2005, categorizing them into four industries: manufacturing, natural resources, service, and wholesale & retail. For acquiring firms, natural resources demonstrated the strongest performance (2.7%), followed by service (-0.1%), manufacturing (-2.8%), and wholesale & retail (-3.2%). In contrast target firms in manufacturing exhibited the highest returns (30.9%), followed by wholesale & retail (22.5%), service (18.4%), and natural resources (14.5%).

The notable difference between CAR of 30.9% (target) and -2.8% (buyer) in manufacturing suggests that acquirers potentially paid excessive premiums, ultimately eroding their own shareholder value. These findings contrast with Alexandridis et al. (2012), who examined target acquisition premiums during the fifth and sixth merger wave in the U.S. They found that manufacturing acquisitions featured the lowest average acquisition premiums (27.9%) based on acquisition prices relative to target market values four weeks prior to announcement. Theoretically, higher acquisition premiums should generate higher abnormal returns for targets as offer prices exceed recent market valuations. This apparent contradiction may stem from differences in sample composition and industry classification, emphasizing the need for further analysis to draw reliable conclusions.

In Europe, using a [-2; +2] event window, Goergen & Renneboog (2004) found that targets in manufacturing earned the second-best abnormal returns of 15.2% while it was the best performing industry of bidding firms (2.9%). Focusing solely on Northern European, Rose et al. (2017) examined CARs in 184 public-to-public M&A transactions from 1995 to 2014. They found that the best performing industry for acquirers in horizontal mergers was transport, communication, and utilities (4.7%) whereas the worst performing industry was agriculture, forestry and fishing (-7.3%). For targets, the best performing industry was manufacturing (33.6%) and the worst performing was wholesale & retail (16.8%).

3.4.3 Financial distress

Financially distressed companies are those struggling to meet their financial obligations (Berk & DeMarzo, 2024). This condition is typically assessed using accounting-based indicators such as cash flow performance or other ratios of earnings and debt.

Smith & Kim (1994) analyzed the CARs of 177 bidding and target firms from 1980 to 1986, categorizing them into high-, intermediate-, and low free cash flow groups based on income-to-asset and earnings-to-price ratios. Their findings revealed that financially distressed bidders earned the highest abnormal returns (6.92%) when acquiring targets with high free cash flow, and that high free cash flow targets generally experienced superior abnormal returns. Goergen & Renneboog (2004) also examined financial distress as a factor in their event study using interest coverage ratio as a measurement. The interest coverage ratio measures the earnings of a company in relation to its interest payments, where a ratio below 1.0 implies that the company cannot cover its interest payments from its earnings. While their research found no significant correlation between this factor and abnormal returns for either acquirers or targets, they did find weak evidence that the target's performance was positively related to the merger or acquisition

premium, using ROE[12] as a measure. This is consistent with Smith & Kim (1994), as a higher ROE implies a financially stronger company.

BCG (2011) conducted a comprehensive study of over 26,000 M&A transactions between 1988 and 2010, also employing the interest coverage ratio to identify distressed targets. They categorized acquirers as either single acquirers or serial acquirers, the latter being acquirers who purchase at least four companies every three years. They found that when acquiring distressed targets, serial acquirers achieved abnormal returns of 0.3%, whereas single acquirers experienced a negative CAR of -1.1% under similar conditions. The observations are interesting, as when considering all targets, single acquirers reported a CAR of 1.5%, compared to serial acquirers' CAR of only 0.3%. The authors attributed this divergence to investor confidence in serial acquirers' ability to successfully restructure distressed targets. They further suggested that acquiring distressed companies enables buyers to negotiate lower deal premiums, with experienced serial acquirers possessing significant advantages in executing such transactions effectively.

3.4.4 Relative size

Relative size refers to the ratio of the target firm's size to that of the bidder, typically measured using market capitalization or total assets. The academic research on this factor is rich, as it has been subject to testing in various event studies (Asquith et al., 1983; Jarrell & Poulsen, 1989). Despite this, empirical evidence offers mixed conclusions about whether acquiring firms generate positive abnormal returns when acquiring smaller targets.

Asquith et al. (1983) examined 33 successful mergers in the U.S. during the third merger wave and documented significantly higher abnormal acquirer returns of 7.1% when the target firm exceeded 10% of the bidding firm's size. In contrast, acquisitions where targets represented less than 10% of the bidder's size achieved abnormal returns of only 2.9%.

Further developing these findings, Jarrell & Poulsen (1989) analyzed 461 tender offers in the U.S. from 1963 to 1986, revealing that the relative size of the target to the acquirer had a positive and significant effect on CAR. This indicated that larger targets relative to acquirers corresponded with higher acquirer CARs. These results align with Franks et al.'s (1991) findings, that higher relative target-to-bidder size ratios correlate with increased abnormal returns for bidding companies. While seemingly counterintuitive,

[12] Return on equity [net income ÷ total equity]

the authors suggest that investors may perceive larger relative deals as more transformative and consequently assign greater value to their successful execution.

Contrary to these early studies, Alexandridis et al. (2012) analyzed 1,479 transactions in the U.S. from 1993 to 2007 and found that acquirer abnormal returns diminished by 1.1% as target size increased relative to the acquirer. Some economists attribute this discrepancy to greater information asymmetry in acquisitions of private targets, whereas acquisitions involving public targets tend to reduce adverse selection due to the broader availability of publicly disclosed information (Feito-Ruiz & Menéndez-Requejo, 2011).

Regarding target abnormal returns, Marynova & Renneboog (2011) studied 760 private and public acquisitions in Europe during the fifth merger wave and determined that increases in target-to-acquirer relative size resulted in significantly negative CARs for targets. Mateev & Andonov (2018) reached similar conclusions when examining 275 public-to-public transactions in Europe during the sixth merger wave. In their final sample of 156 targets, they identified a significant negative relationship between target CARs and the relative size of the target to the bidder. This inverse relationship may reflect investor skepticism regarding acquirers' capacity to pay substantial premiums or generate meaningful synergies when targets are relatively large.

3.4.5 Deal status

Deal status refers to the current state of an M&A transaction, typically categorized as announced, completed, or terminated/withdrawn (canceled). Many private-to-private M&A transactions are announced and completed simultaneously, depending on readily available financing and regulatory approvals. Larger transactions, particularly public-to-public deals, generally require an additional 4 to 8 weeks (minimum) to finalize following the signing announcement (Rosenbaum & Pearl, 2021). Complications arising during this interim period may result in cancellation or withdrawal from the transaction. It is difficult to draw reliable conclusions in M&A event studies, regarding the difference in abnormal returns between completed and withdrawn deals, as investors do not know how the deal will unfold at the time of the announcement (Yilmaz & Tanyeri, 2016). However, there is still a broad consensus in the literature that canceled transactions destroy shareholder value compared to completed transactions.

Dodd & Ruback (1977) conducted one of the first empirical assessments of market reactions to unsuccessful mergers from 1958 to 1978 and found that acquirers earned abnormal returns of 2.8% in successful mergers compared to 0.6% in canceled mergers using only the announcement date as event

window. They found similar significant results for target firms. Dodd (1980) and Asquith et al. (1983) also found that canceled transactions have a negative effect on shareholder value surrounding the announcement date. Varmaz & Laibner (2016) studied the phenomenon in the European banking industry from 1995 to 2015 with matching conclusions, as both parties involved suffered worse returns when the transactions were later canceled. Through logistic regression, they found that the likelihood of an M&A transaction to be canceled is best explained by the bank's past abnormal returns prior to the announcement date. They suggested that this pre-transaction market environment made managers more likely to cancel the announced transactions, as past negative abnormal returns increased the likelihood of cancellation significantly.

3.4.6 Deal attitude

As hostile deals became a more acceptable form of market expansion in the 1980s, several economists wanted to research if these created or destroyed value for the combining entities. The consensus in the literature is that target firms achieve higher abnormal returns in opposed bids, whereas the effect is negative on bidding firms in most cases (Lang et al., 1989; Franks et al., 1991; Goergen & Renneboog, 2004).

Franks et al. (1991) found that opposed offers in the U.S. favored target firms as they earned 10.8% higher abnormal returns in such cases. Servaes (1991) found similar results in the U.S. where hostile deals amounted to 9.8% higher abnormal returns. In Europe, several studies have drawn the same conclusions (Goergen & Renneboog, 2004; Martynova & Renneboog, 2011). These occurrences can be explained by the market's expectations of hostile bids, as they expect a revision of the offer, ultimately leading to a higher bid premium. Goergen & Renneboog (2004) confirmed this in their analysis of acquirers, as friendly acquisitions in their study generated positive abnormal returns of 2.5% whereas hostile acquisitions reported negative abnormal returns of -2.5%. These findings can also be explained by the hold-out argument, which postulates that bidders need to pay a higher premium to convince target shareholders to sell their shares (Martynova & Renneboog, 2011).

In contrast to the above findings, Banerjee & Owers (1996) studied the CAR of bids in the U.S from 1978 to 1987 including 'white knights' and hostile bidders. White knights are a designation of friendly bidders, that aid the targeted company during a hostile takeover (Gaughan, 2017). They reported negative abnormal returns of -4.1% for white knights and positive abnormal returns of 1.3% for hostile bidders. These findings are consistent with Kuipers et al. (2009), who attribute the acquirer's positive abnormal

returns in hostile bids to reduced agency costs, as replacing entrenched target management enhances the combined firm's value.

3.4.7 Method of payment

The empirical evidence on payment methods in M&A value creation is rich, with a broad consensus that acquisitions paid in cash yield the highest abnormal returns for both acquirers and targets (Wanley et al., 1983; Franks et al., 1991; Walker, 2000; Andrade et al., 2001).

This is often attributed to the signaling effect (Neumann & Morgenstern, 1944) as when bidders use their own stock to finance a deal, the market may interpret this as a sign that the acquirer believes its shares are overvalued (Travlos, 1987). In contrast, cash offers can be interpreted as a signal of bidder confidence, typically leading to higher abnormal returns. Andrade et al. (2001) reinforced these findings in a large sample of 3,688 M&A transactions between 1973 and 1998. They concluded that cash deals generated more positive CARs for acquirers and noted that the market tends to react more favorably to transactions with lower information asymmetry.

Contrary to the literature consensus, Goergen & Renneboog (2004) examined primarily public buyers (142 out of 187), including only transactions with a deal value above $100m and observed that stock-financed acquisitions in Europe during the fifth merger wave resulted in higher abnormal returns for acquirers. They attributed this to institutional differences, such as more concentrated ownership structures and reduced information asymmetry, which mitigate the negative signaling typically associated with equity financing. However, Martynova & Renneboog (2011) later reported the opposite in their study on the fifth merger wave in Europe, showing that cash deals outperformed stock deals in terms of acquirer returns, consistent with the literature consensus. This inconsistency may be explained by differences in sample composition, as the 2011 study included both public and private targets, no restrictions on deal value and a significantly larger sample size, potentially introducing greater variability in deal structure and market perception.

3.4.8 Sponsor backed

The literature also explores the role of financial sponsors, particularly PE firms, as a determinant of abnormal returns around M&A announcements. While financial buyers are often praised for their financial discipline, deal structuring expertise, and focus on value extraction through operational improvements or restructuring, several studies document that acquisitions led by financial sponsors are associated with lower abnormal returns for both targets and acquirers (Bargeron et al., 2008; Arik &

Kutan, 2015; Jenner et al., 2016). The empirical evidence also suggests that markets tend to respond less favorably to their involvement compared to strategic (corporate) acquirers.

Dittmar et al. (2012) found that corporate acquirers earned significantly higher CAR when bidding against financial buyers, compared to when the competition came solely from other corporate bidders. While they could not explain the difference through testing of various deal characteristics, they attributed this difference to the financial sponsors' superior skills in identifying targets and negotiating M&A deals. Another potential factor could also be because the market reacts more positively towards deals previously engaged by a financial buyer.

Jenner et al. (2016) found that when the acquiring firm was backed by private equity, bidder announcement returns were significantly lower. Their study analyzed 1,800 U.S. transactions from 1978 to 2012 and found that bidder PE backing was consistently associated with negative CARs across multiple windows, even after controlling for deal-level and firm-level variables. These results suggest that markets may view PE-backed acquisitions with skepticism, potentially due to concerns over shorter investment periods, financial engineering, or a lack of operational integration potential.

While the above studies focus on financial sponsors as acquirers, Arik & Kutan (2015) considered the role of financial sponsors on the target side. They found that when the target firm was acquired by a private equity firm, the target experienced negative abnormal returns between -4.5% and -6.4%. These results are consistent with the findings of Bargeron et al. (2008) who examined cash-only merger and acquisition deals between U.S. bidders and U.S. public targets announced between 1980 and 2005. Using an 11-day event window, they found that the targets earned a CAR of 32.9% when the bidder was public, 24.0% when the bidder was private, and 21.8% when the bidder was a PE firm. Overall, the literature supports the view that financial sponsors are an important factor in explaining abnormal returns in M&A event studies.

3.4.9 Related industry

Unlike the industry effects discussed in section 3.4.2, this section reviews the literature regarding industry-related transactions usually classified as either horizontal or diversifying mergers. According to traditional synergy theory (Section 2.1), horizontal mergers are generally expected to create value through operational synergies, whereas the rationale behind diversifying mergers often involves financial synergies (Sudarsanam, 2003). Empirical evidence supports these theoretical distinctions.

Sicherman & Pettway (1987) examined U.S. acquisitions of divested assets from 1983 to 1985 and found that related acquisitions generated a CAR of 3.2% for acquirers, while unrelated ones yielded a CAR of -0.7%. Walker (2000) expanded on this by studying U.S. mergers from 1980 to 1996 and confirmed the trend with more recent data. He found that related industry acquisitions resulted in an almost neutral CAR of 0.1%, while unrelated acquisitions yielded significantly negative returns of -1.6% for acquirers. Fan and Goyal (2006) provided further insights by analyzing a combined period of U.S. mergers from 1962 to 1996 and reported that horizontal mergers generated a combined CAR (for acquirers and targets) of 3.3%, while diversifying mergers produced a lower combined CAR of 1.3%.

Similar empirical results have been found in Europe, where Martynova & Renneboog's (2011) study on both private and public M&A transactions reported average abnormal returns with the acquirers' CAR of 1.0% for related deals in contrast to 0.5% for non-related deals. They found opposite results for targets, where industry-related transactions yielded a CAR of 15.2% compared to 17.4% in diversified deals. This suggests that acquirers entering unfamiliar industries offer higher premiums to convince target shareholders to sell, thereby increasing the abnormal returns of the targets. These findings are consistent with earlier studies on targets in the U.S. where conglomerate mergers on average achieved abnormal returns higher than non-conglomerate mergers (Wansley et al., 1983; Maquieira et al., 1998).

Overall, these findings support the consensus that mergers within related industries tend to create more value for acquirers, aligning with the expectations of value-enhancing synergies. While financial synergies are often viewed as a rationale for diversification, empirical evidence suggests that these benefits are not truly realized. Simultaneously, targets may benefit from unrelated acquisitions through higher premiums offered by acquirers seeking entry into new industries.

3.4.10 Cross-border

Cross-border transactions have become an increasingly researched factor in more recent literature, as M&A activity spread globally during the fifth merger wave (Section 3.1.5) and European data became more available (Goergen & Renneboog, 2004). Earlier empirical evidence focused on cross-state transactions in the U.S. (DeLong, 2001). The literature is generally inconsistent as to whether cross-border acquisitions are value enhancing post-merger. While several studies show that cross-border deals generate superior abnormal returns, the deals often introduce additional complexity, including cultural differences, legal systems, and informational asymmetry.

The U.S.-based evidence from DeLong (2001) supports geographic focus in M&A. She found that targets in intrastate mergers earned higher abnormal returns (18.3%) than those in geographically diversified

ones (15.3%). This relationship was also true for acquirers, who earned a CAR of -1.5% in intrastate deals versus -1.9% in geographically diversified deals. These findings suggest that local familiarity often results in higher premiums.

In Goergen & Renneboog's (2004) European study, they found that cross-border acquisitions resulted in significantly higher short-term abnormal returns for acquirers of 3.1% compared to domestic deals of -0.1% within a [-2; +2] event window. The same results were apparent for target companies, who averaged abnormal returns of 13.5% in cross-border acquisitions compared to only 12.7% in domestic deals. However, when they expanded the event window to [-60; +60], the relationship of target returns reversed. Domestic targets ultimately received higher premiums, partly because their sample included more UK firms, which typically experience stronger shareholder protections and disclosure (Section 3.4.1). Similar to these results, Martynova & Renneboog (2011) found that bidders earned higher abnormal returns in cross-border acquisitions using a [-5; +5] window, although when expanding their event window to [-60; +60], this relationship reversed. They further attributed these differences to institutional environments of Europe, where shareholder protection is weaker relative to the U.K.

Mateev & Andonov (2018) found that target shareholders in cross-border transactions earned slightly higher CARs (7.97%) compared to domestic transactions (6.98%), although this difference was only marginally significant. They also concluded that higher cross-border premiums were not driven by firm characteristics or payment methods but were instead influenced by the quality of investor protection in the bidder's country. While empirical evidence from the literature shows conflicting results depending on region, event window and institutional context, it is apparent that cross-border is a significant factor in explaining short-term wealth creation in M&A studies.

3.4.11 Time of crisis

It has been established that M&A activity exhibits cyclical behavior, determined as waves that occur due to regulatory, technological or economic shocks, as well as increased capital liquidity (Mitchell & Mulherin, 1996; Harford, 2005). These waves have been found to come to an end due to contractionary monetary policies to prevent overheating and economic recession. Emiru & Weisblatt (2025) found an inverse relationship between M&A volume and American industrial production, the latter serving as a proxy for overall economic activity. Historical evidence supports this cyclicality: the first merger wave emerged after the depression of 1883-1885, the second followed World War I, the third began after the Eisenhower Recession (1958), the fourth unfolded after the 1980-1982 recession, the fifth commenced

after the recession of 1990, and the sixth developed after both 9/11 and the dot-com bubble (Urquhart & Hewson, 1983; Becker & McClenahan, 2011; Gaughan, 2017).

Despite robust empirical evidence for this relationship, the literature presents conflicting conclusions regarding M&A wealth creation during crisis periods. A prominent event study of wealth creation during financial downturns is Beltratti & Paladino's (2013) examination of European transactions from 2007 to 2010. Although criticized for its exclusive focus on the banking sector, their research found no significant returns surrounding transaction announcement dates.

To further investigate these findings, Rao-Nicholson & Salaber (2016) conducted an event study on over 2,200 deals in Europe from 2004 to 2012. As the first quarter of 2009 was when all European countries were officially in recession, they split their univariate analysis on CAR at this point in time. Their results showed a significant difference in CAR of 0.7%, favoring transactions conducted post-crisis. They attributed the abnormal returns of acquirers to target firms' apparent devaluations and reduced transactions costs resulting from the financial crisis. They also stated that resource redeployment is crucial for the survivability of companies in a weak economy. This is consistent with Gaughan (2009), who described it as a waiting game, where companies with a weaker cash flow are unable to wait for capital markets to revive. This ultimately favors well-capitalized strategic buyers, as they are potentially able to buy targets at a discount.

BCG (2019) conducted an extensive study on dealmakers' performance during economic downturns, examining approximately 10,000 deals from 1980 to 2018. Using CAR as a short-term wealth measure and relative total shareholder return[13] (RTSR) as a long-term metric, they found that buyers significantly benefit from transactions conducted in weak economic conditions. Using an event window of [-3; +3], the difference in CAR was 0.2%, whereas the difference in RTSR after one year reached 6.7%, favoring buyers acquiring in economic downturns. Additionally, they analyzed 386 divestitures with deal values exceeding $250 million, including only transactions with public sellers. The difference in CAR for selling companies was 0.3%, and 6.2% when examining RTSR. These findings further corroborate Rao-Nicholson & Salaber (2016), indicating that sellers tend to divest assets at discounts during crises, ultimately generating greater abnormal returns for buyers, particularly from a long-term perspective.

[13] The total shareholder return (TSR) generated by the acquirer over a time period subtracted by a benchmark index i.e. the return relative to the benchmark return (RTSR) (BCG, 2019).

The empirical literature on deal-, firm-, and macroeconomic-specific characteristics reveals several recurring patterns in terms of M&A value creation. While there is a consensus regarding many of the variables, there are still several inconsistencies suggesting the need for further research. These inconsistencies, as well as the general findings throughout the literature, will be compared to the results of the empirical analysis in Chapter Six. An overview of the findings is presented in Table 3.

Table 3: Overview of characteristics

Categorical Variable	Literature consensus		Source
	Target	Buyer	
Country	• U.S. • Sweden	• U.S. • Australia	• Mulherin & Boone (2000) • Goergen & Renneboog (2004) • Martynova & Renneboog (2006) • Wang & Xie (2009) • Yilmaz & Tanyeri (2016)
Industry	• Manufacturing	• Conflicting	• Martynova & Renneboog (2006) • Jiang (2009) • Rose et al. (2017)
Financial distress	• Negative effect when distressed	• Positive effect when distressed	• Smith & Kim (1994) • Goergen & Renneboog (2004)
Relative size	• Negative effect when larger	• Positive effect when larger	• Asquith et al. (1983) • Jarrell & Poulsen (1989) • Franks et al. (1991) • Marynova & Renneboog (2011) • Mateev & Andonov (2018)
Deal status	• Negative effect when canceled	• Negative effect when canceled	• Dodd & Ruback (1977) • Dodd (1980) • Asquith et al. (1983) • Varmaz & Laibner (2016)
Deal attitude	• Positive effect when hostile	• Negative effect when hostile	• Lang et al. (1989) • Franks et al. (1991) • Servaes (1991) • Goergen & Renneboog (2004) • Martynova & Renneboog (2011)
Method of payment	• Cash	• Cash	• Wansley et al. (1983) • Franks et al. (1991) • Walker (2000) • Andrade et. al (2001) • BCG (2011) • Martynova & Renneboog (2011) • Alexandridis et al. (2012)
Sponsor backed	• Negative effect when sponsored	• Negative effect when sponsored	• Bargeron et al. (2008) • Arik & Kutan (2015) • Jenner et al. (2016)
Related industry	• Negative effect when related	• Positive effect when related	• Wansley et al. (1983) • Maquieira et al. (1998) • Sicherman and Pettway (1987) • Walker (2000) • Martynova & Renneboog (2011)
Cross-border	• Conflicting	• Conflicting	• DeLong (2001) • Goergen & Renneboog (2004) • Martynova & Renneboog (2011) • Mateev & Andonov (2018)
Time of crisis	• Negative effect during crisis	• Positive effect during crisis	• Beltratti & Paladino (2013) • Rao-Nicholson & Salaber (2016) • BCG (2019)

Source: Author's own creation.

4. METHODOLOGY

The purpose of this chapter is to introduce the reader to the applied methodology used in the empirical analysis. As previously discussed, the thesis follows the event study methodology (Section 1.3; Section 2.4). The event study methodology is a standardized approach in finance to evaluate the effects of firm-specific events on stock returns (Linton, 2019). These firm-specific events can essentially be any corporate event such as M&A, earnings or macroeconomic announcements. The main application in finance has been to test whether the event is consistent with the EMH (Linton, 2019). The faster an event causes a change in the market valuation of the firm, the more efficient the market is (Gaughan, 2017). Inspired by Strong (1992) and MacKinlay (1997), the thesis uses the following event study methodology:

i. Identify event dates (European M&A announcements, 2000 - 2024)
ii. Identify the estimation and event window ([-252; -11] , [-10; +10])
iii. Define the measurement interval (daily closing stock prices)
iv. Calculation of returns (simple returns)
v. Accumulate abnormal returns over time (CAR)
vi. Choice of benchmark for abnormal returns (MM, CMR, CAPM)
vii. Choice of market index (local indices, MSCI Europe)

4.1 ESTIMATION AND EVENT WINDOW

To measure the short-term value creation for both acquirers and targets, the official announcement date of the transactions has been chosen as the event dates. This is chosen on the premise that this is the most accurate time for capturing the market's true response to the announcements. This prerequisite is consistent with the semi-strong form of market efficiency, as earlier studies have found statistically significant evidence of inside information up to 12 trading days prior to the first public announcement (Keown & Pinkerton, 1981).

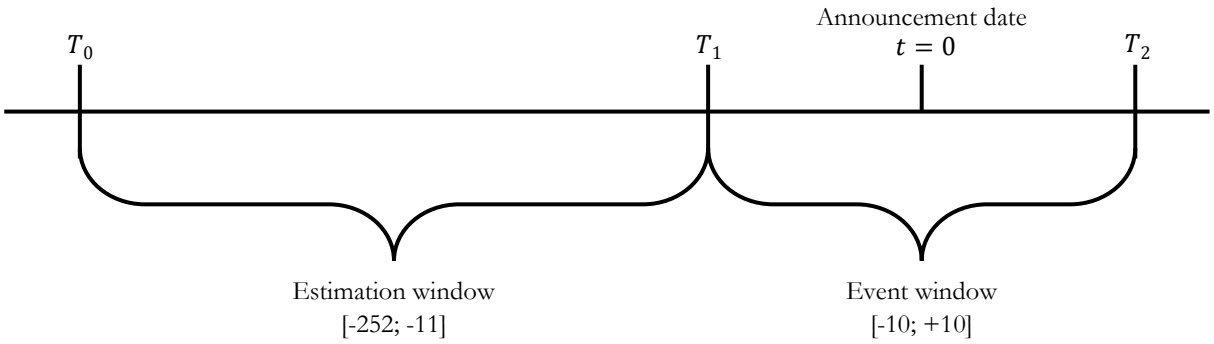
Event studies are comprised of an event window and an estimation window. It is custom to expand the event window further than just the day of the event, to fully capture its effect (MacKinlay, 1997). This allows for examination of the period surrounding the event. Vice versa, the estimation window is typically a larger period leading up to the event window. The estimation window serves as a pre-event period, where the event is not expected to influence the abnormal returns. This allows for parameter estimation leading up to the event, when there are no persistent abnormal returns (Strong, 1992).

In contrast to studies on empirical asset pricing, where monthly interval data has been found superior (Alexander & Chervany, 1980; Bartholdy & Peare, 2005), event studies usually employ shorter time periods. Brown & Warner (1985) found that although monthly returns exhibit greater normality in the data set, daily returns offer greater statistical power because of the increased number of observations and tighter event windows. As this thesis aims to assess the short-term value creation, daily returns will be used in the empirical analysis.

While Strong (1992) states that a 500-day estimation window is appropriate when using daily returns, the literature generally uses an estimation window of approximately 250 days (MacKinlay, 1997; Mcwilliams & Siegel, 1997; Beitel et al., 2004). Peterson (1989) argued that a 100-300 estimation window is appropriate when using daily returns. She attributed this to the consequences of using an event window that is too long, as it might increase the chance of outliers and decrease the relevancy of the stocks' performance. Increasing the number of observations can also potentially cause unwanted noise in the data set and interfere with the stochastic process.

In line with the common academic approach, this thesis uses a 252-day estimation window (MacKinlay, 1997; Mcwilliams & Siegel, 1997; Beitel et al., 2004). Additionally, based on the literature review, the event window comprises 21 days [-10; +10], with shorter sub-intervals of 11 days [-5; +5], 7 days [-3; +3], and 3 days [-1; +1], to fully capture the effect of the announcement and to ensure reliable comparability with previous academic findings. The estimation and event window is illustrated in Figure 4, where returns are indexed in event time using t, where $t = T_0 + 1$ to $t = T_1$ is the estimation window, $t = T_1 + 1$ to T_2 is the event window and day $t = 0$ is the event date (MacKinlay, 1997):

Figure 4: Timeline of the event study



Source: Authors' own creation.

4.2 SIMPLE LINEAR REGRESSION (SLR)

Evident in the literature review, M&A event studies typically consist of a simple linear regression analysis, followed by a cross-sectional regression analysis, to test if there is a sensible relationship between the event and deal or firm characteristics. To answer the research question of the thesis, the univariate analysis either supports or falsifies the first null hypothesis, stating that CAR is significantly different from zero on the announcement date. Subsequently, the multivariate analysis either supports or falsifies the second null hypothesis, testing if there are significant statistical relationships between CAR and the explanatory variables. Specifically, the multivariate analysis relates the size of CAR to cross-sectional characteristics (Linton, 2019). The simplest notation of a linear regression can be expressed as (Linton, 2019):

$$y_i = \alpha + \beta x_i + \varepsilon_i \tag{4}$$

Where y_i is the dependent variable, α is the intercept (value of y when x equals 0), β is the slope (the degree of changes in y for a unit change in x), x_i is the independent variable (predictor) and ε_i is the error term (the part not explained by the model). In the context of abnormal returns (AR), the goal is to estimate how the stock returns differ from their expected returns. As such, the measurement of AR will be presented in the following sections before specifying the models used in the empirical analysis.

4.2.1 Measuring abnormal returns

Contrary to Strong (1992) and MacKinlay (1997), this thesis uses simple returns rather than log returns, as more recent studies suggest that the difference is small over shorter periods when using daily data (Aas, 2004). This approach is consistent with several former event studies (Brown & Warner, 1985; Goergen & Renneboog, 2004; Martynova & Renneboog, 2006). Hudson & Gregoriou (2015), studying a sample of the Dow Jones Index from 1897 to 2009, found that the mean returns of the two methods differ significantly, and that simple returns exhibit greater significance levels. Furthermore, while log returns provide a more normalized measure of volatility, its compounding effect is less relevant in studies on short-term returns (Müller, 2024). Simple returns are calculated as:

$$R_{i,t} = \frac{S_{i,t} - S_{i(t-1)}}{S_{i(t-1)}} \tag{5}$$

Where $R_{i,t}$ is the return of stock i at day t, $S_{i,t}$ is the price of stock i at day t and $S_{i(t-1)}$ is the price of stock i at day t-1.

To estimate abnormal returns (AR), the thesis applies three commonly used models for expected returns: the Market Model (MM), the Constant Mean Return model (CMR), and the Capital Asset Pricing Model (CAPM), as discussed in Section 2.3. Across all three models, abnormal returns $AR_{i,t}$ are calculated as the difference between the actual observed return and the expected return of stock i on day t (Brown & Warner, 1985):

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \tag{6}$$

Where $R_{i,t}$ is the actual return and $E(R_{i,t})$ is the return predicted by the chosen model. Once abnormal returns have been estimated for all stocks and event days, the average abnormal return (hereafter AAR) on each day t is computed as the cross-sectional average of all firms' abnormal returns (Brown & Warner, 1985):

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t} \tag{7}$$

This allows for the analysis of the market's response on each specific day within the event window. Given the chosen 21-day event window [−10; +10], AAR values are calculated for each of these 21 days to track the average short-term reaction to the M&A announcements. The cumulative abnormal return (CAR) of firm i is calculated as the sum of $AR_{i,t}$ for each firm in the respective event windows (MacKinlay, 1997):

$$CAR_i = \sum_{t=t_1}^{t_2} AR_{i,t} \tag{8}$$

Finally, the cumulative average abnormal returns (hereafter CAAR) represent the average of all individual firms' CAR, representing the overall market reaction to the announcements in the respective event windows (MacKinlay, 1997):

$$CAAR_t = \frac{1}{N}\sum_{i=1}^{N} CAR_{i,t} \tag{9}$$

This approach enables testing for statistically significant market reactions both on individual days and across the event window. The applied methods for statistical testing will be presented in Section 4.3. Lastly, much of the literature also considers the combined effects of CAR. To measure the combined effect, the thesis follows the approach of Meier & Servaes (2014):

$$\frac{CAR_B(MV_B - OWN_B^T MV_T) + CAR_T(MV_T)}{MV_A + MV_T - OWN_B^T MV_T} \quad (10)$$

Where CAR equals the cumulative abnormal returns for either the target T or buyer B, MV is the market value of equity two days prior to the announcement and OWN_B^T is the fraction of the target owned by the bidder prior to the announcement.

4.2.2 The Market Model (MM)

The Market Model is widely regarded as the most commonly used benchmark in event studies (Strong, 1992; MacKinlay, 1997). It estimates a stock's expected return using an OLS regression of the stock's returns on the returns of a market index over the estimation period. Specifically, the intercept α_i and slope β_i are derived by regressing individual security returns on market returns (Sudarsanam, 2003). Unlike CAPM, the Market Model does not rely on economic assumptions about equilibrium in security prices. Moreover, it tends to produce smaller variances in abnormal returns compared to raw returns, thereby enhancing its statistical power (Strong, 1992). MM relies on a set of statistical assumptions, including a linear relationship between the security and the market returns, homoscedasticity and normality in the error terms, normally distributed market returns, and an absence of significant autocorrelation in the residuals (Coutts et al., 1994; MacKinlay, 1997). The Market Model is formally expressed as (MacKinlay, 1997):

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \quad (11)$$

Where the error term is assumed to satisfy:

$$E(\varepsilon_{i,t} = 0), \qquad Var(\varepsilon_{i,t}) = \sigma_{\varepsilon_i}^2 \quad (12)$$

Where $R_{i,t}$ is the return of stock i at day t (assuming no special event occurred), α_i represents the stock's abnormal return when the market return is zero, β_i is the risk factor (Section 2.3.1), $R_{m,t}$ is the market returns at day t and $\varepsilon_{i,t}$ represents excess returns that are not explained by market movements i.e. the impact of the event.

The abnormal returns of stock i at time t (Equation 6) is then estimated as the difference in the actual return $R_{i,t}$ (Equation 5) and the return $(\alpha_i + \beta_i R_{m,t})$ provided by MM (Equation 11):

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t}) \quad (13)$$

As previously outlined in Chapter Two, the thesis uses both local indices and the MSCI Europe Index as benchmarks to estimate the MM and CAPM. Both methods are consistent with previous academic approaches (MacKinlay, 1997; Goergen & Renneboog, 2004; Bartholdy & Peare, 2005; Mateev & Andonov, 2018).

4.2.3 The Constant Mean Return Model (CMR)

The Constant Mean Return Model (CMR) is also a statistical, yet simpler model than MM. Also commonly referred to as 'Mean Adjusted Returns', it measures the simple average return of the stock over the estimation period. While it is one of the simplest models, it is often found to provide similar results to more sophisticated models, as the variance of abnormal returns are usually not reduced much more (Brown & Warner, 1985). MacKinlay (1997) expresses it in the following way, where the mean is assumed constant:

$$R_{i,t} = \mu_i + \varepsilon_{i,t} \tag{14}$$

Where the error term is assumed to satisfy:

$$E(\varepsilon_{i,t}) = 0, \qquad Var(\varepsilon_{i,t}) = \sigma_{\varepsilon_i}^2 \tag{15}$$

Where μ_i is the constant mean on stock i. As this paper employes an estimation window of 252 days [-252; -11], the CMR can be expressed as (Brown & Warner, 1985):

$$\overline{R_i} = \frac{1}{T_i} \sum_{t=-252}^{-11} R_{i,t} \tag{16}$$

Where $\overline{R_i}$ is the mean return of stock i and T_i is the length of the estimation window. The abnormal returns of stock i at time t (Equation 6) is then estimated as the difference in the actual return $R_{i,t}$ (Equation 5) and the mean return $\overline{R_i}$ of stock i provided by CMR (Equation 16):

$$AR_{i,t} = R_{i,t} - \overline{R_i} \tag{17}$$

4.2.4 The Capital Asset Pricing Model (CAPM)

The final model included in the empirical analysis is the Capital Asset Pricing Model (CAPM), which in contrast to the other models represents an economic approach. While CAPM was historically considered the most appropriate model for estimating expected returns in event studies, it has gradually lost ground. This decline is largely attributed to its strong and often unrealistic assumptions, as well as empirical

evidence showing that beta values alone do not adequately explain cross-sectional variation in average returns (MacKinlay, 1997; Artmann et al., 2012). A detailed discussion of the CAPM and its theoretical background is provided in Section 2.3. The abnormal return under the CAPM (Equation 2) is calculated as:

$$AR_{i,t} = R_{i,t} - \left[R_f + \beta_{i,m}\left(R_{m,t} - R_f\right)\right] \tag{18}$$

4.3 STATISTICAL TESTS

The purpose of the thesis is to examine how M&A announcements affect the short-term value of the target and acquiring company, stipulated by the underlying hypotheses. To support or falsify the proposed hypotheses, statistical tests of the abnormal returns are necessary. The literature primarily supports the use of two-tailed tests in the shape of parametric tests, sometimes with complementary use of non-parametric tests (MacKinlay, 1997; Campbell et al., 1997). Two-sided tests posit a null hypothesis stating that a certain variable is zero and an alternative hypothesis stating that the variable is different from zero. For M&A event studies, the null hypothesis and alternative hypothesis can be expressed as:

$$H_0: CAAR(T_1, T_2) = 0$$

$$H_1: CAAR(T_1, T_2) \neq 0$$

Where $CAAR$ represents the abnormal returns in the event window (T_1, T_2)

Event studies employ various statistical tests with differing levels of aggregation. As noted by Serra (2004), the evolution of event study methodology has produced a spectrum of tests ranging from single-security to portfolio-level analyses. For completeness, the parametric testing framework is presented across multiple levels of aggregation. For individual securities, the abnormal return significance can be tested using a basic t-statistic:

$$t_{AR_{i,t}} = \frac{AR_{i,t}}{\hat{\sigma}_{AR_i}} \tag{19}$$

Where σ_{AR_i} represents the standard deviation of abnormal returns for security i during the estimation window. For cumulative effects at the individual security level, a basic t-test can also be applied for CAR:

$$t_{CAR} = \frac{CAR_t}{\hat{\sigma}_{CAR}} \tag{20}$$

While this approach offers insight into the statistical significance of single observations, its inferential power for cross-sectional analysis is limited (Binder, 1998). To examine its effects across a sample, a joint t-test on AAR allows for better testing of inferences during the event window:

$$t_{AAR_t} = \sqrt{N}\frac{AAR_t}{\hat{\sigma}_{AAR_t}} \tag{21}$$

Where N represent the total number of observations (792) included in the event study. This approach ensures that the significance of abnormal returns on specific days are effectively captured within the event window. However, as the central question in event studies typically concerns the significance of abnormal returns across the entire sample, the most essential t-test is conducted on CAAR (Martynova & Renneboog, 2006):

$$t_{CAAR} = \frac{CAAR_t}{\hat{\sigma}_{CAAR_t}} \tag{22}$$

Where the cross-sectional standard deviation of CAR ($\hat{\sigma}_{CAAR_t}$) over the event window t is calculated as:

$$\hat{\sigma}_{CAR_t} = \sqrt{\frac{1}{N^2}\sum_{i=1}^{N}\sum_{t=t_1}^{t_2}\hat{\sigma}_i^2} \tag{23}$$

Where $\hat{\sigma}_i$ is an estimator of the standard deviation of AR for stock i measured across the estimation window (T_0, T_1). Using the MM, this is expressed as:

$$\hat{\sigma}_i = \sqrt{\frac{1}{L_i - 2}\sum_{t=T_{0i}}^{T_{1i}}\left(R_{i,t} - \left(\alpha_i + \beta_i R_{m,t}\right)\right)^2} \tag{24}$$

Where L_i is the number of observations for stock i during the estimation window (T_0, T_1) equaling 252 days [-252; -11].

While parametric tests are widely used in event studies, their application requires certain assumptions about the underlying data. The t-test assumes that abnormal returns are normally distributed, independent across securities, and stationary over time. However, empirical evidence suggests that daily stock returns often exhibit non-normality, characterized by leptokurtosis (fat tails) and skewness (Brown & Warner, 1985).

Despite these violations of normality assumptions, Brown & Warner (1985) found that the standard parametric tests are generally well-specified for event studies using daily returns. This robustness stems from the Central Limit Theorem (CLT), which states that as sample size increases, the sampling distribution of means approaches normality regardless of the underlying distribution. In most event studies with a reasonable sample size ($N > 30$), the distribution of average abnormal returns tends toward normality. Given that this thesis' sample size of 792 transactions far exceeds the minimum requirements for the CLT's distributional properties, the parametric assumptions underlying the statistical tests are considered sufficiently satisfied (Gujarati & Porter, 2009; Wooldridge, 2012).

Additionally, Dyckman et al. (1984) found that the non-normality of daily return residuals has a small effect on the inferences encountered when using t-tests on portfolios. This is consistent with Berry et al. (1990) who compared parametric and non-parametric tests on daily data, concluding that non-parametric should be exercised with caution in terms of drawing inference from their use. Extending on this, Henderson (1990) stated the following when reviewing earlier empirical evidence:

"The guidance from these studies is clear. Nonparametric tests are an unnecessary complication and do not work well. The choice is the simple t test or, for aggregated excess returns, tests based on sums of t's or sums of squared t's."

Another consideration in event studies is the potential for cross-sectional dependence, which occurs when abnormal returns across different securities are correlated. This can arise when events are clustered in calendar time or when sample firms belong to the same industry (Kolari & Pynnönen, 2010). While this study uses standard t-tests, which do not adjust for such dependence, the impact is expected to be limited given the large and diverse sample size. Consistent with previous academic findings, this thesis applies parametric t-tests throughout the empirical analysis to evaluate the statistical significance of abnormal returns associated with M&A announcements on the European market.

4.4 MULTIPLE LINEAR REGRESSION (MLR)

A multiple linear regression (MLR) or cross-sectional regression analysis is employed to test the chosen categorical variables that may influence abnormal returns in M&A announcements (MacKinlay, 1997). The MLR extends the simple linear regression (SLR) presented in Section 4.2 by testing multiple variables simultaneously. It estimates the effect of independent variables on the dependent variable (CAR) by measuring the impact of changing one variable while holding other categorical variables constant. These effects are quantified through regression coefficients. This approach enables the testing of firm-specific or deal-specific characteristics on CAR. Similar to the Market Model, the MLR can be estimated using the OLS method with k independent variables (Wooldridge, 2012):

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k + \varepsilon \tag{25}$$

Where y is the dependent variable (CAR), β_0 is the intercept, $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients of the independent variables, $x_1, x_2, \dots, x_k$ are the independent variables and ε is the error term. The regression coefficients $\beta_1, \beta_2, \dots, \beta_k$ represent the marginal effects of each independent variable on the dependent variable (CAR), holding all other variables constant. The statistical significance of these coefficients is assessed using t-tests, with the null hypothesis that $\beta_i = 0$. Inputting the chosen categorical variables (i.e., with underlying dummy variables in the actual regression), the MLR is expressed as:

$$\begin{aligned} y = \beta_0 + \beta_1 Country + \beta_2 Industry + \beta_3 Distressed + \beta_4 Relative\ size + \beta_5 Deal\ status + \\ \beta_6 Deal\ attitude + \beta_7 Consideration + \beta_8 Sponsor\ backed + \beta_9 Related\ industry + \\ \beta_{10} Cross\ border + \beta_{11} Crisis + \varepsilon_i \end{aligned} \tag{26}$$

4.4.1 Model specification and diagnostics

As with SLR, MLRs using the Ordinary Least Squares (OLS) method rely on several critical assumptions to ensure statistically reliable conclusions. The methodology for testing the assumptions will be presented in this section before application in the empirical analysis. For valid statistical inference in the OLS regression, the model assumes the following (Wooldridge, 2012):

i. Linearity: A linear relationship must exist between the dependent variable and independent variables.
ii. Zero conditional mean: The error term's expected value is zero given the independent variables.
iii. Normality: Error terms must follow a normal distribution.
iv. Homoscedasticity: Error terms must exhibit constant variance across all levels of the predictors.
v. Independence: Error terms must be stochastically independent of one another.
vi. No multicollinearity: Independent variables must not exhibit high correlation with each other.

The linearity assumption will be examined through scatter plots of observed versus predicted values and residuals versus predicted values. This visual assessment will be complemented by a Ramsey RESET Test (Regression Equation Specification Error Test), which detects non-linear relationships by testing whether powers of the fitted values have explanatory power in the model (Ramsey, 1969). The null hypothesis posits that the model is correctly specified, whereas rejection indicates potential non-linearities or omitted variables. These approaches will also be applied to test the assumptions of zero conditional mean.

Normality will be assessed through graphical and statistical methods. Graphical methods include a Q-Q plot of the residuals and a histogram with superimposed normal density curves. The visual diagnostics will be supplemented by formal normality tests: a Jarque-Bera Test, which evaluates the combined effects of skewness and kurtosis, and an Anderson-Darling Test, which gives more weight to observations in the tails of the distribution (Jarque & Bera, 1980; Anderson & Darling, 1952). However, these normality tests often reject the null hypothesis in large samples due to their statistical power (Kim, 2013; Mishra et al., 2019). With the data set of daily returns far exceeding 300 observations, Kline's (2016) pragmatic approach will be applied, considering the data acceptably normal if skewness values remain below 3 and kurtosis values below 10. Kline (2016) further adds to this, stating that a kurtosis above 20 is a significant breach of the normality assumption.

Homoscedasticity will be evaluated through residual plots against predicted values, looking for consistent scatter across the range of predictions. This will be backed by a Breusch-Pagan Test, which regresses the squared residuals on the independent variables to detect patterns in error variance (Breusch & Pagan, 1979). For robustness, a White Test will also be employed, which accounts for potential non-linear forms of heteroscedasticity (White, 1980). If heteroscedasticity is detected, heteroscedasticity-consistent standard errors (HC3 variant) will be implemented as recommended by MacKinnon & White (1985) for more reliable inference. Stochastic independence of error terms will be assessed using the Durbin-Watson Test, which detects first-order autocorrelation (Durbin & Watson, 1951). The test statistic ranges from 0 to 4, with values near 2 indicating absence of autocorrelation.

Multicollinearity will be diagnosed through a correlation matrix of the independent variables, where absolute correlation coefficients exceeding 0.7 will be subject to further examination (Tabachnick & Fidell, 2013). To test multicollinearity more extensively, Variance Inflation Factors (VIFs) will be calculated for each predictor, where VIF values exceeding 5 will be considered concerning and those exceeding 10 as a strong indicator of multicollinearity (Hair et al., 2021).

The regression model's stability and robustness will be examined through influence diagnostics. Specifically, studentized residuals will be plotted to identify potential outliers (observations with absolute values exceeding 2) and Cook's Distance will be calculated to detect influential observations (with values exceeding 4/N). The regression will then be re-estimated after removing the identified influential observations to assess their impact on model fit, specifically R^2. The coefficient of determination (R^2) measures the proportion of variance in the dependent variable that is explained by the independent variables collectively. However, as the number of independent variables increases, the R^2 value tends to increase regardless of actual explanatory power. Therefore, the adjusted R^2 is also employed, which penalizes the inclusion of additional variables that do not substantially improve model fit:

$$R^2{}_{adj} = 1 - \frac{(1 - R^2)(N - 1)}{N - k - 1} \tag{27}$$

Adjusted R^2 provides a more accurate assessment of the model's fit in MLRs, as it prevents artificial inflation of explanatory power through the addition of predictors. Individual t-tests will determine which variables significantly influence CAR. If there are no statistically significant relationships in any of the models or event windows, the variables will be assessed at the individual level. The MLR and model diagnostics will be conducted using the statistic software R.

5. DATA

This chapter presents the database, search criteria, transformation and selection process of the data used to conduct the empirical analysis. Several studies have stressed the importance of quality data, as data errors can significantly affect the results of the event study (Kothari & Warner, 2007). Careful screening and cleaning procedures of the data are therefore essential to accurately answer the research question. The theoretical foundation established through the preceding theory, methodology, and literature review provides essential context for understanding both the data requirements and the empirical investigation that follows.

5.1 DATABASE AND SEARCH CRITERIA

The data set was gathered solely from S&P Capital IQ Pro, which is a well-known provider of financial statement data for over 180,000 companies with data available as far back as 1985 (CIQ, 2025). It also provides M&A transactions and stock market data. The following criteria were met in the data collection process:

i. The transaction needs to be included in the S&P Capital IQ database.
ii. The transactions must be publicly announced between 01.01.2000 and 31.12.2024.
iii. The transaction must be classified as either a merger or acquisition.
iv. The transaction status must be classified as either 'Announced', 'Closed', or 'Canceled'.
    a. If the status of the transaction is 'Canceled', the date of the cancellation must be a minimum of 24 days after the date of the announcement.
v. The target and buyer must be headquartered within continental Europe, as defined by S&P Capital IQ.
vi. The target and buyer of the transaction must both be public.
vii. The buyer must acquire a majority share (>50%) of the target.

The decision to use the specific interval of 24 days is attributed to the highest amount of calendar days that can pass, while the stock market has undergone at least 10 full trading days. Taking Denmark as an example, if day zero is on the 20th of December, the 10th trading day can potentially occur on the 13th of January, which marks 24 calendar days. By applying the above criteria in S&P Capital IQ, the total extract came out to 1,905 transactions.

5.2 SELECTION

Before analyzing the extracted data set, a careful selection process was undertaken to ensure reliability and consistency with the selected criteria. This process is critical to accurately answer the research question and underlying hypotheses. The first part included excluding transactions with multiple buyers as well as transactions where either of the parties involved were headquartered outside of Europe. The latter is presumably an error for firms that have multiple headquarters. Next, the canceled transactions that did not meet the 24-day criteria were excluded. As the stock market data was also retrieved from S&P Capital IQ, using their Excel plugin, both parties needed to have an exchange ticker code. Subsequently, transactions where one or both of the involved parties lacked one were removed. Finally, as the estimation window stretches 252 days, and the event window 21 days, there needed to be sufficient data availability in terms of daily closing prices for each of the parties. These exclusions led to the final sample size of 792 transactions. A list of the transactions is presented in Appendix 7.

Table 4: Data selection process

Selection process	**N**	**%**
Raw extract	1905	100%
Exclusion of multiple buyers	89	5%
Exclusion of countries outside of Europe	234	12%
Exclusion of transactions canceled within 24 calendar days	62	3%
Exclusion of targets and buyers without exchange tickers	247	13%
Exclusion of companies with missing data, [-252; -11], [-10; +10]	481	25%
Final sample size	**792**	**42%**

Source: Author's own creation based on data from S&P Capital IQ.

To estimate the MM and CAPM, daily closing prices of stock indices and annual yields of 10-year government bonds were retrieved from S&P Capital IQ. The final dataset covers 35 countries, for which both rates and indices were collected, along with the European rate and index. Due to their size, Gibraltar, Liechtenstein and Monaco do not have a local stock index, which is why MSCI Europe is applied for these six transactions. For the risk-free rate, the same method was applied to Gibraltar, Iceland, Liechtenstein, Luxembourg, Malta and Monaco, substituting with the average rate on 10-year EU government bonds. A list of the respective indices can be found in Appendix 4.

5.3 TRANSFORMATION

To conduct the multivariate analysis, certain variables were transformed based on the final data set. Country and industry variables remain intact, defined by S&P Capital IQ. Financially distressed companies were assessed using Altman's Z-Score (Altman, 1968). This method examines the relationship between a company's assets, debt, earnings and market capitalization. By doing so, it measures on a scale from 0 to 3 whether a company is likely to declare bankruptcy within two years. A score of 0.0 - 1.8 indicates that the company is distressed, 1.8 - 3.0 indicates a grey zone of financial stability, and a score above 3 indicates that the company is financially safe. The Z-Score is estimated as (Altman, 1968):

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1X_5 \quad (28)$$

Where X_1 equals Working Capital ÷ Total Assets, X_2 equals Retained Earnings ÷ Total Assets, X_3 equals Earnings before interest and taxes (EBIT) ÷ Total Assets, X_4 equals Market Value of Equity ÷ Book Value of Total Debt and X_5 equals Sales ÷ Total Assets.

Due to a lack of data availability, a dummy variable called 'NA' (Not applicable) was imposed for transactions without the necessary financial data. Similarly, the relative size of the target to the bidder is classified into either small, medium or large, including a separate dummy variable 'NA' for cases with missing data. The relative size is simply the Market Value of Equity of the target relative to the bidder, where <10% equals small, 10%-50% equals medium, and >50% equals large.

The variables deal status, deal attitude, method of payment and sponsor backed remain intact. According to S&P Capital IQ, a transaction is considered sponsor backed if a PE or Venture Capital (VC) company is involved in the management and strategic direction of the company. Deal attitude consists of three dummy variables: Friendly, hostile or friendly to hostile. The latter encompasses deals that were initially friendly and turned hostile. For related industries, two dummy variables were created based on whether the buyer and target have the same industry. The same method was applied for cross-border transactions. Lastly, time of crisis was split into two dummy variables depending on whether the transaction was conducted during an official recession. As evident in the literature review, economic crises tend to originate from the U.S. The crisis variables are therefore determined by U.S. GDP, resulting in three periods: 2001, 2008-2009 and 2020 (Hamilton, 2025)[14]. While not including all countries in continental Europe, these periods are consistent with OECD-based recession indicators for the Euro Area (FRED, 2022). The dummy variables are presented in Table 5 and Appendix 6.

[14] Via FRED (Federal Reserve Economic Data)

5.4 PRESENTATION

Descriptive statistics of the final data set are presented in Table 5. The companies are categorized into eleven sectors with respect to the Global Industry Classification Standard (GICS), defined by S&P Capital IQ. The largest industries are Industrials (20%), Financials (19%) and Information Technology (12%), whereas the geographical location of the companies is primarily in the U.K. (25%) followed by France (11%), Sweden (10%), and Germany (7%). Sweden is surprising in this case, as it is only the eleventh largest economy in Europe, compared to U.K., Germany and France which are the top three (Espinosa, 2024). The yearly distribution of the transactions is presented in Appendix 5.

Table 5: Descriptive statistics - Industry & Country

	Target		Buyer		Total	
Dummy Variable	**N**	%	**N**	**%**	**N**	**%**
Austria	8	1%	8	1%	16	1%
Belgium	12	2%	15	2%	27	2%
Bulgaria	1	0%	1	0%	2	0%
Croatia	3	0%	3	0%	6	0%
Cyprus	5	1%	4	1%	9	1%
Czechia	4	1%	1	0%	5	0%
Denmark	29	4%	26	3%	55	3%
Finland	24	3%	27	3%	51	3%
France	77	10%	92	12%	169	11%
Germany	46	6%	57	7%	103	7%
Gibraltar	2	0%	1	0%	3	0%
Greece	24	3%	24	3%	48	3%
Greenland	1	0%	0	0%	1	0%
Hungary	3	0%	1	0%	4	0%
Iceland	1	0%	0	0%	1	0%
Ireland	11	1%	16	2%	27	2%
Italy	41	5%	46	6%	87	5%
Liechtenstein	0	0%	2	0%	2	0%
Lithuania	1	0%	0	0%	1	0%
Luxembourg	4	1%	7	1%	11	1%
Malta	3	0%	1	0%	4	0%
Monaco	2	0%	1	0%	3	0%
Netherlands	28	4%	21	3%	49	3%
Norway	38	5%	30	4%	68	4%
Poland (Reference)	53	7%	43	5%	96	6%
Portugal	10	1%	9	1%	19	1%
Serbia	2	0%	0	0%	2	0%
Slovakia	1	0%	0	0%	1	0%
Slovenia	4	1%	2	0%	6	0%
Spain	18	2%	34	4%	52	3%
Sweden	68	9%	89	11%	157	10%
Switzerland	32	4%	41	5%	73	5%
Türkiye	14	2%	9	1%	23	1%
Ukraine	2	0%	1	0%	3	0%
United Kingdom	220	28%	180	23%	400	25%
Total	**792**	**100%**	**792**	**100%**	**1584**	**100%**
Communication Services	43	5%	49	6%	92	6%
Consumer Discretionary	70	9%	59	7%	129	8%
Consumer Staples	41	5%	41	5%	82	5%
Energy	37	5%	36	5%	73	5%
Financials (Reference)	140	18%	168	21%	308	19%
Health Care	56	7%	53	7%	109	7%
Industrials	150	19%	161	20%	311	20%
Information Technology	111	14%	86	11%	197	12%
Materials	41	5%	40	5%	81	5%
Real Estate	83	10%	78	10%	161	10%
Utilities	20	3%	21	3%	41	3%
Total	**792**	**100%**	**792**	**100%**	**1584**	**100%**

Reference refers to the respective reference categories used in the multiple linear regression analysis.
Source: Author's own creation based on data from S&P Capital IQ.

6. EMPIRICAL RESULTS

The preceding chapters have presented the theory, literature and methodology of event studies. The goal of the empirical analysis is to address the research question and underlying hypotheses by applying the methods previously outlined. The first part of the analysis examines the initial hypothesis, whether M&A announcements significantly impact CAR. The second part tests relationships between explanatory variables and CAR through cross-sectional regressions.

Parametric tests are employed throughout the chapter to evaluate statistical significance. Specifically, the results are evaluated at 1%, 5% or 10% significance levels, reflecting confidence levels of 99%, 95% or 90%, consistent with a standard empirical approach. As the Market Model represents the most appropriate benchmark for event studies, its results receive greater emphasis and detail. In accordance with this approach, the combined CAR is presented exclusively using the Market Model. If the categorical variables lack significant results in the MLR, they will be tested individually using the Market Model.

6.1 HYPOTHESIS 1: UNIVARIATE ANALYSIS

The research question has led to the following hypothesis and sub questions:

$\boldsymbol{H_0}$: M&A announcements do not have a statistically significant impact on CAR.

$\boldsymbol{H_1}$: M&A announcements have a statistically significant impact on CAR.

- $\boldsymbol{S_{1.1}}$: *How does the choice of model for estimating CAR affect the result?*
- $\boldsymbol{S_{1.2}}$: *How does the length of the event window for estimating CAR affect the result?*

The literature consistently demonstrates significant abnormal returns for target firms, whereas the effects for acquirers show conflicting results. Consequently, the hypothesis is tested for both parties across all three models. The results are presented first for target companies followed by acquiring firms, maintaining consistency with the approach throughout the thesis.

6.1.1 The Market Model (MM)

6.1.1.1 Target

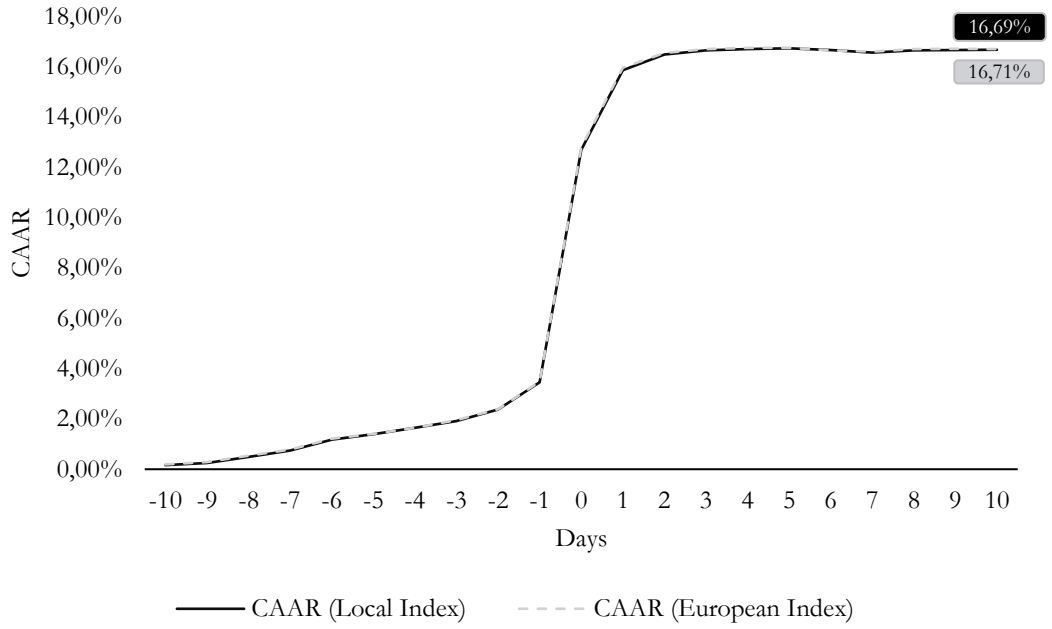
The AARs using local indices through the event window [-10; +10] are presented in Table 6. The results are positive and significant through [-8; +2], with the highest CAAR reached on day 5. The highest AAR is 9.25% on the announcement date, consistent with expectations that this moment represents the most accurate time for capturing the market's true response to the announcements. The significant AARs leading up to the announcement day strongly indicate information leakage, consistent with the semi-strong form of market efficiency. However, the significant AARs on days 1 and 2 appear to contradict this form of efficiency, as the market's reaction is not fully incorporated at the time of the announcement. This apparent contradiction may be attributed to the use of daily closing prices without considering the specific timing of announcements, potentially resulting in overlap for some transactions. Overall, these results align with the findings of the literature review, as target companies achieve a positive CAAR of 16.69% by day 10. When using a European index, the results remain highly similar (Appendix 8), with the primary difference being weak evidence of abnormal returns on day -10. A comparison of both approaches is presented in Figure 5 and Table 7.

Table 6: AAR - Market Model - Target (Local index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.16%	3.47%	0.12%	1.44	15.00%		0.16%
-9	0.09%	3.26%	0.12%	0.78	43.33%		0.25%
-8	0.23%	3.79%	0.13%	2.05	4.07%	**	0.49%
-7	0.26%	4.06%	0.14%	2.28	2.29%	**	0.74%
-6	0.43%	3.72%	0.13%	3.75	0.02%	***	1.17%
-5	0.22%	3.13%	0.11%	1.95	5.16%	*	1.39%
-4	0.26%	2.99%	0.11%	2.25	2.49%	**	1.65%
-3	0.27%	5.30%	0.19%	2.39	1.69%	**	1.92%
-2	0.45%	5.30%	0.19%	3.98	0.01%	***	2.37%
-1	1.08%	5.29%	0.19%	9.50	0.00%	***	3.45%
0	9.25%	17.52%	0.62%	81.46	0.00%	***	12.70%
1	3.17%	12.95%	0.46%	27.89	0.00%	***	15.87%
2	0.62%	7.30%	0.26%	5.45	0.00%	***	16.49%
3	0.17%	3.44%	0.12%	1.49	13.61%		16.66%
4	0.04%	2.47%	0.09%	0.39	69.41%		16.70%
5	0.04%	2.64%	0.09%	0.31	75.62%		16.74%
6	-0.07%	4.46%	0.16%	-0.61	54.43%		16.67%
7	-0.10%	4.68%	0.17%	-0.91	36.39%		16.57%
8	0.10%	4.47%	0.16%	0.86	39.05%		16.66%
9	0.01%	2.53%	0.09%	0.09	92.91%		16.67%
10	0.01%	2.09%	0.07%	0.12	90.44%		16.69%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Figure 5: CAAR - Market Model - Target



Source: Author's own creation.

Table 7: CAAR - Market Model - Target

Index	Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
Local	[-1; +1]	13.50%	21.37%	0.76%	68.61	0.00%	***
	[-3; +3]	15.01%	23.35%	0.83%	49.95	0.00%	***
	[-5; +5]	15.57%	23.76%	0.84%	41.32	0.00%	***
	[-10; +10]	16.69%	25.71%	0.91%	32.06	0.00%	***
European	[-1; +1]	13.58%	21.31%	0.76%	67.87	0.00%	***
	[-3; +3]	15.06%	23.31%	0.83%	49.28	0.00%	***
	[-5; +5]	15.54%	23.81%	0.85%	40.57	0.00%	***
	[-10; +10]	16.71%	25.73%	0.91%	31.56	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

The CAAR increases as the event window expands, consistent with previous event studies on European public-to-public transactions (Mateev & Andonov, 2018). The standard errors also increase as expected, since the additional observations naturally introduce more noise into the data set. Furthermore, the positive CAARs are significant at the 1% level across all event windows, using both a local and broader market index. The minimal discrepancy between indices indicates high similarity and correlation. This is expected, as many local indices derive from MSCI, where numerous constituents likely appear in the MSCI Europe Index as well. Based on these empirical results, H_0 is rejected for target companies across

all event windows using the Market Model, as the announcements have a statistically significant impact on CAR.

6.1.1.2 Buyer

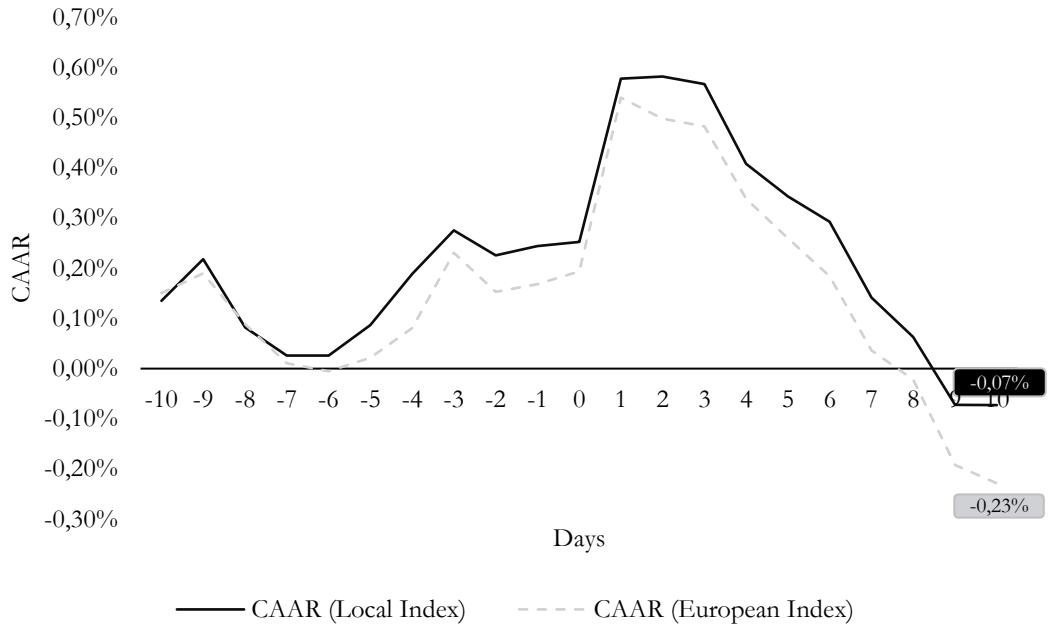
The AARs for acquiring firms present surprising results, as the market's reaction appears not fully incorporated on the announcement date (Table 8). The AAR is significant only on day 1, where it reaches 0.33%. This apparent delay in reactions could be explained by information asymmetry, as target firms typically attract greater attention on the announcement day. Furthermore, details regarding the buyer's strategy may emerge in follow-up statements, analyst reports, or press conferences on the day following the announcement. The highest AAR is reached on day 1 and subsequently declines steadily through day 10, by which the CAAR becomes negative (-0.07%). Using the European index produces similar results, with a more pronounced negative tendency toward the end of the event window (Appendix 10). A comparison of both approaches is presented in Figure 6 and Table 9.

Table 8: AAR - Market Model - Buyer (Local index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.13%	3.29%	0.12%	1.21	22.48%		0.13%
-9	0.08%	2.46%	0.09%	0.75	45.54%		0.22%
-8	-0.14%	2.42%	0.09%	-1.22	22.23%		0.08%
-7	-0.06%	2.28%	0.08%	-0.50	61.47%		0.03%
-6	0.00%	1.77%	0.06%	0.00	99.76%		0.03%
-5	0.06%	2.15%	0.08%	0.54	58.67%		0.09%
-4	0.10%	1.98%	0.07%	0.92	35.87%		0.19%
-3	0.09%	2.91%	0.10%	0.78	43.56%		0.28%
-2	-0.05%	1.97%	0.07%	-0.45	65.43%		0.23%
-1	0.02%	2.17%	0.08%	0.17	86.48%		0.24%
0	0.01%	4.25%	0.15%	0.07	94.25%		0.25%
1	0.33%	3.81%	0.14%	2.93	0.35%	***	0.58%
2	0.00%	2.53%	0.09%	0.04	96.88%		0.58%
3	-0.02%	2.57%	0.09%	-0.14	89.07%		0.57%
4	-0.16%	2.18%	0.08%	-1.43	15.44%		0.41%
5	-0.07%	2.45%	0.09%	-0.59	55.57%		0.34%
6	-0.05%	1.96%	0.07%	-0.45	65.07%		0.29%
7	-0.15%	2.09%	0.07%	-1.36	17.51%		0.14%
8	-0.08%	2.15%	0.08%	-0.71	47.95%		0.06%
9	-0.14%	1.93%	0.07%	-1.22	22.31%		-0.07%
10	0.00%	1.98%	0.07%	0.00	99.87%		-0.07%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Figure 6: CAAR - Market Model - Buyer



Source: Author's own creation.

Table 9: CAAR - Market Model - Buyer

Index	Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
Local	[-1; +1]	0.35%	6.01%	0.21%	1.83	6.76%	*
	[-3; +3]	0.38%	7.28%	0.26%	1.29	19.87%	
	[-5; +5]	0.32%	8.57%	0.30%	0.86	39.03%	
	[-10; +10]	-0.07%	10.70%	0.38%	-0.14	88.65%	
European	[-1; +1]	0.39%	6.15%	0.22%	1.99	4.68%	**
	[-3; +3]	0.40%	7.55%	0.27%	1.36	17.58%	
	[-5; +5]	0.26%	9.08%	0.32%	0.71	47.73%	
	[-10; +10]	-0.23%	11.22%	0.40%	-0.44	65.67%	

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

In contrast to targets, the CAAR for acquirers decreases as the event window expands when using local indices. For both approaches, the CAAR is highest during the [-1; +1] window and lowest in the [-10; +10] window, although without statistically significant results in most cases. There is, however, weak evidence of significant positive CAAR in the [-1; +1] window using local indices. Additionally, when applying a European index, considered a better approximation of the market portfolio, the evidence in the [-1; +1] window strengthens with a p-value of 4.68%. Based on these results, H_0 is rejected for acquirers in the [-1; +1] window at 10% and 5% significance levels using local indices and the European index, respectively. For the remaining event windows [-3; +3], [-5; +5], and [-10; +10], H_0 cannot be rejected, as the announcements do not demonstrate a statistically significant impact on CAR.

6.1.1.3 Combined

It should be noted that due to missing financial data on some firms' market value of equity, the combined CAR analysis is conducted on a reduced sample of 761 transactions (Appendix 13). While the exclusion of 31 transactions potentially affects the results, the combined CAR analysis is still included as 96% of the data set remains intact.

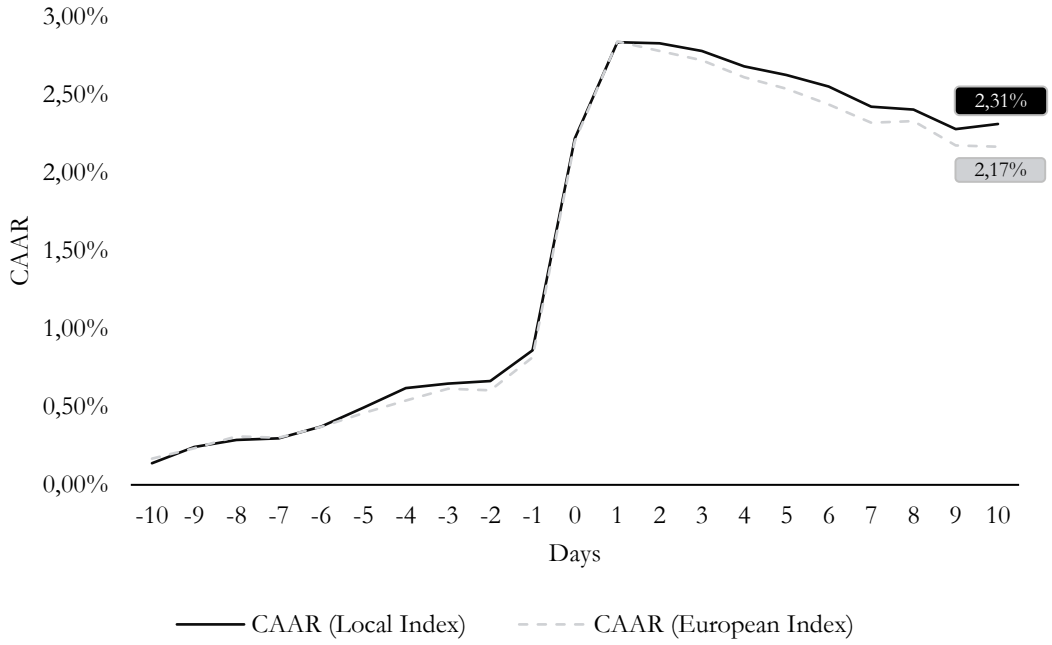
The combined AARs are positive and significant in 11 out of the 21 days, with highest AAR on the announcement date and day +1 (Table 10). These results align with the previous findings for targets and buyers, as most of the price reaction is incorporated at the announcement and on the following day. Consistent with prior results, signs of information leakage are evident prior to the announcement date, most significantly one day before the announcement. The results remain similar when applying the European index (Appendix 12). A comparison of both approaches is presented in Figure 7 and Table 11.

Table 10: AAR - Market Model - Combined (Local index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.14%	2.81%	0.10%	3.63	0.03%	***	0.14%
-9	0.10%	2.05%	0.07%	2.73	0.64%	***	0.24%
-8	0.04%	2.15%	0.08%	1.16	24.73%		0.29%
-7	0.01%	1.99%	0.07%	0.29	76.85%		0.30%
-6	0.08%	1.61%	0.06%	1.99	4.68%	**	0.37%
-5	0.12%	1.94%	0.07%	3.15	0.17%	***	0.49%
-4	0.13%	1.73%	0.06%	3.29	0.10%	***	0.62%
-3	0.03%	2.45%	0.09%	0.77	44.00%		0.65%
-2	0.02%	1.76%	0.06%	0.42	67.18%		0.66%
-1	0.20%	1.98%	0.07%	5.15	0.00%	***	0.86%
0	1.36%	4.56%	0.17%	35.60	0.00%	***	2.22%
1	0.62%	3.59%	0.13%	16.19	0.00%	***	2.84%
2	-0.01%	2.38%	0.09%	-0.17	86.82%		2.83%
3	-0.05%	2.05%	0.07%	-1.29	19.71%		2.78%
4	-0.10%	1.90%	0.07%	-2.63	0.88%	***	2.68%
5	-0.05%	2.04%	0.07%	-1.40	16.07%		2.63%
6	-0.07%	1.85%	0.07%	-1.94	5.32%		2.55%
7	-0.13%	1.95%	0.07%	-3.40	0.07%	***	2.42%
8	-0.02%	2.40%	0.09%	-0.48	62.82%		2.40%
9	-0.13%	1.69%	0.06%	-3.32	0.10%	***	2.28%
10	0.03%	1.81%	0.07%	0.87	38.64%		2.31%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Figure 7: CAAR - Market Model - Combined



Source: Author's own creation.

Table 11: CAAR - Market Model - Combined

Index	Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
Local	[-1; +1]	2.17%	5.80%	0.21%	32.88	0.00%	***
	[-3; +3]	2.16%	6.87%	0.25%	21.43	0.00%	***
	[-5; +5]	2.25%	7.99%	0.29%	17.82	0.00%	***
	[-10; +10]	2.31%	9.94%	0.36%	13.23	0.00%	***
European	[-1; +1]	2.23%	5.92%	0.21%	41.94	0.00%	***
	[-3; +3]	2.18%	7.09%	0.26%	26.80	0.00%	***
	[-5; +5]	2.17%	8.46%	0.31%	21.24	0.00%	***
	[-10; +10]	2.17%	10.38%	0.38%	15.37	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

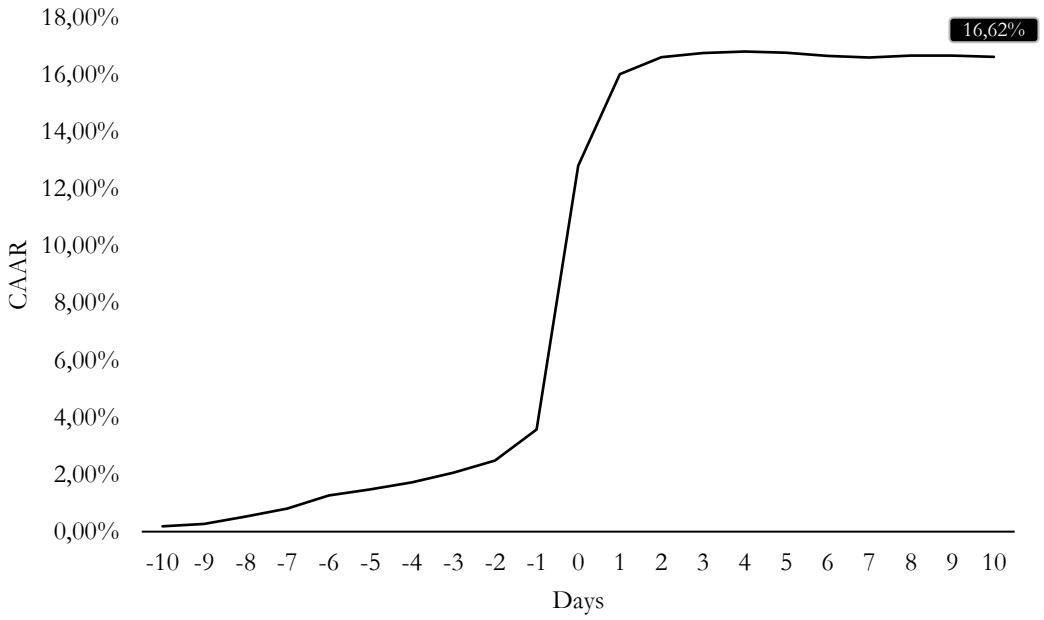
Consistent with a majority of the literature review, the CAAR is positive and significant in all event windows at the 1% level. Subsequently, H_0 is rejected, as the announcements demonstrate a statistically significant impact on the combined CAR across all event windows.

6.1.2 The Constant Mean Return Model (CMR)

6.1.2.1 Target

When employing the CMR, the results closely align with those obtained from the MM, with stronger evidence of abnormal returns on day -3, suggesting information leakage (Appendix 14). Consistent with Brown & Warner's (1985) findings, the model yields similar results as the variance of the abnormal returns remains largely unchanged. This is evident in the [-1; +1] and [-3; +3] event windows, where the standard deviation is slightly lower than when using the MM. As expected, CAAR is positive and statistically significant at the 1% level across all event windows, leading to the rejection of H_0 for targets when using the CMR.

Figure 8: CAAR - Constant Mean Return Model - Target



Source: Author's own creation.

Table 12: CAAR - Constant Mean Return Model - Target

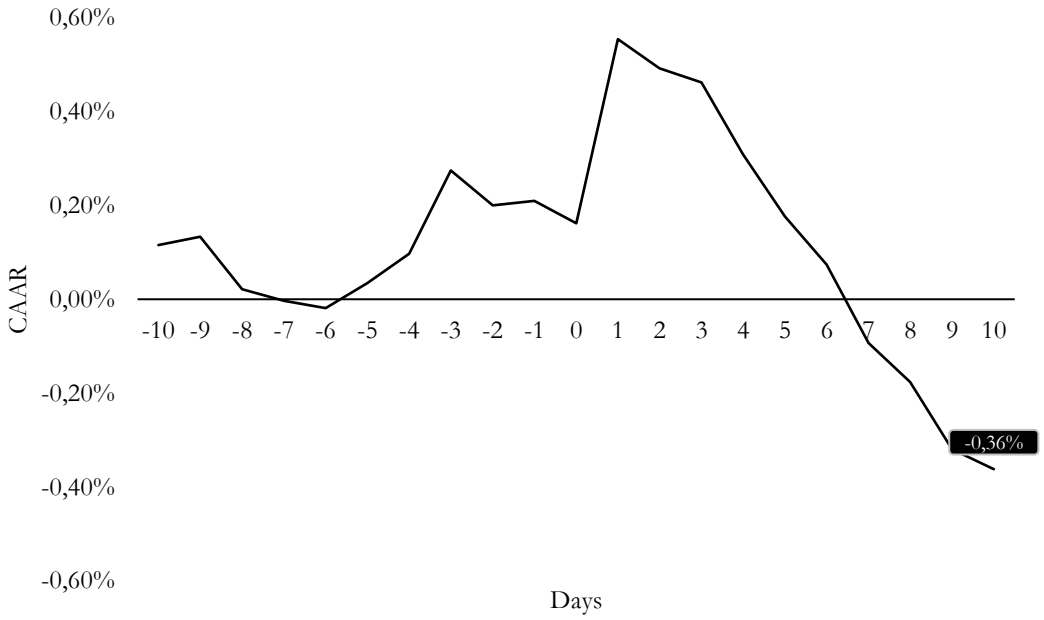
Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
[-1; +1]	13.53%	21.32%	0.76%	65.07	0.00%	***
[-3; +3]	15.02%	23.34%	0.83%	47.29	0.00%	***
[-5; +5]	15.50%	23.93%	0.85%	38.93	0.00%	***
[-10; +10]	16.62%	25.83%	0.92%	30.21	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

6.1.2.2 Buyer

Similar to the MM results, the market's reaction to the announcements is not fully incorporated until day +1, which also contradicts the semi-strong form of market efficiency (Appendix 16). The CAAR is positive yet not statistically significant in the event windows [-3; +3] and [-5; +5] (Table 13). There is, however, weak evidence of positive abnormal returns in the narrower event window [-1; +1], with a p-value of 7.43%. Interestingly, the CMR yields a CAAR of -0.36% in the [-10; +10] event window, compared to only -0.07% for the MM. This discrepancy can be attributed to the CMR's methodological approach of using historical averages as expected returns, without accounting for systematic market risk. Based on these findings, H_0 is rejected at the 10% significance level for the [-1; +1] window, while it cannot be rejected in the event windows [-3; +3], [-5; +5], and [-10; +10].

Figure 9: CAAR - Constant Mean Return Model - Buyer



Source: Author's own creation.

Table 13: CAAR - Constant Mean Return Model - Buyer

Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
[-1; +1]	0.35%	6.31%	0.22%	1.79	7.43%	*
[-3; +3]	0.36%	7.81%	0.28%	1.21	22.83%	
[-5; +5]	0.19%	9.49%	0.34%	0.51	60.76%	
[-10; +10]	-0.36%	12.16%	0.43%	-0.69	49.03%	

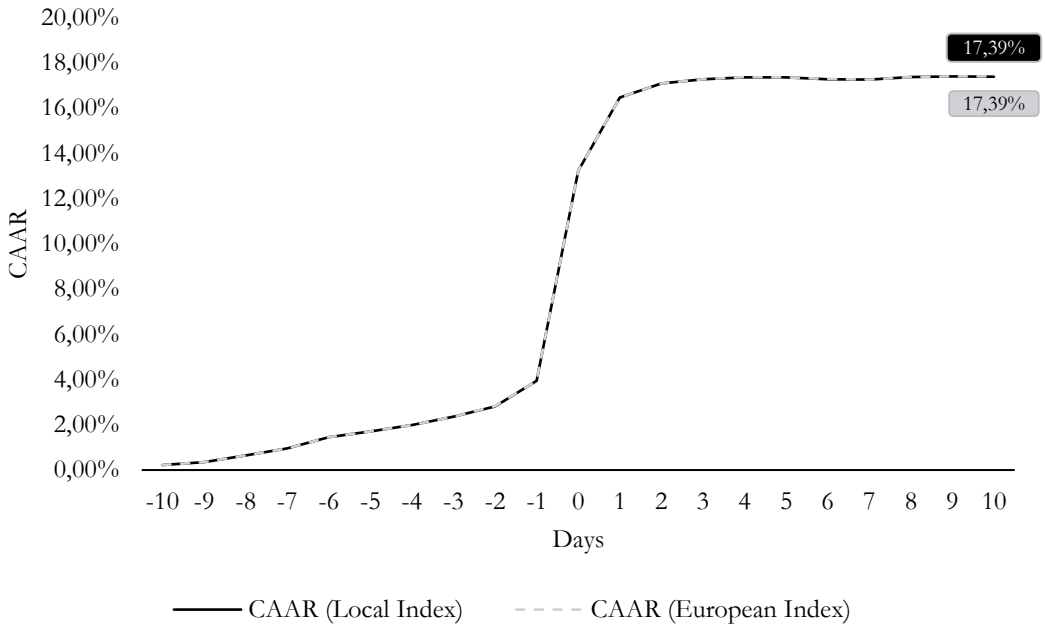
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

6.1.3 The Capital Asset Pricing Model (CAPM)

6.1.3.1 Target

Using CAPM, the results are consistent with the MM and CMR. There is also strong evidence of abnormal returns leading up to the announcement date, regardless of index (Appendix 18 and Appendix 19). This evidence is stronger in the CAPM for day -3 and -5. Additionally, the CAPM shows weak evidence of abnormal returns already on day -10. Examining the event windows, all exhibit statistical significance at the 1% level, with the highest CAAR observed in the [-10; +10] window (Table 14), consistent with the preceding models. As such, H_0 is rejected at the 1% significance level across all event windows for targets when using the CAPM.

Figure 10: CAAR - Capital Asset Pricing Model - Target



Source: Author's own creation.

Table 14: CAAR - Capital Asset Pricing Model - Target

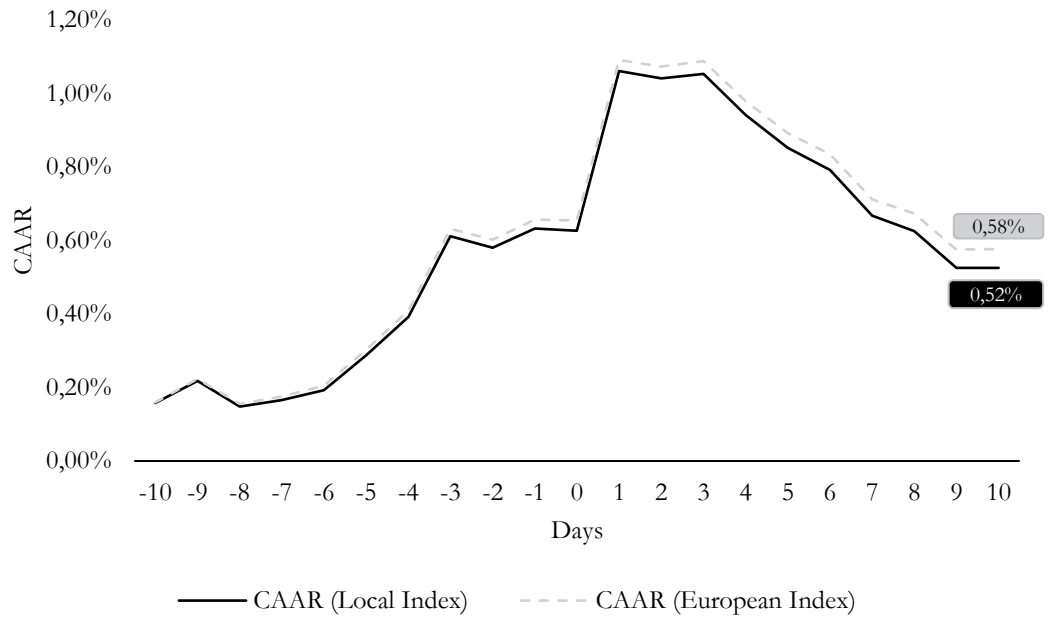
Index	Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
Local	[-1; +1]	13.64%	21.20%	0.75%	65.60	0.00%	***
	[-3; +3]	15.28%	23.08%	0.82%	48.10	0.00%	***
	[-5; +5]	15.90%	23.50%	0.84%	39.94	0.00%	***
	[-10; +10]	17.39%	24.90%	0.88%	31.61	0.00%	***
European	[-1; +1]	13.64%	21.20%	0.75%	65.60	0.00%	***
	[-3; +3]	15.28%	23.07%	0.82%	48.10	0.00%	***
	[-5; +5]	15.90%	23.51%	0.84%	39.95	0.00%	***
	[-10; +10]	17.39%	24.89%	0.88%	31.62	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

6.1.3.2 Buyer

The AARs derived from the CAPM show weak evidence of abnormal returns on day -3 and day +1 (Appendix 21 and Appendix 22). The model achieves a positive CAAR of 0.48% in the short event window [-1; +1] with a p-value of 1.55%, close to being significant at the 1% level (Table 15). Furthermore, it is the first model to demonstrate (weak) evidence of abnormal returns in the [-5; +5] window. While the model does not yield statistically significant results in the [-10; +10] window, the higher CAAR values of 0.58% and 0.52% compared to the other models can be attributed to the CAPM's inclusion of the risk-free rate and assumption of zero alpha, which (in this case) effectively lowers the expected returns. Based on these findings, H_0 is rejected for acquirers in the event windows [-1; +1] and [-3; +3] at the 5% significance level and in the [-5; +5] window at the 10% significance level. However, H_0 cannot be rejected in the [-10; +10] event window.

Figure 11: CAAR - Capital Asset Pricing Model - Buyer



Source: Author's own creation.

Table 15: CAAR - Capital Asset Pricing Model - Buyer

Index	Event window	CAAR	Std. Dev.	Std. Error	T-value	P-value	Significance level
Local	[-1; +1]	0.48%	6.26%	0.22%	2.43	1.55%	**
	[-3; +3]	0.66%	7.72%	0.27%	2.18	2.94%	**
	[-5; +5]	0.66%	9.38%	0.33%	1.74	8.26%	*
	[-10; +10]	0.52%	11.74%	0.42%	1.00	31.71%	
European	[-1; +1]	0.49%	6.25%	0.22%	2.46	1.40%	**
	[-3; +3]	0.68%	7.69%	0.27%	2.24	2.54%	**
	[-5; +5]	0.69%	9.34%	0.33%	1.81	7.07%	*
	[-10; +10]	0.58%	11.59%	0.41%	1.10	27.16%	

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

6.2.4 Discussion

This section reflects on the findings from the univariate analysis, which tested the first hypothesis: whether M&A announcements have a statistically significant impact on CAR. The results provide evidence in favor of the alternative hypothesis for both targets and buyers, while the evidence is strongest in the CAR of the target companies. Table 16 summarizes the results across event windows, models, and benchmarks.

Table 16: Overview of CAAR

	Event window			
Model	[-1; +1]	[-3; +3]	[-5; +5]	[-10; +10]
Market Model				
Target (Local)	13.50%***	15.01%***	15.57%***	16.69%***
Target (Europe)	13.58%***	15.06%***	15.54%***	16.71%***
Buyer (Local)	0.35%*	0.38%	0.32%	-0.07%
Buyer (Europe)	0.39%**	0.40%	0.26%	-0.23%
Combined (Local)	2.17%***	2.16%***	2.25%***	2.31%***
Combined (Europe)	2.23%***	2.18%***	2.17%***	2.17%***
Constant Mean Return Model				
Target	13.53%***	15.02%***	15.50%***	16.62%***
Buyer	0.35%*	0.36%	0.19%	-0.36%
Capital Asset Pricing Model				
Target (Local)	13.64%***	15.28%***	15.90%***	17.39%***
Target (Europe)	13.64%***	15.28%***	15.90%***	17.39%***
Buyer (Local)	0.48%**	0.66%**	0.66%*	0.52%
Buyer (Europe)	0.49%**	0.68%**	0.69%*	0.58%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

M&A announcements are associated with statistically significant positive abnormal returns for target firms across all event windows and models. The Market Model yields a CAAR of 16.69% over the [-10; +10] window, significant at the 1% level. These findings are consistent with existing literature and confirm that shareholders of target firms benefit from M&A announcements. The significant abnormal returns observed in the days leading up to the announcement suggest potential information leakage. This supports the semi-strong form of market efficiency, as investors with private information can still achieve above-market returns. In contrast, the statistically significant return post-announcement (particularly on day +1 and +2) may reflect delayed market reactions due to announcement timing and the use of daily closing prices rather than intraday data.

For acquiring firms, the results are more nuanced. For the MM, data indicate significant positive abnormal returns within the event window of [-1; +1], with significance observed at the 10% level (local index) and 5% level (European index). Additionally, the CAPM shows significant positive abnormal returns in the [-1; +1] and [-3; +3] event windows at the 5% level, with weak evidence of positive CAAR in the [-5; +5] event window at the 10% level. However, the results were not significant in any of the models using a [-10; +10] window. This is consistent with the mixed and often inconclusive findings in the literature.

The combined CAR analysis further supports the primary conclusions. Although acquirer returns are minimal, the aggregate effect is positive due to the strong reaction observed in target firm valuations. Additionally, the robustness of the results across local and European indices enhances the reliability of the findings. The minimal variation in CAARs between the two benchmarks suggests that market reactions are not excessively sensitive to the choice of market index.

However, it is important to recognize the study's limitations. The reliance on daily data constrains the ability to detect intraday dynamics or differentiate between anticipated and unanticipated announcements. Furthermore, the exclusion of 31 transactions in the combined analysis may slightly bias aggregate results if the omitted deals had systematically different characteristics.

In conclusion, the findings lead to a clear rejection of the null hypothesis H_0, which stated that M&A announcements do not have a statistically significant impact on CAR. The results strongly support the alternative hypothesis H_1, particularly for target firms, at the 1% significance level in all event windows. For acquirers, the evidence is weaker but still present in short-term windows ([-1; +1] and [-3; +3]) at the 5% significance level.

6.2 HYPOTHESIS 2: MULTIVARIATE ANALYSIS

The first null hypothesis has been rejected, as M&A announcements have been found to have a statistically significant impact on CAR. This leads to the second hypothesis, where the relationship between the observed CAR values and selected explanatory variables is tested through cross-sectional regression analysis:

$\boldsymbol{H_0}$: No statistically significant relationship can be demonstrated between the selected explanatory variables and CAR.

$\boldsymbol{H_1}$: A statistically significant relationship can be demonstrated between the selected explanatory variables and CAR.

As the thesis utilizes four event windows, three models, and two benchmarks, a total of 40 regressions were conducted. As it would be impractical to present all of them, the regressions are presented using only the European benchmark, as this is deemed a better representation of the true market portfolio. Additionally, while diagnostics have been conducted on all models in all event windows, the results will primarily be presented for the regression of target CAR using the Market Model in the [-10; +10] event window.

6.2.1 Model diagnostics

Robustness checks for the target are presented in Appendix 24, Appendix 25, and Appendix 26, as well as for buyers in Appendix 27, Appendix 28, and Appendix 29. Consistent with the approach described in Chapter Four, the assumptions for the multiple linear regression are presented in the following sections.

6.2.1.1 Linearity

The regressions are first examined for a linear relationship between the dependent variable and independent variables. The red reference 45° line in Appendix 30 is an indicator of perfect linearity between the observed and predicted values. The model achieves an R^2 of 0.21, indicating a modest linear relationship. To further test this, the residuals are plotted against the predicted values in Appendix 31. To confirm linearity, the residuals need to be randomly distributed around zero. The residuals seem to be evenly distributed on each side of the blue reference line, indicating no systematic pattern. Finally, the Ramsey RESET Test shows p-values between 3.13% and 51.17% in the [-10; +10] window depending on the model. Overall, the visual diagnostics suggest no clear violations of the linearity assumption, as

residuals appear randomly and symmetrically dispersed around zero. Moreover, the Ramsey RESET Test fails to reject the null hypothesis of correct model specification in most full event windows (5% significance level). While an R^2 of 0.21 indicates that only a modest proportion of the variance is explained by the model, this does not on its own invalidate the assumption of linearity.

6.2.1.2 Zero conditional mean

The zero conditional mean assumption implies that residuals have an expected value of zero given the independent variables. The assumption appears to be reasonably satisfied, supported by the residuals versus predicted plot (Appendix 31) and the results of the Ramsey RESET Test.

6.2.1.3 Normality

A Q-Q plot of the residuals (Appendix 32) shows that most observations lie close to the reference line, though there are obvious signs of a right skew and moderate kurtosis, particularly in the upper quantiles. The histogram (Appendix 33) supports this, displaying a roughly normal shape with a noticeable right skew. This is consistent with the model's skewness of 1.20 and kurtosis of 4.45. Formal normality tests (Jarque-Bera and Anderson-Darling) strongly reject the null hypothesis of normality at the 1% significance level. However, such tests are known to be overly sensitive in large samples (N=792) (Kim, 2013; Mishra et al., 2019). Given that the skewness and kurtosis fall within the acceptable thresholds outlined by Kline (2016), the residuals are considered sufficiently normal for reliable OLS inference.

6.2.1.4 Homoscedasticity

Visual inspection of the residuals by predicted plot (Appendix 31) suggests that the variance of the residuals remains relatively constant across the range of predicted values, with no clear funneling or pattern. To formally assess this assumption, the Breusch-Pagan Test yields p-values ranging from 0.00% to 41.42% across different models and event windows, while the White Test produces p-values between 0.00% and 28.00%. These results indicate that heteroscedasticity may be present in some models. To address this, heteroscedasticity-consistent standard errors (HC3 variant) are applied for all models and event windows, in line with the recommendations of MacKinnon and White (1985).

6.2.1.5 Independence

To test for stochastic independence of the error terms, the Durbin-Watson Test yields values ranging from 1.80 to 2.08 across all models and windows. As these values are close to 2, the null hypothesis of

no first-order autocorrelation is not rejected, indicating that the assumption of independence is reasonably met.

6.2.1.6 No multicollinearity

A correlation matrix of the independent variables is presented in Appendix 34. The highest observed correlation coefficient is 0.36, suggesting no problematic pairwise multicollinearity. Additionally, Variance Inflation Factor (VIF) values remain well below the critical threshold of 5 across all models and event windows (Hair et al., 2021). An overview of the dummy variables and their respective VIF values can be found in Appendix 35. These findings indicate that multicollinearity is not a concern, which is why the assumption is considered satisfied.

6.2.1.7 Robustness

To further test the stability and robustness of the model, outliers and influential observations were examined. A studentized residuals plot is presented in Appendix 36. Using a critical value threshold of ± 2, the plot identifies 39 outliers (4.9% of the total 792 observations). This proportion is consistent with what is expected under a normal distribution, supporting the residuals' approximate normality. While outliers are present, their existence does not automatically imply undue influence on the regression estimates. To assess influence, a Cook's Distance plot (Appendix 37) was analyzed. Based on a 4/N threshold, 46 influential observations were identified. When the model is estimated excluding these observations, the R^2 increases modestly from 0.21 to 0.25, implying a slightly better model fit. However, excluding the observations solely on statistical grounds can have consequences, as it may eliminate valid data points that reflect real-world variation (Sorokina et al., 2013). Therefore, in line with a conservative econometric approach and to preserve the integrity of the data set, all 792 observations are retained in the final model estimation.

6.2.2 MLR - Target

The results of the MLR for target companies are presented in Table 17. The intercept coefficients show consistently significant values across all models and event windows [+9.0%; +15.6%]. The adjusted R^2 values range from 0.15 to 0.17, indicating that the regressions have successfully captured meaningful relationships. The categorical variables will be analyzed individually, with less emphasis on countries and industries. Variables lacking significant results in the MLR are tested individually using the MM in a [-10; +10] event window, as the univariate analysis revealed significant results across all event windows.

Table 17: MLR - Target

			Target											
Response Variable			**MM**				**CMR**				**CAPM**			
Event window			[-10; +10]	[-5; +5]	[-3; +3]	[-1; +1]	[-10; +10]	[-5; +5]	[-3; +3]	[-1; +1]	[-10; +10]	[-5; +5]	[-3; +3]	[-1; +1]
Categorical Variable	Dummy Variable	N												
Intercept			0.101**	0.122***	0.140***	0.091***	0.104**	0.123***	0.142***	0.090***	0.146***	0.145***	0.156***	0.096***
Country	Austria	8	0.044	0.068*	0.050	0.031	0.054	0.068*	0.049	0.035	0.044	0.063*	0.046	0.034
	Belgium	12	0.155*	0.191***	0.171**	0.131**	0.144*	0.190**	0.165**	0.128**	0.138*	0.187***	0.163**	0.127**
	Bulgaria	1	-0.074	0.000	0.031	0.018	-0.077	-0.001	0.025	0.013	-0.084	-0.005	0.022	0.012
	Croatia	3	-0.014	0.021	0.066	0.007	-0.002	0.025	0.076	0.017	0.005	0.029	0.078	0.018
	Cyprus	5	0.077	0.073	0.049	0.047	0.078	0.070	0.049	0.049	0.099	0.081	0.056	0.052
	Czechia	4	-0.094	-0.041	-0.036	-0.014	-0.095	-0.040	-0.034	-0.009	-0.086	-0.036	-0.032	-0.008
	Denmark	29	0.238***	0.200***	0.174***	0.177***	0.241***	0.198***	0.176***	0.176***	0.229***	0.191***	0.172***	0.174***
	Finland	24	0.221***	0.235***	0.216***	0.232***	0.211***	0.237***	0.217***	0.229***	0.189***	0.226***	0.210***	0.226***
	France	77	0.070*	0.077**	0.057*	0.033	0.069*	0.077**	0.058*	0.032	0.059*	0.072**	0.055*	0.031
	Germany	46	0.137***	0.129***	0.104**	0.071*	0.138***	0.133***	0.105**	0.071*	0.119**	0.124***	0.098**	0.069*
	Gibraltar	2	0.007	-0.044	-0.051	-0.041	0.002	-0.026	-0.049	-0.043	-0.012	-0.033	-0.054	-0.045
	Greece	24	0.090*	0.064	0.034	0.039	0.088	0.066	0.032	0.037	0.052	0.047	0.020	0.032
	Greenland	1	0.063	0.103**	0.072*	0.036	0.068	0.101**	0.072*	0.036	0.070	0.103**	0.072*	0.036
	Hungary	3	-0.049	-0.015	-0.035	-0.053	-0.070	-0.022	-0.032	-0.058	-0.069	-0.021	-0.031	-0.058
	Iceland	1	0.097*	0.194***	0.102**	0.205***	0.092*	0.192***	0.100**	0.202***	0.079	0.185***	0.096**	0.200***
	Ireland	11	0.146*	0.166**	0.141*	0.069	0.142*	0.165**	0.144**	0.075	0.121*	0.154**	0.137**	0.072
	Italy	41	0.112***	0.117***	0.086**	0.083***	0.107**	0.114***	0.085**	0.084***	0.090**	0.106***	0.079**	0.081**
	Lithuania	1	-0.053	-0.100**	-0.104**	-0.035	-0.039	-0.075	-0.088*	-0.020	-0.044	-0.078	-0.090*	-0.020
	Luxembourg	4	0.325***	0.328***	0.319***	0.329***	0.318***	0.317***	0.314***	0.328***	0.269***	0.291***	0.298***	0.321***
	Malta	3	0.016	0.015	-0.019	-0.053	0.011	0.017	-0.020	-0.052	-0.019	0.002	-0.030	-0.057
	Monaco	2	0.345***	0.211**	0.122***	0.115**	0.422**	0.237**	0.128***	0.128***	0.434**	0.244**	0.132***	0.129***
	Netherlands	28	0.125***	0.151***	0.123***	0.108***	0.117***	0.150***	0.123***	0.108***	0.094**	0.138***	0.115***	0.105***
	Norway	38	0.112**	0.083*	0.057	0.032	0.102**	0.076*	0.053	0.028	0.073	0.061	0.043	0.024
	Portugal	10	0.097	0.089	0.067	0.077	0.108	0.096	0.070	0.077	0.097	0.091	0.066	0.076
	Serbia	2	-0.129	-0.044	-0.045	-0.042	-0.098	-0.036	-0.031	-0.036	-0.141***	-0.058	-0.045	-0.042
	Slovakia	1	0.093**	0.064*	-0.075**	-0.055*	0.088**	0.056*	-0.080**	-0.057*	0.135***	0.081**	-0.064**	-0.050*
	Slovenia	4	0.024	0.058	0.035	-0.008	0.022	0.053	0.032	-0.011	0.049	0.067	0.041	-0.007
	Spain	18	0.119**	0.097**	0.091**	0.080**	0.121**	0.092**	0.087**	0.077**	0.098**	0.080**	0.079**	0.073**
	Sweden	68	0.193***	0.195***	0.172***	0.174***	0.192***	0.195***	0.172***	0.173***	0.157***	0.177***	0.161***	0.168***
	Switzerland	32	0.096*	0.069	0.052	0.070	0.095*	0.073	0.052	0.071	0.069	0.059	0.044	0.067
	Türkiye	14	0.019	0.009	-0.074	-0.092**	0.030	0.009	-0.073	-0.092**	0.027	0.008	-0.074	-0.092**
	Ukraine	2	-0.034	0.030	-0.007	-0.052	-0.027	0.029	0.002	-0.054	-0.084	0.000	-0.016	-0.062
	United Kingdom	220	0.165***	0.161***	0.137***	0.145***	0.162***	0.161***	0.136***	0.144***	0.137***	0.149***	0.128***	0.141***
Industry	Communication Services	43	-0.026	-0.042	-0.045	-0.057	-0.030	-0.046	-0.043	-0.056	-0.029	-0.046	-0.043	-0.056
	Consumer Discretionary	70	0.082*	0.041	0.038	0.024	0.083**	0.039	0.037	0.025	0.076*	0.036	0.035	0.024
	Consumer Staples	41	0.000	-0.033	-0.044	-0.029	0.004	-0.034	-0.041	-0.026	0.003	-0.034	-0.042	-0.026
	Energy	37	0.003	-0.034	-0.033	-0.010	0.000	-0.035	-0.033	-0.011	-0.012	-0.042	-0.037	-0.012
	Health Care	56	0.131***	0.090**	0.081**	0.069*	0.131***	0.086**	0.080**	0.070*	0.112***	0.076**	0.073*	0.067*
	Industrials	150	0.051	0.033	0.027	0.023	0.051	0.033	0.028	0.024	0.049	0.032	0.027	0.024
	Information Technology	111	0.084**	0.066**	0.063**	0.065**	0.087**	0.064**	0.063**	0.067**	0.078**	0.060**	0.060**	0.065**
	Materials	41	0.095*	0.022	0.024	-0.001	0.089*	0.015	0.020	-0.002	0.080*	0.010	0.017	-0.003
	Real Estate	83	-0.010	-0.012	-0.016	-0.036	-0.010	-0.016	-0.015	-0.034	-0.013	-0.018	-0.016	-0.034
	Utilities	20	-0.001	-0.023	-0.024	-0.039	0.001	-0.026	-0.023	-0.036	-0.016	-0.035	-0.029	-0.038
Distressed	Distressed	229	0.013	0.003	0.008	0.031	0.015	0.005	0.007	0.029	0.003	-0.001	0.003	0.027
	Grey zone	149	-0.002	0.004	0.003	0.020	-0.004	0.003	0.002	0.017	-0.008	0.001	0.000	0.017
	NA	179	-0.030	-0.039	-0.027	0.009	-0.029	-0.035	-0.024	0.011	-0.040	-0.042	-0.028	0.010
Relative size	Large	216	-0.157***	-0.154***	-0.159***	-0.115***	-0.155***	-0.156***	-0.162***	-0.115***	-0.146***	-0.151***	-0.159***	-0.114***
	Medium	284	-0.091***	-0.112***	-0.115***	-0.085***	-0.090***	-0.113***	-0.116***	-0.085***	-0.086***	-0.111***	-0.115***	-0.084***
	NA	31	-0.022	-0.012	-0.009	-0.017	-0.029	-0.021	-0.016	-0.019	-0.007	-0.009	-0.008	-0.016
Deal status	Announced	15	0.097	0.089	0.070	0.071	0.093	0.086	0.069	0.068	0.102	0.091	0.072	0.069
	Terminated/Withdrawn	136	-0.011	0.000	-0.003	0.010	-0.015	-0.004	-0.005	0.008	-0.020	-0.006	-0.006	0.007
Deal attitude	Friendly to hostile	12	-0.092*	-0.065*	-0.059*	-0.057*	-0.104*	-0.072*	-0.055	-0.063**	-0.093*	-0.067	-0.051	-0.061**
	Hostile	26	0.022	0.026	0.033	0.009	0.033	0.039	0.042	0.012	0.037	0.041	0.043	0.013
Consideration	Hybrid	152	-0.013	0.008	0.013	0.013	-0.008	0.014	0.019	0.016	-0.005	0.016	0.020	0.016
	Stock	237	-0.070***	-0.058***	-0.056***	-0.054***	-0.072***	-0.060***	-0.055***	-0.054***	-0.086***	-0.067***	-0.060***	-0.056***
Sponsor backed	Sponsor backed	522	-0.020	-0.037**	-0.037**	-0.037**	-0.023	-0.039**	-0.039**	-0.037**	-0.021	-0.038**	-0.038**	-0.036**
Related industry	Related industry	618	0.018	0.022	0.026	0.028	0.020	0.024	0.025	0.027	0.012	0.020	0.022	0.026
Cross-border	Cross-border	275	0.006	0.012	0.008	0.008	0.006	0.012	0.009	0.009	0.009	0.014	0.010	0.009
Crisis	Crisis	50	-0.005	-0.027	-0.047	-0.037	-0.020	-0.034	-0.055	-0.042	-0.025	-0.037	-0.057	-0.042
N			792	792	792	792	792	792	792	792	792	792	792	792
R-Squared			0.212	0.227	0.229	0.222	0.211	0.229	0.231	0.222	0.222	0.234	0.234	0.222
Adj. R-Squared			0.149	0.165	0.167	0.159	0.148	0.167	0.169	0.159	0.159	0.173	0.172	0.160

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Examining the MM in the [-10; +10] window (excluding dummy variables with N<10), the countries with the highest significant coefficients are Denmark (23.8%), Finland (22.1%), and Sweden (19.3%). These results align with Yilmaz & Tanyeri's (2016) global study, where Luxembourg, Sweden, and Finland exhibited the highest CAARs. The findings for Nordic countries also correspond with Rose et al. (2017), who reported a CAAR of 23% for targets in these regions.

Among industries, the highest significant coefficients appear in Health Care (13.1%), Materials (9.5%), Information Technology (8.4%), and Consumer Discretionary (8.2%). These results are consistent with Alexandridis, Mavrovitis & Travlos (2012), who reported similar patterns when analyzing acquisition premiums.

Although not significant in any model or event window, the coefficients for distressed targets are mostly positive [-0.1%; +3.1%] compared to safe targets. These findings appear inconsistent with Smith & Kim (1994), who found that high-free cash flow targets generally outperformed low-free cash flow companies. Their theory is logical, as financially unstable targets should have lower bargaining power, resulting in lower takeover premiums. However, Goergen & Renneboog (2004) similarly did not find a significant correlation between financial distress and abnormal returns. As such, the categorical variable is tested individually.

Table 18: Financial distress - Market Model - Target

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Distressed	[-10; +10]	228	17.24%	1.85%	9.34	0.00%	***
Grey zone	[-10; +10]	149	17.82%	2.10%	8.50	0.00%	***
Safe	[-10; +10]	236	19.93%	1.59%	12.57	0.00%	***
NA	[-10; +10]	179	10.85%	1.79%	6.06	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

When tested individually, the results are significant for all dummy variables at the 1% level, with financially safe targets achieving the highest CAAR of 19.93%. This confirms findings from the literature, that financially stable companies have stronger bargaining positions, leading to higher takeover premiums (Meier & Servaes, 2014). The results suggest that acquirers must pay a greater premium to convince shareholders of financially healthy firms to sell, while distressed targets have fewer alternatives and less leverage in negotiations.

The next chosen variable is the relative size of the target to the buyer. The coefficients for large targets [-16.2%; -11.4%] and medium sized targets [-11.6%; -8.4%] are all significant at the 1% level. This clearly

indicates that the larger the target is compared to the buyer, the more negatively the market reacts to the announcement. These results align with previous research (Martynova & Renneboog, 2011; Mateev & Andonov, 2018) and likely reflect investor skepticism about the acquiring firm's ability to successfully integrate larger targets and realize projected synergies.

Looking at deal status, the literature strongly suggests that canceled transactions yield lower CAARs. The positive coefficients for announced transactions [+6.8% to +10.2%] represent only 15 recent deals from 2024 and therefore may not be representative of the entire sample. The coefficients [-2.0%; +1.0%] for Terminated/Withdrawn deals are not significant which is why the variable is tested individually.

Table 19: Deal status - Market Model - Target

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Announced	[-10; +10]	15	24.69%	6.95%	3.55	0.32%	***
Terminated/Withdrawn	[-10; +10]	136	14.16%	1.84%	7.70	0.00%	***
Completed	[-10; +10]	641	17.06%	1.05%	16.30	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Completed transactions yield a CAAR of 17.06% compared to 14.16% for canceled transactions, both significant at the 1% level. This is consistent with Dodd & Ruback's (1977) pioneer study, where targets in successful mergers earn higher abnormal returns than in unsuccessful mergers surrounding the announcement date.

For deal attitude, the coefficients for friendly to hostile [-10.4%; -5.1%] are negative and mostly significant at the 10% level. Additionally, coefficients for hostile deals [+0.9%; +4.3%] are positive, although not significant. The variable is tested individually and presented in Table 20.

Table 20: Deal attitude - Market Model - Target

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Friendly to Hostile	[-10; +10]	12	2.82%	3.68%	0.76	46.06%	
Hostile	[-10; +10]	26	17.37%	3.57%	4.86	0.01%	***
Friendly	[-10; +10]	754	16.90%	0.95%	17.81	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

When tested individually, both hostile and friendly deals show significant CAARs at the 1% level, with hostile deals (17.37%) slightly outperforming friendly deals (16.90%). These results are consistent with the consensus in the literature (Lang et al., 1989; Franks et al., 1991; Goergen & Renneboog, 2004; Martynova & Renneboog, 2011). Hostile takeovers typically involve higher premiums to overcome target

management resistance, leading to greater short-term returns for target shareholders. Additionally, the underperformance of deals that shift from friendly to hostile may reflect market uncertainty about ultimate deal completion or concerns about integration challenges.

The method of payment strongly favors cash takeovers, as the coefficients for stock-financed deals are negative [-8.6%; -5.4%] and significant at the 1% level across all models and event windows. This aligns with previous findings that cash offers typically result in more positive market reactions. As Travlos (1987) noted, the signaling effect in cash takeovers may indicate bidder confidence in the target's value and the combined entity's prospects. Additionally, cash offers provide certainty of value to target shareholders, while stock offers introduce risks related to the acquirer's future performance and potential overvaluation of the acquirer's shares.

The coefficients for sponsor backed deals are negative [-3.9%; -2.0%] and significant at the 5% level for most models and event windows. These results are consistent with previous findings (Arik and Kutan, 2015; Bargeron et al., 2008), as the market seemingly reacts more positive to non-sponsored acquisitions. This may be explained by investor skepticism towards financial buyers, due to a lack of operational integration potential.

For industry-related deals, the coefficients are positive [+1.2%; +2.8%] yet not statistically significant. The variable is tested individually and presented in Table 21.

Table 21: Related industry - Market Model - Target

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Related industry	[-10; +10]	618	15.84%	1.02%	15.55	0.00%	***
Non-related industry	[-10; +10]	174	19.77%	2.04%	9.68	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Individual testing reveals that non-related industry transactions yield a significantly higher CAAR for targets (19.77%) compared to related industry deals (15.84%), both significant at the 1% level. These results are consistent with several previous studies showing that diversifying acquisitions yield higher CAARs for targets than horizontal mergers (Martynova & Renneboog, 2011; Wansley et al., 1983; Maquieira et al., 1998). This pattern may reflect buyers offering higher premiums in non-related industries to persuade target shareholders to sell, as well as potential bidding competition when targets have strategic value to acquirers from multiple industries.

The coefficients [+0.6%; 1.4%] for cross-border are positive yet not significant which is why the variable is also tested at the individual level.

Table 22: Cross-border - Market Model - Target

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Cross-border	[-10; +10]	275	19.78%	1.42%	13.96	0.00%	***
Domestic	[-10; +10]	517	15.07%	1.18%	12.82	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

When tested individually, cross-border transactions show a significantly higher CAAR of 19.78% for targets compared to 15.07% for domestic deals, both significant at the 1% level. While the literature presents conflicting results, these findings support the view that cross-border deals result in higher premiums and consequently higher short-term abnormal returns for target companies. Mateev & Andonov (2018) attributed this pattern to variations in investor protection quality between countries, while others suggest that foreign acquirers may need to pay higher premiums to overcome information asymmetries and regulatory hurdles.

Although it is not significant in any model or event window, the coefficients for targets acquired during economic crises are consistently negative [-5.7%; -0.5%]. As the results are particularly mixed, the variable is tested individually in all event windows.

Table 23: Time of crisis - Market Model - Target

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Crisis	[-1; +1]	50	11.21%	3.34%	3.36	0.15%	***
No crisis	[-1; +1]	742	13.74%	0.78%	17.69	0.00%	***
Crisis	[-3; +3]	50	11.57%	4.45%	2.60	1.23%	**
No crisis	[-3; +3]	742	15.30%	0.83%	18.38	0.00%	***
Crisis	[-5; +5]	50	13.98%	4.73%	2.95	0.48%	***
No crisis	[-5; +5]	742	15.65%	0.85%	18.50	0.00%	***
Crisis	[-10; +10]	50	17.50%	5.85%	2.99	0.43%	***
No crisis	[-10; +10]	742	16.65%	0.89%	18.62	0.00%	***

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

When tested individually across all event windows, interesting patterns emerge. In shorter event windows, non-crisis acquisitions yield higher CAARs (13.74% to 15.65%) compared to crisis-period deals (11.21% to 13.98%). However, this pattern reverses in the [-10; +10] window, where crisis-period targets show a slightly higher CAAR (17.50% versus 16.65%). These findings generally align with theoretical

expectations that during economic downturns, targets often sell at lower premiums due to uncertainty about their financial stability and future performance. The reversal in the longer event window may reflect a slower market reaction or greater information processing time required during crisis periods.

Overall, the findings are consistent with the literature review in Chapter Three while providing new insights into European public-to-public transactions in recent years. The analysis confirms many established patterns regarding target returns, though some variables show distinctive effects in the European context. It is, however, evident that all the variables have a statistically significant impact on CAR, which is why H_0 is rejected for target companies.

6.2.3 MLR - Buyer

The results of the MLR for the acquiring companies are presented below in Table 24. The intercept coefficients [-3.5%; -0.9%] are significant only in the [-3; +3] and [-5; +5] windows. The adjusted R^2 values span from -0.01 to 0.08, indicating lower explanatory power compared to the target-side MLR. However, as the goal of the MLR is not to predict CAR based on the categorical variables, the model still provides valuable insights relevant to the second hypothesis. The approach of examining the results is equal to the target-side MLR. If the categorical variables lack significant results, they will be tested individually using the Market Model in the [-1; +1] and [-3; +3] event windows, as these yielded the most reliable results in the univariate analysis.

Table 24: MLR - Buyer

			Buyer											
Response Variable			**MM**				**CMR**				**CAPM**			
Event windows			[-10; +10]	[-5; +5]	[-3; +3]	[-1; +1]	[-10; +10]	[-5; +5]	[-3; +3]	[-1; +1]	[-10; +10]	[-5; +5]	[-3; +3]	[-1; +1]
Categorical Variable	Dummy Variable	N												
Intercept			-0.022	-0.035*	-0.035**	-0.016	-0.027	-0.033*	-0.032**	-0.017	-0.009	-0.024	-0.026*	-0.014
Country	Austria	8	0.029	0.017	0.020	0.023	0.051*	0.036	0.030	0.026	0.037	0.028	0.025	0.024
	Belgium	15	0.057*	0.044**	0.042**	0.016	0.061*	0.053**	0.046**	0.018	0.043	0.044**	0.040**	0.015
	Bulgaria	1	-0.010	-0.021	-0.017	-0.011	0.000	-0.010	-0.013	-0.007	0.002	-0.009	-0.013	-0.007
	Croatia	3	0.074	0.064***	0.045***	0.053***	0.082*	0.066**	0.055***	0.056***	0.064	0.057**	0.049***	0.054***
	Cyprus	4	-0.050	0.000	0.006	0.005	-0.037	0.005	0.008	0.006	-0.034	0.007	0.009	0.006
	Czechia	1	0.121***	0.144***	0.157***	0.054***	0.118***	0.158***	0.167***	0.047***	0.186***	0.194***	0.190***	0.057***
	Denmark	26	0.065**	0.075***	0.064***	0.037**	0.071**	0.078***	0.066***	0.037**	0.043	0.063**	0.057***	0.033**
	Finland	27	0.048*	0.056***	0.051***	0.052***	0.036	0.060***	0.054***	0.051***	0.021	0.052**	0.049***	0.048***
	France	92	0.042*	0.045***	0.039***	0.028**	0.047**	0.050***	0.043***	0.029***	0.030	0.041**	0.037***	0.026**
	Germany	57	0.029	0.026	0.020	0.013	0.040	0.031*	0.018	0.011	0.040*	0.031*	0.018	0.011
	Gibraltar	1	0.121***	0.106***	0.090***	0.104***	0.126***	0.132***	0.099***	0.106***	0.113***	0.125***	0.095***	0.105***
	Greece	24	0.035	0.069***	0.065***	0.059***	0.039	0.075***	0.066***	0.060***	0.017	0.064**	0.059***	0.057***
	Hungary	1	0.053**	0.048**	-0.030**	0.008	0.069***	0.056***	-0.026*	0.012	0.092***	0.068***	-0.019	0.015
	Ireland	16	0.006	0.059**	0.034**	-0.008	0.023	0.070***	0.032**	-0.008	0.008	0.062**	0.027*	-0.010
	Italy	46	0.029	0.036**	0.029**	0.016	0.028	0.032*	0.029**	0.015	0.008	0.021	0.023*	0.012
	Liechtenstein	2	0.072**	0.088**	0.103***	0.105***	0.057	0.070	0.095***	0.097***	0.035	0.059	0.088***	0.094***
	Luxembourg	7	0.037	0.037	0.029	0.031	0.067	0.053	0.034	0.033	0.041	0.039	0.025	0.030
	Malta	1	0.155***	0.179***	0.069***	0.028	0.152***	0.161***	0.056**	0.025	0.081**	0.124***	0.032	0.015
	Monaco	1	0.206***	0.094***	0.054***	0.054***	0.386***	0.168***	0.070***	0.073***	0.301***	0.123***	0.042***	0.060***
	Netherlands	21	0.019	0.024	0.020	0.018	0.011	0.018	0.014	0.018	-0.006	0.009	0.008	0.016
	Norway	30	0.098***	0.104***	0.092***	0.066***	0.095**	0.110***	0.099***	0.068***	0.073*	0.099***	0.092***	0.065***
	Portugal	9	0.002	0.046*	0.057**	0.038*	0.024	0.061**	0.065***	0.042*	-0.010	0.043*	0.054**	0.037*
	Slovenia	2	0.009	0.045	0.005	0.013	0.013	0.050	0.006	0.009	-0.007	0.040	0.000	0.006
	Spain	34	0.033	0.037	0.028*	0.027**	0.055*	0.044*	0.029*	0.024**	0.041	0.037	0.024*	0.023*
	Sweden	89	0.036*	0.039**	0.031**	0.023**	0.040*	0.043**	0.033**	0.022**	0.021	0.033**	0.027**	0.019*
	Switzerland	41	0.031	0.028	0.028**	0.015	0.036	0.030	0.027*	0.013	0.016	0.020	0.021	0.010
	Türkiye	9	0.122*	0.149**	0.135***	0.039*	0.137*	0.145**	0.134***	0.037*	0.117*	0.135**	0.128***	0.035*
	Ukraine	1	0.171***	0.053**	0.085***	0.019	0.175***	0.064**	0.098***	0.021	0.130***	0.040	0.083***	0.015
	United Kingdom	180	0.034*	0.034**	0.028**	0.014	0.038*	0.041***	0.032***	0.018*	0.021	0.031**	0.026**	0.016*
Industry	Communication Services	49	-0.019	-0.010	-0.008	0.001	-0.025	-0.019	-0.009	0.000	-0.020	-0.016	-0.007	0.001
	Consumer Discretionary	59	0.002	0.019	0.015	0.010	0.005	0.014	0.012	0.009	0.014	0.019	0.015	0.011
	Consumer Staples	41	-0.016	-0.010	-0.011	0.001	-0.003	-0.016	-0.014	-0.002	0.008	-0.010	-0.010	-0.001
	Energy	36	0.012	0.029	0.030*	0.024	0.011	0.020	0.024	0.020	0.013	0.021	0.024	0.020
	Health Care	53	-0.001	0.006	0.008	0.022**	0.003	-0.001	0.005	0.021*	0.024	0.010	0.012	0.024**
	Industrials	161	-0.016	-0.007	0.000	0.007	-0.016	-0.012	-0.002	0.007	-0.010	-0.009	0.000	0.007
	Information Technology	86	0.000	0.009	0.006	0.010	0.006	0.002	0.003	0.008	0.013	0.006	0.006	0.009
	Materials	40	-0.028	-0.018	-0.017	-0.011	-0.021	-0.023	-0.020	-0.010	-0.009	-0.017	-0.016	-0.008
	Real Estate	78	-0.001	0.004	-0.001	0.007	-0.002	-0.007	-0.006	0.003	0.007	-0.003	-0.003	0.005
	Utilities	21	-0.002	0.015	0.003	-0.003	0.002	0.014	0.002	-0.004	-0.002	0.012	0.001	-0.005
Distressed	Distressed	212	-0.001	-0.003	0.000	-0.004	0.000	-0.001	0.003	-0.001	-0.008	-0.005	0.000	-0.002
	Grey zone	174	0.007	0.014*	0.011*	0.001	0.004	0.012	0.011	0.001	-0.005	0.008	0.008	0.000
	NA	155	-0.013	-0.006	0.002	0.004	-0.012	-0.009	0.002	0.007	-0.006	-0.007	0.003	0.008
Relative size	Large	216	0.025**	0.031***	0.033***	0.022***	0.025*	0.027***	0.030***	0.023***	0.032**	0.031***	0.032***	0.024***
	Medium	284	0.005	0.001	0.003	-0.001	0.009	-0.001	0.003	0.000	0.017	0.003	0.005	0.001
	NA	31	0.001	0.024	0.020	0.015	-0.007	0.012	0.015	0.016	0.007	0.019	0.020	0.018
Deal status	Announced	15	0.006	-0.019	-0.018	-0.003	0.002	-0.022	-0.020	-0.006	-0.002	-0.024	-0.022	-0.007
	Terminated/Withdrawn	136	-0.008	-0.005	-0.016**	-0.009	-0.009	-0.005	-0.016**	-0.009	-0.002	-0.002	-0.014*	-0.009
Deal attitude	Friendly to hostile	12	-0.024	-0.018	-0.032	-0.028	-0.042	-0.030	-0.030	-0.039*	-0.032	-0.025	-0.027	-0.037
	Hostile	26	0.020	0.001	-0.006	-0.003	0.027	0.013	0.001	-0.001	0.028	0.014	0.002	-0.001
Consideration	Hybrid	152	-0.024**	-0.024***	-0.024***	-0.017***	-0.019*	-0.018*	-0.018**	-0.015**	-0.021*	-0.019**	-0.019**	-0.015**
	Stock	237	-0.021*	-0.013	-0.022***	-0.017***	-0.025**	-0.015	-0.021***	-0.019***	-0.031***	-0.018*	-0.023***	-0.020***
Sponsor backed	Sponsor backed	522	-0.006	-0.011	-0.007	-0.007	-0.009	-0.014	-0.011	-0.007	-0.007	-0.013	-0.010	-0.006
Related industry	Related industry	618	0.004	0.002	0.013*	0.005	0.004	0.005	0.011	0.004	0.003	0.004	0.011	0.004
Cross-border	Cross-border	275	-0.018*	-0.004	-0.010*	-0.013***	-0.021**	-0.003	-0.009	-0.011**	-0.022**	-0.004	-0.009	-0.012**
Crisis	Crisis	50	0.019	0.015	0.010	-0.006	-0.006	0.001	-0.001	-0.008	-0.006	0.000	-0.001	-0.008
N			792	792	792	792	792	792	792	792	792	792	792	792
R-Squared			0.062	0.107	0.144	0.127	0.066	0.098	0.132	0.122	0.071	0.094	0.131	0.123
Adj. R-Squared			-0.008	0.040	0.080	0.061	-0.004	0.030	0.068	0.056	0.001	0.027	0.066	0.057

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

Source: Author's own creation.

Looking at the MM in the [-10; +10] event window (excluding dummy variables with N<10), the countries with the highest significant coefficients are Norway (9.8%), Denmark (6.5%), Belgium (5.7%), and Finland (4.8%). These results align with previous findings throughout the thesis, confirming that companies from Nordic countries generally achieve positive short-term abnormal returns surrounding announcement dates. This regional pattern suggests that institutional factors such as corporate governance standards may influence short-term acquirer performance (Martynova & Renneboog, 2011).

The coefficients of the industry dummy variables seem to have conflicting results, with the highest significant value for Health Care in the [-1; +1] event window. Overall, looking at the MM in the longest event window, acquirers within Financials (as the reference category) seem to perform better than targets within Financials. Beitel et al. (2004) attributed this dominance to the successful bidders within Banking's ability to choose smaller and faster growing targets with bad relative efficiency measures.

The coefficients for distressed buyers show mixed results, with significantly positive coefficients only appearing in shorter event windows for companies in the 'grey zone' at the 10% level. The variable is therefore examined at the individual level.

Table 25: Financial distress - Market Model - Buyer

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Distressed	[-1; +1]	211	-0.06%	0.44%	-0.14	88.67%	
Grey zone	[-1; +1]	174	0.39%	0.39%	0.99	32.29%	
Safe	[-1; +1]	252	0.22%	0.39%	0.56	57.64%	
NA	[-1; +1]	155	1.27%	0.54%	2.35	2.00%	**
Distressed	[-3; +3]	211	-0.08%	0.54%	-0.15	88.18%	
Grey zone	[-3; +3]	174	0.92%	0.49%	1.85	6.53%	*
Safe	[-3; +3]	252	-0.07%	0.44%	-0.15	88.30%	
NA	[-3; +3]	155	1.24%	0.71%	1.75	8.26%	*

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Individual testing reveals that while not statistically significant, the CAAR is slightly more negative for distressed buyers (-0.08%) than for safe buyers (-0.07%). Additionally, buyers in the financial 'grey zone' have a CAAR of 0.92%, significant at the 10% level with a p-value of 6.53%, close to being significant at the 5% level. While definitive conclusions are difficult to draw, the results indicate that buyers gain greater abnormal returns when they are financially stable, inconsistent with Smith & Kim's (1994) findings. This supports the notion that financially stable acquirers have stronger negotiating positions and can better manage post-merger integration.

Looking at the relative size of the targets to the bidders, the coefficients for larger targets [+2.2%; +3.3%] are significantly positive across all models and event windows. While the findings from the literature are often conflicting, these results are consistent with earlier empirical evidence in the U.S. (Asquith et al., 1983; Jarrell & Poulsen, 1989; Franks et al., 1991). These studies suggest that investors may view deals with relatively larger targets as more transformative and thus more successful in realizing synergies post-merger.

The significantly negative coefficients [-1.6%; -0.2%] of canceled transactions align with findings in the literature. While investors are likely unaware of the eventual cancellation at the announcement date, their initial skepticism appears justified, resulting in negative CAARs for the acquirer. Varmaz & Laibner (2016) studied this through logistic regression and found that past negative abnormal returns significantly increased the likelihood of deal cancellation, suggesting that market participants can effectively sense problematic transactions.

Interestingly, the coefficients for hostile deals are mostly positive [-0.6%; +2.8%] yet not significant. Most empirical evidence shows the opposite, as targets in opposed deals typically retaliate in various ways, ultimately leading to acquirers paying higher premiums, to convince target shareholders to sell. The variable is tested individually and presented in Table 26.

Table 26: Deal attitude - Market Model - Buyer

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Friendly to Hostile	[-1; +1]	12	-2.68%	1.73%	-1.55	15.05%	
Hostile	[-1; +1]	26	0.37%	0.88%	0.42	68.09%	
Friendly	[-1; +1]	754	0.44%	0.23%	1.93	5.37%	*
Friendly to Hostile	[-3; +3]	12	-2.95%	2.05%	-1.43	17.92%	
Hostile	[-3; +3]	26	0.02%	0.96%	0.02	98.71%	
Friendly	[-3; +3]	754	0.47%	0.28%	1.69	9.21%	*

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

When tested individually, however, the results align more closely with previous academic findings. Friendly deals result in higher abnormal returns for acquirers, although only significant at the 10% level and close to the 5% level in the 3-day event window. This suggests that cooperative negotiations typically lead to more optimal deal structures and smoother post-merger integration.

The coefficients for stock-financed [-3.1%; -1.3%] and hybrid-financed deals [-2.4%; -1.5%] are negative and significant across all models and event windows. The results are consistent with previous empirical evidence, as deals financed with cash typically yield higher CAAR for buyers (Wansley et al., 1983; Franks

et al., 1991; Walker, 2000; Andrade et al., 2001; BCG, 2011; Martynova & Renneboog, 2011; Alexandridis et al., 2012). This persistent finding supports the signaling theory that cash offers indicate management's confidence in the deal's value, while stock-based financing may signal overvaluation of the acquirer's shares.

Sponsor backed deals have negative coefficients [-1.4%; -0.6%] in all models and event windows, lacking statistical significance. The variable is therefore tested individually.

Table 27: Sponsor backed - Market Model - Buyer

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Sponsor backed	[-1; +1]	522	0.19%	0.26%	0.71	47.86%	
Corporate buyer	[-1; +1]	270	0.77%	0.39%	2.00	4.66%	**
Sponsor backed	[-3; +3]	522	0.18%	0.31%	0.59	55.74%	
Corporate buyer	[-3; +3]	270	0.82%	0.50%	1.64	10.26%	

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Individual testing reveals that corporate buyers achieve significantly higher returns (0.77%) compared to sponsor-backed acquirers (0.19%) in the [-1; +1] window at the 5% significance level. The results are consistent with the literature, as CAAR in sponsor backed deals have been found worse compared to corporate acquirers (Jenner et al., 2016). This gap may reflect market concerns about the financial buyers' ability to integrate synergies, as well as having shorter investment horizons.

The coefficients for industry-related deals are positive [+0.2%; +1.3%] and significant in the [-3; +3] window for the MM. These results are consistent with previous studies on European transactions (Martynova & Renneboog, 2011). This is often attributed to investors' trust in the ability of acquirers to realize operational synergies, which is generally viewed as easier in horizontal mergers. When acquirers purchase businesses in familiar territory, markets appear to have greater confidence in successful integration.

Looking at cross-border deals, the coefficients are negative [-2.2%; -0.3%] and significant for most event windows. Earlier empirical evidence from the U.S. supports these results (DeLong, 2001). In Europe, Martynova & Renneboog (2011) found opposite results in the event window [-5; +5], although similar negative effects emerged when expanding the event window to [-60; +60]. The discrepancy in shorter windows may reflect this study's sole focus on public-to-public transactions, which leads to less information asymmetry. The negative market reaction likely captures investors' concerns about successful integration, regulatory challenges, and cultural differences in cross-border deals.

The coefficients of the crisis variable show mixed findings [-0.8%; +1.9%] and are not statistically significant, leading to individual testing across all event windows.

Table 28: Time of crisis - Market Model - Buyer

Dummy Variable	Event window	N	CAAR	Std. Error	T-value	P-Value	Significance level
Crisis	[-1; +1]	50	-0.77%	0.81%	-0.95	34.68%	
No crisis	[-1; +1]	742	0.46%	0.23%	2.05	4.09%	**
Crisis	[-3; +3]	50	0.68%	1.40%	0.49	62.82%	
No crisis	[-3; +3]	742	0.38%	0.27%	1.41	15.76%	
Crisis	[-5; +5]	50	1.16%	1.79%	0.65	51.78%	
No crisis	[-5; +5]	742	0.20%	0.32%	0.63	52.83%	
Crisis	[-10; +10]	50	1.09%	2.19%	0.50	62.23%	
No crisis	[-10; +10]	742	-0.32%	0.40%	-0.79	42.78%	

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

While non-crisis period acquisitions generate a significant positive CAAR of 0.46% in the [-1; +1] window, crisis-period deals show a non-significant negative CAAR of -0.77%. In longer windows, however, crisis-period acquisitions demonstrate higher CAARs. Although not statistically significant, these results align with earlier findings that acquisitions during economic downturns tend to benefit acquirers. BCG's (2019) study on 10,000 deals from 1980 to 2018 found a difference in CAR of 0.2% using a [-3; +3] event window, similar to the difference of 0.3% observed in this study.

The buyer-side MLR results support previous empirical evidence while some variables suggest the need for further research. Specifically, financially distressed buyers and acquisitions conducted during economic downturns. The significance of the variables' impact on CAR is primarily concentrated within shorter event windows when tested individually, which was expected based on the univariate analysis. The analysis establishes statistically significant relationships between all explanatory variables and CAR, leading to rejection of H_0 from the acquirers' perspective.

6.2.4 Discussion

This section reflects on the findings from the multivariate analysis, which tested the second hypothesis: whether a relationship can be demonstrated between the selected explanatory variables and CAR. The results provide strong evidence supporting the alternative hypothesis, revealing several consistent patterns and important relationships between CAR and the explanatory variables. An overview of the results is presented in Table 29.

Table 29: Overview of MLR results

Categorical Variable	Multivariate analysis	
	Target MLR	**Buyer MLR**
Country	• Denmark • Finland • Sweden	• Norway • Denmark • Belgium
Industry	• Health Care • Materials • Information Technology	• Health Care • Energy • Consumer Discretionary
Financial distress	• Negative effect when distressed	• Negative effect when distressed
Relative size	• Negative effect when larger	• Positive effect when larger
Deal status	• Negative effect when canceled	• Negative effect when canceled
Deal attitude	• Positive effect when hostile	• Negative effect when hostile
Method of payment	• Cash	• Cash
Sponsor backed	• Negative effect when sponsored	• Negative effect when sponsored
Related industry	• Negative effect when related	• Positive effect when related
Cross-border	• Positive effect in cross-border	• Negative effect in cross-border
Time of crisis	• Conflicting results	• Conflicting results

Source: Author's own creation.

Nordic countries and the Health Care industry demonstrated superior performance for both targets and acquirers at 1% and 5% significance levels, consistent with previous findings. The superior abnormal returns in this region have been attributed to its strong corporate governance structure. Target companies benefited from being financially stable (1% significance level), indicating stronger bargaining power leading to higher deal premiums. The same was found for buyers, although only with significant results at the 10% level in the grey zone, suggesting the need for further research. Significant at the 1% level, the analysis found that relatively larger targets benefited the buyers and destroyed value for the targets, indicating lower deal premiums paid as the target size increases. Moreover, the analysis found that canceled transactions destroy value for both parties at 1% and 5% significance levels. Hostile deals benefited the target firms significantly at the 1% level, while they destroyed value for the buyers (10% significance level), consistent with the hold-out argument. All-cash takeovers benefited both parties, significant at the 1% level, consistent with the signaling effect. When the transactions were not sponsored, the abnormal returns significantly increased for both firms, at 5% significance levels.

Industry relatedness benefited buyers (10% significance level), while it destroyed value for targets (1% significance level). This is consistent with previous findings, indicating that higher premiums are paid in diversifying mergers. Moreover, target companies benefited from cross-border acquisitions, while they destroyed value for the acquiring firms (1% significance level). Previous research attributes this to variations in investor protection quality between countries and information asymmetry. Lastly, target companies earned greater abnormal returns in non-crises periods in shorter event windows, while this effect reversed in the [-10; +10] window (1% significance level). The opposite was found for buyers, who benefited as the window expanded, although the only significant result (10% significance level) was in the [-1; +1] window, where economic downturns reduced shareholder value.

Despite the evidence of statistically significant relationships, other methodological approaches will briefly be discussed. The Breusch-Pagan and White tests indicated heteroscedasticity in several of the regressions, which is why standard robust errors were implemented (HC3). An alternative approach could have been to use Generalized Least Squares (GLS). This could potentially have provided a more efficient parameter estimation by modelling the variance structure. Additionally, the current specification does not include time fixed effects or clustered standard errors. Including time fixed effects could potentially help control for macroeconomic conditions that affect deals conducted in the same period, while clustering standard errors by year, country, or industry could adjust for potential correlation in the residuals within those groups. Overall, the implementation of standard robust errors was deemed sufficient to address heteroscedasticity without adding additional model complexity. Furthermore, time fixed effects and clustering were excluded to maintain model simplicity and because the Durbin-Watson test indicated no significant serial correlation in the residuals, supporting the assumption of independence over time, although not necessarily within clusters.

There are also several limitations associated with the multivariate analysis. While the dummy variables labeled 'NA' are included to preserve the explanatory power of the overall model, they provide limited interpretive value regarding financial distress and relative size relationships. Additionally, this study employs GICS codes for industry classification, whereas much of the previous empirical evidence utilizes SIC codes. The U.S. Government last revised the SIC system in 1987 and ceased to update codes for industry groups (LOC, 2025). Consequently, many industry classifications do not align perfectly with GICS codes, complicating direct comparisons with earlier research.

Despite these methodological limitations, the consistency of findings across different models supports the study's conclusions. The analysis establishes statistically significant relationships between the explanatory variables and CAR, leading to the rejection of H_0 for both targets and acquirers.

7. CONCLUSION

The goal of this thesis has been to assess the short-term value creation in public-to-public M&A transactions in Europe from 2000 to 2024. Given that much existing research focuses on historical merger waves or other regions, it was deemed relevant to contribute to the literature with a more current and comprehensive European data set, covering both the sixth and seventh merger waves. This led to the following research question: How do public-to-public M&A announcements in Europe affect the short-term value of the target and acquiring company and what factors drive these effects?

The first hypothesis examined whether M&A announcements have a significant impact on CAR. For the targets, H_0 was rejected as the announcements had a statistically significant positive impact on CAR. The results were significant at the 1% level in all models and event windows [-1; +1], [-3; +3], [-5; +5], and [-10; +10]. As the event window expanded, the CAR increased. Using the Market Model (European index), the CAAR reached 16.71% in the [-10; +10] window. Under the same conditions, the CMR and CAPM models yielded CAARs of 16.62% and 17.39%, respectively. Overall, these findings support the existing literature on abnormal target returns.

For the acquirers, H_0 was rejected in the [-1; +1], [-3; +3], and [-5; +5] windows at 5% and 10% significance levels, but not in the longer [-10; +10] event window. Acquirers earned small but statistically significant positive CAARs in the shorter windows. Using the Market Model (European index), the CAAR was 0.39% in the [-1; +1] window (5% significance level). In longer windows, the CAARs turned negative under statistical models, but remained positive under the economic model. These results are consistent with the literature, which typically finds neutral or slightly negative or positive short-term CAR for buyers.

The combined effect of CAR was assessed using the Market Model. H_0 was rejected in all event windows as the M&A announcements had a significant positive effect on the combined CAR at the 1% significance level. Using both local indices and a European index, the combined CAAR was 2.31% and 2.17% respectively. The findings are consistent with prior research and were expected based on the abnormal returns of the target and acquiring companies.

The second hypothesis examined whether a statistically significant relationship could be demonstrated between the explanatory variables and CAR. Through multiple linear regression, the independent variables (dummy variables) were tested for sensible relationships with CAR. Subsequent univariate analysis was conducted for variables not significant in the MLR. H_0 was rejected for target companies as a statistically significant relationship between all the variables and CAR was demonstrated. While not all

variables were significant simultaneously in the MLR, each exhibited significance when tested individually. The same was found for the acquirers, where H_0 was rejected in the shorter event windows ([-1; +1] and [-3; +3]), although some variables only exhibited (weak) evidence at the 10% significance level.

Overall, this thesis presents new empirical evidence on public-to-public M&A transactions in Europe. While much prior research focused on earlier merger waves or U.S. markets, this study provides a broader and newer European perspective. It also adds value to existing literature by comparing models and benchmarks for estimating abnormal returns and by examining how deal-, firm-, and macroeconomic-specific characteristics drive these effects.

As expected, target companies benefit from M&A announcements, while the acquiring companies only earn significant positive abnormal returns in shorter event windows. As such, the combined effect was also significantly positive. Moreover, the presented characteristics' influence on abnormal returns are generally consistent with previous findings. The study provides empirical evidence of how both parties benefit from all-cash takeovers, non-sponsored deals and completion of the transactions. Furthermore, the Nordic countries and the Health Care industry demonstrate superior performance. An increase in target size benefits the buyer, while the target companies benefit from cross-border deals and diversification, presumably due to higher premiums, ultimately destroying value for the buyers. The opposite is true for buyers, who benefit from horizontal and domestic mergers. Additionally, hostile takeovers benefit the target and destroy value for the buyers, consistent with the hold-out argument. Contrary to prior research, the study finds that both parties benefit from being financially stable, suggesting the need for further research. Lastly, from a macroeconomic perspective, although not statistically significant, the buyers benefit from transactions conducted during economic downturns only in longer event windows. In shorter event windows, the opposite is found for targets, consistent with the idea that lower deal premiums are paid during a crisis. These mixed findings also point to the potential for further research.

Future research could also build on these findings by exploring the long-term performance of M&A transactions or by including private targets. Another consideration is to include accounting-based methods to measure value creation. Further studies might also examine the role of deal premiums, investor sentiment, or regulatory environments. The results of such studies would greatly advance the development of more informed theories on how public M&A transactions leave a mark on capital markets.

REFERENCES

Akerlof, G. A. (1970). The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics, 84*(3), 488-500.

Alexander, G. J., & Chervany, N. L. (1980). On the Estimation and Stability of Beta. *Journal of Financial and Quantitative Analysis, 15*(1), 123-137.

Alexandridis, G., Mavrovitis, C. F., & Travlos, N. G. (2012). How have M&As changed? Evidence from the sixth merger wave. *The European Journal of Finance, 18*(8), 663-688.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance, 23*(4), 589-609.

Anderson, E., & Gatignon, H. (1986). Modes of Foreign Entry: A Transaction Cost Analysis and Propositions. *Journal of International Business Studies, 17*(3), 1-26.

Anderson, T. W., & Darling, D. A. (1952). Asymptotic Theory of Certain "Goodness of Fit" Criteria Based on Stochastic Processes. *The Annals of Mathematical Statistics, 23*(2), 193-212.

Andrade, G., Mitchell, M., & Stafford, E. (2001). New Evidence and Perspectives on Mergers. *Journal of Economic Perspectives, 15*(2), 103-120.

Andriuskevicius, K. (2019). Comparison of Value Creation through M&A in European Union. *Inzinerine Ekonomika-Engineering Economics, 30*(2), 187-194.

Arik, E., & Kutan, A. M. (2015). Do Mergers and Acquisitions Create Wealth Effects? Evidence from Twenty Emerging Markets. *Eastern European Economics, 53*(6), 529-550.

Artmann, S., Finter, P., Kempf, A., Koch, S., & Theissen, E. (2012). The Cross-Section of German Stock Returns: New Data and New Evidence. *Schmalenbach Business Review, 64*, 20-43.

Asquith, P., Bruner, R. F., & Mullins, D. W. (1983). The gains to bidding firms from merger. *Journal of Financial Economics, 11*(1), 121-139.

Axelson, U., Jenkinson, T., Strömberg, P., & Weisbach, M. S. (2013). Borrow Cheap, Buy High? The Determinants of Leverage and Pricing in Buyouts. *The Journal of Finance, 68*(6), 2223-2267.

Bachelier, L. (1900). The Theory of Speculation. *Annales scientifiques de l'Ecole normale supérieure, 3*(17), 21-86.

Bali, T. G., Engle, R. F., & Murray, S. (2016). *Empirical Asset Pricing: The Cross Section of Stock Returns*. John Wiley & Sons, Inc.

Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research, 6*(2), 159-178.

Banerjee, A., & Owers, J. E. (1996). The impact of the nature and sequence of multiple bids in corporate control contests. *Journal of Corporate Finance, 3*(1), 23-43.

Barber, B. M., & Odean, T. (2001). Boys will be Boys: Gender, Overconfidence, and Common Stock Investment. *The Quarterly Journal of Economics, 116*(1), 261-292.

Bargeron, L. L., Schlingemann, F., Stulz, R., & Zutter, C. J. (2008). Why do private acquirers pay so little compared to public acquirers? *Journal of Financial Economics, 89*(3), 375-390.

Barkema, H. G., Bell, J. H., & Pennings, J. M. (1996). Foreign Entry, Cultural Barriers, and Learning. *Strategic Management Journal, 17*(2), 151-166.

Bartholdy, J., & Peare, P. (2005). Estimation of Expected Return: CAPM vs. Fama and French. *International Review of Financial Analysis, 14*(4), 407-427.

BBC. (2018, August 20). *Greek bailout crisis in 300 words*. BBC.

BCG. (2011). *Riding The Next Wave in M&A: Where Are the Opportunities to Create Value?* Boston Consulting Group.

BCG. (2018). *The 2018 M&A Report: Synergies Take Center Stage*. Boston Consulting Group.

BCG. (2019). *The 2019 M&A Report: Downturns Are a Better Time For Deal Hunting.* Boston Consulting Group.

Becker, W. H., & McClenahan, W. M. (2011). *Eisenhower and the Cold War Economy.* Johns Hopkins University Press.

Beitel, P., Schiereck, D., & Wahrenburg, M. (2004). Explaining M&A Success in European Banks. *European Financial Management, 10*(1), 109-139.

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

Berk, J., & DeMarzo, P. (2024). *Corporate Finance, Global Edition (6th Edition).* Pearson.

Berry, M. A., Gallinger, G. W., & Henderson, G. V. (1990). Using Daily Stock Returns in Event Studies and the Choice of Parametric versus Nonparametric Test Statistics. *Quarterly Journal of Business and Economics, 29*(1), 70-85.

Binder, J. J. (1998). The event study methodology since 1969. *Review of Quantitative Finance and Accounting, 11*(2), 111-137.

Bradley, M., & Sundaram, A. K. (2004). Acquisitions and Performance: A Re-Assessment of the Evidence. *SSRN Electronic Journal.*

Breusch, T. S., & Pagan, A. R. (1979). A Simple Test for Heteroscedasticity and Random Coefficient Variation. *Econometrica, 47*(5), 1287-1294.

Bris, D. L., Goetzmann, W. N., & Pouget, S. (2019). The present value relation over six centuries: The case of the Bazacle company. *Journal of Financial Economics, 132*(1), 248-265.

Brown, S. J., & Warner, J. B. (1985). Using Daily Stock Returns: The Case of Event Studies. *Journal of Financial Economics, 14*(1), 3-31.

Bruner, R. (2004). Where M&A Pays and Where It Strays: A Survey of the Research. *Journal of Applied Corporate Finance, 16*(4), 63-76.

Cable, J., & Holland, K. (1999). Modelling normal returns in event studies: a model-selection approach and pilot study. *The European Journal of Finance, 5*(4), 331-341.

Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). *The Econometrics of Financial Markets.* Princeton University Press.

Cannella, A. A., & Hambrick, D. C. (1993). Effects of executive departures on the performance of acquired firms. *Strategic Management Journal, 14*(1), 137-152.

Capron, L. (1999). The long-term performance of horizontal acquisitions. *Strategic Management Journal, 20*(11), 987-1018.

Capron, L., & Pistre, N. (2002). When do acquirers earn abnormal returns? *Strategic Management Journal, 23*(9), 781-794.

Carlen, J. (2016). *A Brief History of Entrepreneurship: The Pioneers, Profiteers, and Racketeers Who Shaped Our World.* Columbia University Press.

Ceddaha, F. (2007). *Fusions Acquisitions.* Economica.

Cho, S., & Chung, C. Y. (2022). Review of the Literature on Merger Waves. *Journal of Risk and Financial Management, 15*(10), 432.

Christofferson, S. A., McNish, R. S., & Sias, D. L. (2004). Where mergers go wrong. *The McKinsey quarterly*(2), 1-6.

CIQ. (2025). *S&P Capital IQ.* S&P Global Market Intelligence.

Colombo, M. G., Veugelers, R., Garrone, P., & Cassiman, B. (2005). The impact of M&A on the R&D process: An empirical analysis of the role of technological- and market-relatedness. *Research Policy, 34*(2), 195-220.

Coutts, J., Mills, T. C., & Roberts, J. (1994). The market model and the event study method: A synthesis of the econometric criticisms. *International Review of Financial Analysis, 3*(2), 149-171.

Craninckx, K., & Huyghebaert, N. (2015). Large Shareholders and Value Creation Through Corporate Acquisitions in Europe. The Identity of the Controlling Shareholder Matters. *European Management Journal, 33*(2), 116-131.

Damodaran, A. (1999). *Applied Corporate Finance.* John Wiley & Sons, Inc.

Damodaran, A. (2006). *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance.* John Wiley & Sons, Inc.

Datta, D. K. (1991). Organizational fit and acquisition performance: Effects of post-acquisition integration. *Strategic Management Journal, 12*(4), 281-297.

Daves, P. R., Ehrhardt, M. C., & Kunkel, R. A. (2000). Estimating Systematic Risk: The Choice Of Return Interval And Estimation Period. *Journal of Financial and Strategic Decisions, 13*(1), 7-13.

DeLong, G. L. (2001). Stockholder gains from focusing versus diversifying bank mergers. *Journal of Financial Economics, 59*(2), 221-252.

Dennis, D. K., & McConnell, J. J. (1986). Corporate mergers and security returns. *Journal of Financial Economics, 16*(2), 143-187.

Descartes, R. (1641). *Meditations On First Philosophy.* Cambridge.

Devos, E., Kadapakkam, P.-R., & Krishnamurthy, S. (2009). How Do Mergers Create Value? A Comparison of Taxes, Market Power, and Efficiency Improvements as Explanations for Synergies. *The Review of Financial Studies, 22*(3), 1179-1211.

Dittmar, A. K., Li, D., & Nain, A. (2012). It Pays to Follow the Leader: Acquiring Targets Picked by Private Equity. *Journal of Financial and Quantitative Analysis, 47*(5), 901-931.

Dodd, P. (1980). Merger proposals, management discretion and stockholder wealth. *Journal of Financial Economics, 8*(2), 105-137.

Dodd, P., & Ruback, R. (1977). Tender offers and stockholder returns: An empirical analysis. *Journal of Financial Economics, 5*(3), 351-373.

Durbin, J., & Watson, G. (1951). Testing for Serial Correlation in Least Squares Regression. II. *Biometrika, 38*(1-2), 159-178.

Duso, T., Gugler, K., & Yurtoglu, B. (2010). Is the event study methodology useful for merger analysis? A comparison of stock market and accounting data. *International Review of Law and Economics, 30*(2), 186-192.

Dyckman, T., Philbrick, D., & Stephan, J. (1984). A Comparison of Event Study Methodologies Using Daily Stock Returns: A Simulation Approach. *Journal of Accounting Research, 22*(2), 1-30.

Ebster, C., Wagner, U., & Valis, S. (2006). The effectiveness of verbal prompts on sales. *Journal of Retailing and Consumer Services, 13*(3), 169-176.

Eccles, R., Lanes, K., & Wilson, T. (1999). Are you paying too much for that acquisition? *Harvard Business Review, 77*(4), 136-146.

Eckbo, B. E. (2008). *Handbook of Empirical Corporate Finance.* Elsevier.

Edelson, S. (2023, August 4). *Amazon Revamps Grocery Business With Biggest Changes Since Acquiring Whole Foods In 2017*. Forbes Magazine.

Eisenhart, M. (1991). Conceptual Frameworks for Research Circa 1991: Ideas from a Cultural Anthropologist; Implications for Mathematics Education Researchers. *Proceedings of the 13th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, 1*, 202-219.

Elton, E. J., Gruber, M. J., & Brown, S. J. (2017). *Modern Portfolio Theory and Investment Analysis.* John Wiley & Sons, Inc.

Emiru, T., & Weisblatt, S. (2025). Economic tides and merger waves: insights from a long-run perspective. *Studies in Economics and Finance, 42*(1), 75-88.

Eral, I., Liao, R. C., & Weisbach, M. S. (2012). Determinants of Cross-Border Mergers and Acquisitions. *The Journal of Finance, 67*(3), 1045-1082.

Espinosa, C. (2024, September 17). *Gross domestic product at current market prices of selected European countries in 2023*. Eurostat; IMF.

EU. (2024). *Greece*. European Union.

Fadda, S. (2019). Testing the random walk hypothesis of stock indexes through variance-ratio. *Periodicals of Engineering and Natural Sciences, 7*(1), 12-19.

Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance, 25*(2), 383-417.

Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics, 33*(1), 3-56.

Fama, E. F., & French, K. R. (2004). The Capital Asset Pricing Model: Theory and Evidence. *Journal of Economic Perspectives, 18*(3), 25-46.

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The Adjustment of Stock Prices to New Information. *International Economic Review, 10*(1), 1-21.

Fan, J. P., & Goyal, V. (2006). On the Patterns and Wealth Effects of Vertical Mergers. *The Journal of Business, 79*(2), 877-902.

Fee, C., & Thomas, S. (2004). Sources of gains in horizontal mergers: evidence from customer, supplier, and rival firms. *Journal of Financial Economics, 74*(3), 423-460.

Feito-Ruiz, I., & Menéndez-Requejo, S. (2011). Cross-border Mergers and Acquisitions in different legal environments. *International Review of Law and Economics, 31*(3), 169-187.

Ferguson, N. (2004). *Empire: The Rise and Demise of the British World Order and the Lessons for Global Power.* Basic Books.

Firth, M. (1979). The Profitability of Takeovers and Mergers. *The Economic Journal, 89*(354), 316-328.

Franks, J., Harris, R., & Titman, S. (1991). The postmerger share-price performance of acquiring firms. *Journal of Financial Economics, 29*(1), 81-96.

Frazzini, A., Kabiller, D., & Pedersen, L. H. (2018). Buffett's Alpha. *Financial Analysts Journal, 74*(4), 35-55.

FRED. (2022, December 9). *ECD based Recession Indicators for Euro Area from the Period following the Peak through the Trough*. Federal Reserve Economic Data.

FTC. (1914). *The Antitrust Laws.* Federal Trade Commission.

FTC. (1977). *Statistical Report on Mergers and Acquisitions.* Federal Trade Commission.

Gaughan. (2017). *Mergers, Acquisitions, And Corporate Restructurings.* John Wiley & Sons, Inc.

Gaughan, P. A. (2009). M&As in troubling times. *The Journal of Corporate Accounting & Finance, 20*(2), 45-50.

Goergen, M., & Renneboog, L. (2004). Shareholder Wealth Effects of European Domestic and Cross-border Takeover Bids. *European Financial Management, 10*(1), 9-45.

Goold, M., & Campbell, A. (1998). Desperately seeking synergy. *Harvard Business Review, 76*(5), 130-143.

Grossman, S. J., & Stiglitz, J. E. (1980). On the Impossibility of Informationally Efficient Markets. *The American Economic Review, 70*(3), 393-408.

Gujarati, D., & Porter, D. (2009). *Basic Econometrics.* McGraw Hill.

Guo, S., Hotchkiss, E. S., & Song, W. (2011). Do Buyouts (Still) Create Value? *The Journal of Finance, 66*(2), 479-517.

Hair, J. F., Hult, G. T., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R.* Springer Nature.

Hamilton, J. (2025, April 30). *Dates of U.S. recessions as inferred by GDP-based recession indicator*. Federal Reserve Economic Data.

Harford, J. (2005). What drives merger waves? *Journal of Financial Economics, 77*(3), 529-560.

Hayn, C. (1989). Tax attributes as determinants of shareholder gains in corporate acquisitions. *Journal of Financial Economics, 23*(1), 121-153.

Healy, P. M., Palepu, K. G., & Ruback, R. S. (1992). Does corporate performance improve after mergers? *Journal of financial economics, 31*(2), 135-175.

Henderson, G. V. (1990). Problems and Solutions in Conducting Event Studies. *Journal of Risk and Insurance, 57*(2), 282-306.

Hillier, D., Ross, S., Westerfield, R., Jaffe, J., & Jorden, B. (2021). *Corporate Finance - Fourth European Edition.* London: McGraw Hill.

Hoberg, G., & Phillips, G. (2010). Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis. *The Review of Financial Studies, 23*(10), 3773-3811.

Homburg, C., & Bucerius, M. (2005). A Marketing Perspective on Mergers and Acquisitions: How Marketing Integration Affects Postmerger Performance. *Journal of Marketing, 69*(1), 95-113.

Houston, J. F., James, C. M., & Ryngaert, M. D. (2001). Where do merger gains come from? Bank mergers from the perspective of insiders and outsiders. *Journal of Financial Economics, 60*(2), 285-331.

Hudson, R. S., & Gregoriou, A. (2015). Calculating and comparing security returns is harder than you think: A comparison between logarithmic and simple returns. *International Review of Financial Analysis, 38*, 151-162.

IMAA. (2025). *M&A Statistics.* Institute for Mergers, Acqusitions & Alliances.

Jabareen, Y. R. (2009). Building a Conceptual Framework: Philosophy, Definitions, and Procedure. *International Journal of Qualitative Methods, 8*(4), 49-62.

Jarque, C. M., & Bera, A. K. (1980). Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Economics Letter, 6*(3), 255-259.

Jarrell, G. A., & Poulsen, A. B. (1989). The Returns to Acquiring Firms in Tender Offers: Evidence from Three Decades. *Financial Management, 18*(3), 12-19.

Jenner, M. H., Masulis, R. W., & Swan, P. L. (2016). Do Wealth Creating Mergers and Acquisitions Really Hurt Bidder Shareholders? *FIRN Research Paper.*

Jiang, J. (2019). An Empirical Study on M&A Performance: Evidence from Horizontal Mergers and Acquisitions in the United States. *Open Journal of Business and Management, 7*, 976-997.

Kaplan, S. N., & Strömberg, P. (2009). Leveraged Buyouts and Private Equity. *Journal of Economic Perspectives, 23*(1), 121-146.

Kendall, M. G., & Hill, A. B. (1953). The Analysis of Economic Time-Series-Part I: Prices. *Journal of the Royal Statistical Society A, 116*(1), 11-34.

Keown, A. J., & Pinkerton, J. M. (1981). Merger Announcements and Insider Trading Activity: An Empirical Investigation. *The Journal of Finance, 36*(4), 855-869.

Kim. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Journal of Endodontics and Restorative Dentistry, 38*(1), 52-54.

Kim, E. H., & Singal, V. (1993). Mergers and Market Power: Evidence from the Airline Industry. *The American Economic Review, 83*(3), 549-569.

Kline, R. B. (2016). *Principles and Practice of Structural Equation Modeling (4th Edition).* Guilford Press.

Kohers, N., & Kohers, T. (2000). The Value Creation Potential of High-Tech Mergers. *Financial Analysts Journal, 56*(3), 40-50.

Kolari, J. W., & Pynnönen, S. (2010). Event Study Testing with Cross-sectional Correlation of Abnormal Returns. *The Review of Financial Studies, 23*(11), 3996-4025.

Kothari, S., & Warner, J. B. (2007). Chapter 1 - Econometrics of Event Studies. *Handbook of Empirical Corporate Finance*, 3-36.

Krishnan, H. A., Miller, A., & Judge, W. Q. (1997). Diversification and Top Management Team Complementarity: Is Performance Improved by Merging Similar or Dissimilar Teams? *Strategic Management Journal, 18*(5), 361-374.

Kuipers, D. R., Miller, D. P., & Patel, A. (2009). The legal environment and corporate valuation: Evidence from cross-border takeovers. *International Review of Economics & Finance, 18*(4), 552-567.

Lang, L., Stulz, R., & Walkling, R. A. (1989). Managerial performance, Tobin's Q, and the gains from successful tender offers. *Journal of Financial Economics, 24*(1), 137-154.

Langetieg, T. C. (1978). An application of a three-factor performance index to measure stockholder gains from merger. *Journal of Financial Economics, 6*(4), 365-383.

Larsson, R., & Finkelstein, S. (1999). Integrating Strategic, Organizational, and Human Resource Perspectives on Mergers and Acquisitions: A Case Survey of Synergy Realization. *Organization Science, 10*(1), 1-26.

Lewellen, W. G. (1971). A Pure Financial Rationale For The Conglomerate Merger. *The Journal of Finance, 26*(2), 521-537.

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *The Review of Economics and Statistics, 47*(1), 13-37.

Linton, O. (2019). *Financial Econometrics: Models and Methods.* Cambridge University Press.

Lo, A. W., & MacKinlay, A. C. (1988). Stock Market Prices do not Follow Random Walks: Evidence from a Simple Specification Test. *The Review of Financial Studies, 1*(1), 41-66.

LOC. (2025). *Standard Industrial Classification Code (SIC Code)*. Library of Congress.

MacKinlay, A. C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature, 35*(1), 13-39.

MacKinnon, J. G., & White, H. (1985). Some heteroskedasticity-consistent covariance matrix estimators with improved finite sample properties. *Journal of Econometrics, 29*(3), 305-325.

Makri, M., Hitt, M. A., & Lane, P. J. (2010). Complementary technologies, knowledge relatedness, and invention outcomes in high technology mergers and acquisitions. *Strategic management journal, 31*(6), 602-628.

Malkiel, B. G. (2003). The Efficient Market Hypothesis and Its Critics. *Journal of Economic Perspectives, 17*(1), 59-82.

Maquieira, C. P., Megginson, W. L., & Nail, L. (1998). Wealth creation versus wealth redistributions in pure stock-for-stock mergers. *Journal of Financial Economics, 48*(1), 3-33.

Mariana, V. (2012). Features And Characteristics Of Mergers And Acquisitions Waves - Overview And The European Experience. *Annals of Faculty of Economics, 1*(1), 596-610.

Markie, P. (2004). Rationalism vs. Empiricism. *Stanford Encyclopedia of Philosophy Archive*.

Martynova, M., & Renneboog, L. (2006). Mergers and Acquisitions in Europe. *ECGI - Finance Working Paper*.

Martynova, M., & Renneboog, L. (2011). The Performance of the European Market for Corporate Control: Evidence from the Fifth Takeover Wave. *European Financial Management, 17*(2), 208-259.

Mateev, M., & Andonov, K. (2018). Do European bidders pay more in cross-border than in domestic acquisitions? New evidence from Continental Europe and the UK. *Research in International Business and Finance, 45*, 529-556.

Maxwell, J. A. (1996). *Qualitative Research Design: An Interactive Approach.* Sage Publications, Inc.

McWilliams, A., & Siegel, D. (1997). Event Studies In Management Research: Theoretical And Empirical Issues. *Academy of Management Journal, 40*(3), 626-657.

Meier, J.-M., & Servaes, H. (2014). Distressed Acquisitions. *CEPR Discussion Paper*.

Melgar, L., Lynch, D. J., & Shapiro, L. (2022, December 27). *See just how bad a year it was for your retirement account — and why*. The Washington Post.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook.* Sage Publications, Inc.

Miller, E. M. (1977). Risk, Uncertainty, and Divergence of Opinion. *The Journal of Finance, 32*(4), 1151-1168.

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia, 22*(1), 67-72.

Mitchell, M. L., & Mulherin, J. H. (1996). The impact of industry shocks on takeover and restructuring activity. *Journal of Financial Economics, 41*(2), 193-229.

Mossin, J. (1966). Equilibrium in a Capital Asset Market. *Econometrica, 34*(4), 768-783.

MSCI. (2025). *MSCI Europe Index (USD).* Morgan Stanley Capital International.

Mulherin, J., & Boone, A. L. (2000). Comparing acquisitions and divestitures. *Journal of Corporate Finance, 6*(2), 117-139.

Müller, S. (2024). *Return Calculation*. Event Study.

Nelson, R. L. (1959). *Merger Movements in American Industry, 1895-1956*. Princeton University Press.

Neumann, J. V., & Morgenstern, O. (1944). *Theory of Games and Economic Behavior*. Princeton University Press.

Panzar, J. C., & Willig, R. D. (1981). Economies of Scope. *The American Economic Review, 71*(2), 268-272.

Park, Y. S., Konge, L., & Artino, A. R. (2020). The Positivism Paradigm of Research. *Academic Medicine, 95*(5), 690-694.

Peterson, P. P. (1989). Event Studies: A Review of Issues and Methodology. *Quarterly Journal of Business and Economics, 28*(3), 33-66.

Popper, K. R. (1959). *The logic of scientific discovery*. Hutchinson & Co.

Ramsey, J. B. (1969). Tests for Specification Errors in Classical Linear Least-Squares Regression Analysis. *Journal of the Royal Statistical Society Series B, 31*(2), 350-371.

Rao-Nicholson, R., & Salaber, J. (2016). Impact of the Financial Crisis on Cross-Border Mergers and Acquisitions and Concentration in the Global Banking Industry. *Thunderbird International Business Review, 58*(2), 161-173.

Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers. *The Journal of Business, 59*(2), 197-216.

Rose, C., Sørheim, D., & Lerkerød, M. (2017). In search of value drivers in mergers and acquisitions: The Nordic evidence. *International Journal of Business Science and Applied Management, 12*(1), 1-28.

Rosenbaum, J., & Pearl, J. (2021). *Investment Banking - Valuation, LBOs, M&A, and IPOs*. New Jersey: John Wiley & Sons Inc.

Ross, S. A. (1973). The Economic Theory of Agency: The Principal's Problem. *The American Economic Review, 63*(2), 134-139.

Ross, S. A. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory, 13*(3), 341-360.

Rumelt, R. P. (1982). Diversification strategy and profitability. *Strategic Management Journal, 3*(4), 359-369.

Samuelson, P. A. (1965). Proof That Properly Anticipated Prices Fluctuate Randomly. *Industrial Management Review, 6*(2), 41-49.

Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research Methods for Business Students*. Pearson.

Schweiger, D. M., & Goulet, P. K. (2000). Integrating mergers and acquisitions: An international research review. *Advances in Mergers and Acquisitions, 1*, 61-91.

Serra, A. P. (2004). Event Study Tests: A Brief Survey. *Gestão.Org-Revista Electrónica de Gestão Organizacional, 2*(3), 248-255.

Servaes, H. (1991). Tobin's Q and the Gains from Takeovers. *The Journal of Finance, 46*(1), 409-419.

Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance, 19*(3), 425-442.

Sicherman, N. W., & Pettway, R. H. (1987). Acquisition of Divested Assets and Shareholders' Wealth. *The Journal of Finance, 42*(5), 1261-1273.

Sirower, M. L. (1997). *The Synergy Trap: How Companies Lose the Acquisition Game*. Free Press.

Smith, R. L., & Kim, J.-H. (1994). The Combined Effects of Free Cash Flow and Financial Slack on Bidder and Target Stock Returns. *The Journal of Business, 67*(2), 281-310.

Sorokina, N., Booth, D. E., & Thornton, J. H. (2013). Robust Methods in Event Studies: Empirical Evidence and Theoretical Implications. *Journal of Data Science, 11*(3), 575-606.

Stigler, G. J. (1950). Monopoly and Oligopoly by Merger. *American Economic Review, 40*(2), 23-34.

Strong, N. (1992). Modelling Abnormal Returns: A Review Article. *Journal of Business Finance & Accounting, 19*(4), 533-553.

Sudarsanam, S. (2003). *Creating Value from Mergers and Acquisitions: The Challenges: An Integrated and International Perspective.* Pearson.

Sudarsanam, S. (2010). *Creating Value from Mergers and Acquisitions: The Challenges: An Integrated and International Perspective.* Financial Times / Prentice Hall.

Sudarsanam, S., Holl, P., & Salami, A. (1996). Shareholder Wealth Gains in Mergers: Effect of Synergy and Ownership Structure. *Journal of Business Finance & Accounting, 23*(5-6), 673-698.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using Multivariate Statistics.* Pearson.

Thorsten, F. (2020). End-to-End (E2E) M&A Process Design. *Springer Books*, 1-30.

Travlos, N. G. (1987). Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns. *The Journal of Finance, 42*(4), 943-963.

Treynor, J. (1961). Market Value, Time, and Risk.

Treynor, J. L. (1962). Toward a Theory of Market Value of Risky Assets.

U.S. (1890). *Sherman Anti-Trust Act*. The U.S. National Archives and Records Administration.

Urquhart, M., & Hewson, M. A. (1983). Unemployment continued to rise in 1982 as recession deepened. *Monthly Labor Review*.

Varmaz, A., & Laibner, J. (2016). Announced versus canceled bank mergers and acquisitions. *Journal of Risk Finance, 17*(5), 510-544.

Walker, M. M. (2000). Corporate Takeovers, Strategic Objectives, and Acquiring-Firm Shareholder Wealth. *Financial Management, 29*(1), 53-66.

Wang, C., & Xie, F. (2009). Corporate Governance Transfer and Synergistic Gains from Mergers and Acquisitions. *The Review of Financial Studies, 22*(2), 829-858.

Wanley, J. W., Lane, W. R., & Yang, H. C. (1983). Abnormal Returns to Acquired Firms by Type of Acquisition and Method of Payment. *Financial Management, 12*(3), 16-22.

WFE. (2023). *Full year 2022 Market Highlights Report.* World Federation of Exchanges.

White. (1980). A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica, 48*(4), 817-838.

White, & Case. (2025). *M&A Activity.* White & Case.

Wooldridge, J. (2012). *Introductory Econometrics: A Modern Approach.* Cengage.

Yılmaz, I. S., & Tanyeri, B. (2016). Global Merger and Acquisition (M&A) activity: 1992–2011. *Finance Research Letters, 17*(C), 110-117.

Zollo, M., & Singh, H. (2004). Deliberate learning in corporate acquisitions: post-acquisition strategies and integration capability in U.S. bank mergers. *Strategic Management Journal, 25*(13), 1233-1256.

Aas, K. (2004). To log or not to log: The distribution of asset returns. *Norsk Regnesentral.*

APPENDICES

APPENDIX A: LITERATURE REVIEW

Appendix 1: Literature review - Target

Target							
Author	**Year**	**CAR**	**Significance level**	**Sample size**	**Sample period**	**Event window**	**Characteristics**
Dodd, Ruback	1977	20.6%	*	124	1958 - 1978	[AD]	Successful
Langetieg	1978	10.6%	*	149	1929 - 1969	[-180; +30]	USA
Wansley, Lane, Yang	1983	18.1%	*	203	1970 - 1978	[-5; +5]	Nonconglomerate (Stocks)
Wansley, Lane, Yang	1983	26.1%	*	203	1970 - 1978	[-5; +5]	Conglomerate (Stocks)
Wansley, Lane, Yang	1983	33.7%	*	203	1970 - 1978	[-5; +5]	Nonconglomerate (Cash)
Wansley, Lane, Yang	1983	32.2%	*	203	1970 - 1978	[-5; +5]	Conglomerate (Cash)
Dennis, McConnel	1986	13.7%	**	76	1962 - 1980	[-6; +6]	USA (Stocks)
Bradley, Desai, Kim	1988	31.8%	*	236	1963 - 1984	[-5; +5]	USA
Jarrell, Poulsen	1989	29.1%	*	172	1981 - 1985	[-20; +10]	USA (Tender offer)
Jarrell, Poulsen	1989	29.0%	*	526	1963 - 1986	[-20; +10]	USA (Tender offer)
Lang, Stulz, Walkling	1989	43.4%	***	60	1968 - 1986	[-5; +5]	USA (Unopposed offers)
Lang, Stulz, Walkling	1989	33.4%	***	27	1968 - 1986	[-5; +5]	USA (Opposed offers)
Asquith, Bruner, Mullins	1990	18.0%	***	157	1973 - 1983	[-1; +1]	USA (Public-to-public)
Franks, Harris, Titman	1991	28.0%	***	399	1975 - 1984	[-5; +5]	USA
Franks, Harris, Titman	1991	33.8%	***	399	1975 - 1984	[-5; +5]	USA (Cash)
Franks, Harris, Titman	1991	22.9%	***	399	1975 - 1984	[-5; +5]	USA (Stock)
Franks, Harris, Titman	1991	35.3%	***	399	1975 - 1984	[-5; +5]	USA (Opposed offers)
Franks, Harris, Titman	1991	24.6%	***	399	1975 - 1984	[-5; +5]	USA (Unopposed offers)
Servaes	1991	23.6%	*	704	1972 - 1987	[-1; CD]	USA
Healy, Palepu, Ruback	1992	45.6%	***	50	1979 - 1984	[-5; +5]	USA
Kaplan, Weisbach	1992	26.9%	***	209	1971 - 1982	[-5; +5]	USA
Smith, Kim	1994	30.2%	**	177	1980 - 1986	[-5; +5]	USA (Tender offer)
Smith, Kim	1994	15.8%	**	177	1980 - 1986	[-1; AD]	USA (Tender offer)
Sudarsanam, Holl, Salami	1996	29.2%	***	429	1980 - 1990	[-20; +40]	UK (Public-to-public)
Maquieira, Megginson, Nail	1998	41.7%	*	47	1963 - 1996	[-60; +60]	Conglomerate (Common stock)
Maquieira, Megginson, Nail	1998	38.1%	*	55	1963 - 1996	[-60; +60]	Nonconglomerate (Common stock)
Mulherin, Boone	2000	21.2%	***	376	1990 - 1999	[-1; +1]	USA (Public-to-public)
DeLong	2001	16.6%	*	280	1998 - 1995	[-10; +1]	USA, Banking (State cross-border)
Houston, James, Ryngaert	2001	15.6%	*	27	1985 - 1990	[-4; +1]	USA, Banking, 1985 - 1990
Houston, James, Ryngaert	2001	24.6%	*	37	1991 - 1996	[-4; +1]	USA, Banking, 1991 - 1996
Houston, James, Ryngaert	2001	20.8%	*	64	1985 - 1996	[-4; +1]	USA, Banking, Combined
Andrade, Mitchell, Stafford	2001	16.0%	**	3,668	1973 - 1998	[-1; +1]	USA
Andrade, Mitchell, Stafford	2001	23.8%	**	3,668	1973 - 1998	[-20; CD]	USA
Beitel, Schiereck, Wahrenburg	2004	12.4%	***	98	1985 - 2000	[-1; +1]	Europe, Banking
Beitel, Schiereck, Wahrenburg	2004	14.4%	***	98	1985 - 2000	[-10; +10]	Europe, Banking
Beitel, Schiereck, Wahrenburg	2004	16.0%	***	98	1985 - 2000	[-20; +20]	Europe, Banking
Goergen, Renneboog	2004	9.0%	***	136	1993 - 2000	[-1; AD]	Europe
Goergen, Renneboog	2004	13.0%	***	136	1993 - 2000	[-2; +2]	Europe
Martynova, Renneboog	2006	15.8%	***	760	1993 - 2001	[-5; +5]	Europe
Bris, Cabolis	2008	14.2%	***	506	1989 - 2002	[-1; +1]	OECD Countries (Cross-border)
Bargeron et al.	2008	20.8%	***	236	1980 - 2005	[-5; +5]	USA (Private Equity Buyer)
Bargeron et al.	2008	22.4%	***	453	1980 - 2005	[-5; +5]	USA (Private Buyer)
Bargeron et al.	2008	30.8%	***	1,214	1980 - 2005	[-5; +5]	USA (Public Buyer)
Wang, Xie	2009	21.5%	***	396	1990 - 2004	[-5; +5]	USA
Kuipers, Miller, Patel	2009	29.4%	*	181	1982 - 1991	[-5; +5]	Europe - USA (Cross-border)
Kuipers, Miller, Patel	2009	23.1%	*	181	1982 - 1991	[-1;AD]	Europe - USA (Cross-border)
Martynova, Renneboog	2011	12.5%	*	760	1993 - 2001	[-1; +1]	Europe, 5th Merger Wave (Private & public)
Martynova, Renneboog	2011	15.4%	*	760	1993 - 2001	[-5; +5]	Europe, 5th Merger Wave (Private & public)
Boston Consulting Group	2011	15.5%	***	4,802	1996 - 2010	[-3;+3]	Public-to-public
Dittmar, Li, Nain	2012	28.6%	***	245	1980 - 2007	[-2; +2]	Financial vs corporate acquirers
Dittmar, Li, Nain	2012	28.3%	***	37	1980 - 2007	[-2; +2]	Financial vs corporate acquirers
Alexandridis, Mavrovitis, Travlos	2012	19.5%	*	2,509	1993 - 2007	[-1; +1]	USA
Alexandridis, Mavrovitis, Travlos	2012	27.7%	*	541	1993 - 2007	[-1; +1]	USA (Cash)
Alexandridis, Mavrovitis, Travlos	2012	16.4%	*	1,192	1993 - 2007	[-1; +1]	USA (Stock)
Alexandridis, Mavrovitis, Travlos	2012	18.4%	*	776	1993 - 2007	[-1; +1]	USA (Hybrid)
Alexandridis, Mavrovitis, Travlos	2012	23.3%	*	2,509	1993 - 2007	[-10; +10]	USA
Alexandridis, Mavrovitis, Travlos	2012	31.1%	*	544	1993 - 2007	[-10; +10]	USA (Cash)
Alexandridis, Mavrovitis, Travlos	2012	20.5%	*	1,188	1993 - 2007	[-10; +10]	USA (Stock)
Alexandridis, Mavrovitis, Travlos	2012	22.1%	*	777	1993 - 2007	[-10; +10]	USA (Hybrid)
Shah, Arora	2014	14.6%	**	37	2013	[-10; +10]	Asia
Craninckx, Huyghebaert	2015	8.5%	***	342	1997 - 2007	[-1; +1]	Europe
Arik, Kutan	2015	6.6%	***	1,648	1997 - 2013	[-5; +5]	Emerging markets
Yilmaz, Tanyeri	2016	10.2%	***	18,430	1992 - 2011	[-1; +1]	Global
Varmaz, Laibner	2016	3.8%		34	1995 - 2015	[-10; +10]	Europe, Banks (Cancellation vs. Announced)
Rose, Sørheim, Lerkerød	2017	23.0%	***	71	1995 - 2014	[-10; +10]	Northern Europe
Rose, Sørheim, Lerkerød	2017	22.1%	***	73	1995 - 2014	[-5; +5]	Northern Europe
Rose, Sørheim, Lerkerød	2017	21.0%	***	74	1995 - 2014	[-1; +1]	Northern Europe
Mateev, Andonov	2018	5.1%	***	275	2003 - 2010	[-1; +1]	Europe (Public-to-public)
Mateev, Andonov	2018	7.2%	***	275	2003 - 2010	[-5; +5]	Europe (Public-to-public)
Boston Consulting Group	2018	15.8%	***		1980 - 2017	[-3; +3]	Public-to-public
Boston Consulting Group	2019	14.8%	***	4,509	1980 - 2018	[-3; +3]	Public-to-public
Jiang	2019	23.3%	***	583	1995 - 2005	[-10; +10]	USA (Horizontal mergers)

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
AD = Announcement date.
Source: Author's own creation.

Appendix 2: Literature review - Buyer

Buyer							
Author	**Year**	**CAR**	**Significance level**	**Sample size**	**Sample period**	**Event window**	**Characteristics**
Dodd, Ruback	1977	2.8%	*	124	1958 - 1978	[AD]	USA (Successful mergers)
Dodd, Ruback	1977	0.6%		48	1958 - 1978	[AD]	USA (Canceled mergers)
Langetieg	1978	-2.8%		149	1929 - 1969	[-180; +30]	USA
Dodd	1980	-1.1%	*	60	1970 - 1977	[-1; AD]	USA (Successful mergers)
Dodd	1980	-1.2%	*	66	1970 - 1977	[-1; AD]	USA (Canceled mergers)
Asquith, Bruner, Mullins	1983	3.5%	*	170	1962 - 1979	[-20; +1]	USA (Successful mergers)
Asquith, Bruner, Mullins	1983	0.7%		41	1962 - 1979	[-20; +1]	USA (Canceled mergers)
Eckbo	1983	0.1%		102	1962 - 1978	[-1; +1]	USA (Challenged mergers)
Eckbo	1983	1.2%	*	57	1962 - 1978	[-1; +1]	USA (Unchallenged mergers)
Malatesta	1983	0.9%		256	1969 - 1974	[AD]	USA
Dennis, McConnel	1986	3.2%		90	1962 - 1980	[-6; +6]	USA (Stocks)
Dennis, McConnel	1986	-0.1%		90	1962 - 1980	[-1; AD]	USA (Stocks)
Sicherman, Pettway	1987	4.0%	***	49	1983 - 1985	[-10; +10]	USA (Related industry)
Sicherman, Pettway	1987	0.0%		98	1983 - 1985	[-10; +10]	USA (Non-related industry)
Jarrell, Brickley, Netter	1988	1.1%	*	405	1960 - 1985	[-10; + 5]	USA (Successful tender offers)
Bradley, Desai, Kim	1988	0.8%	*	236	1963 - 1984	[-5; +5]	USA (Public-to-public)
Jarrell, Poulsen	1989	0.7%	*	461	1963 - 1986	[-2; +1]	USA (Tender offer)
Jarrell, Poulsen	1989	0.9%	*	461	1963 - 1986	[-5; +5]	USA (Tender offer)
Lang, Stultz, Walkling	1989	0.8%		60	1968 - 1986	[-5; +5]	USA (Unopposed offers)
Lang, Stultz, Walkling	1989	-1.1%		27	1968 - 1986	[-5; +5]	USA (Opposed offers)
Morck, Shleifer, Vishny	1990	-0.7%		326	1975 - 1987	[-1; +1]	USA
Asquith, Bruner, Mullins	1990	-0.9%	***	343	1973 - 1983	[-1; +1]	USA (Public-to-public)
Franks, Harris, Titman	1991	-1.0%	*	399	1975 - 1984	[-5; +5]	USA
Franks, Harris, Titman	1991	0.8%		399	1975 - 1984	[-5; +5]	USA (Cash)
Franks, Harris, Titman	1991	-3.2%	***	399	1975 - 1984	[-5; +5]	USA (Stock)
Franks, Harris, Titman	1991	-3.5%	***	399	1975 - 1984	[-5; +5]	USA (Opposed offers)
Franks, Harris, Titman	1991	-0.2%		399	1975 - 1984	[-5; +5]	USA (Unopposed offers)
Servaes	1991	-1.1%	*	384	1972 - 1987	[-1; Close]	USA
Healy, Palepu, Ruback	1992	-2.2%	*	50	1979 - 1984	[-5; +5]	USA
Kaplan, Weisbach	1992	-1.5%	***	271	1971 - 1982	[-5; +5]	USA
Smith, Kim	1994	0.5%		177	1980 - 1986	[-5; +5]	USA (Tender offer)
Smith, Kim	1994	-0.2%	**	177	1980 - 1986	[-1; AD]	USA (Tender offer)
Sudarsanam, Holl, Salami	1996	-4.0%	***	429	1980 - 1990	[-20; +40]	UK (Public-to-public)
Banerjee, Owers	1996	1.7%		42	1978 - 1987	[-1; AD]	USA (Hostile bidders)
Banerjee, Owers	1996	-3.4%	**	57	1978 - 1987	[-1; AD]	USA (White knights)
Maquieira, Megginson, Nail	1998	-4.8%		47	1963 - 1996	[-60; +60]	Conglomerate (Common stock)
Maquieira, Megginson, Nail	1998	6.1%	*	55	1963 - 1996	[-60; +60]	Nonconglomerate (Common stock)
Mulherin, Boone	2000	-0.4%	***	281	1990 - 1999	[-1; +1]	USA (Public-to-public)
Walker	2000	-0.8%	*	278	1980 - 1996	[-2; +2]	USA
Walker	2000	0.0%	*	129	1980 - 1996	[-2; +2]	USA (Related industry)
Walker	2000	-1.6%	*	149	1980 - 1996	[-2; +2]	USA (Non-related industry)
Walker	2000	0.5%	*	159	1980 - 1996	[-2; +2]	USA (Cash)
Walker	2000	-3.3%	*	80	1980 - 1996	[-2; +2]	USA (Stock)
Kohers, Kohers	2000	1.3%	***	1,634	1987 - 1996	[AD; +1]	USA, High-Tech
Kohers, Kohers	2000	1.4%	***	961	1987 - 1996	[AD; +1]	USA, High-Tech (Cash)
Kohers, Kohers	2000	1.1%	***	673	1987 - 1996	[AD; +1]	USA, High-Tech (Stock)
DeLong	2001	-1.7%	*	280	1988 - 1995	[-10; +1]	USA, Banking (State cross-border)
Houston, James, Ryngaert	2001	-4.6%	***	27	1985 - 1990	[-4; +1]	USA, Banking, 1985 - 1990
Houston, James, Ryngaert	2001	-2.6%	**	37	1991 - 1996	[-4; +1]	USA, Banking, 1991 - 1996
Houston, James, Ryngaert	2001	-3.5%	***	64	1985 - 1996	[-4; +1]	USA, Banking, Combined
Andrade, Mitchell, Stafford	2001	-0.7%		3,668	1973 - 1998	[-1; +1]	USA
Andrade, Mitchell, Stafford	2001	-3.8%		3,668	1973 - 1998	[-20; Close]	USA
Kohers, Kohers	2001	0.9%	***	304	1984 - 1995	[AD; +1]	USA, High-Tech
Fuller, Netter, Stegemoller	2002	1.8%	*	3,135	1990 - 2000	[-2; +2]	USA, Non-utility/financial
Fuller, Netter, Stegemoller	2002	-1.0%	**	456	1990 - 2000	[-2; +2]	USA, Non-utility/financial (Public targets)
Fuller, Netter, Stegemoller	2002	2.1%	*	2,060	1990 - 2000	[-2; +2]	USA, Non-utility/financial (Private targets)
Ghosh	2004	-3.1%	***	1,190	1985 - 1999	[-5; CD]	USA
Beitel, Schiereck, Wahrenburg	2004	0.0%		98	1985 - 2000	[-1; +1]	Europe, Banking
Beitel, Schiereck, Wahrenburg	2004	0.2%		98	1985 - 2000	[-10; +10]	Europe, Banking
Beitel, Schiereck, Wahrenburg	2004	-0.2%		98	1985 - 2000	[-20; +20]	Europe, Banking
Moeller, Schlingemann, Stulz	2004	1.1%	*	12,023	1980 - 2001	[-1; +1]	USA
Moeller, Schlingemann, Stulz	2004	-1.0%	*	2,642	1980 - 2001	[-1; +1]	USA (Public targets)
Moeller, Schlingemann, Stulz	2004	1.5%	*	5,583	1980 - 2001	[-1; +1]	USA (Private targets)
Goergen, Renneboog	2004	0.7%	***	142	1993 - 2000	[-1; AD]	Europe
Goergen, Renneboog	2004	1.2%	***	142	1993 - 2000	[-2; +2]	Europe
Martynova, Renneboog	2006	0.8%	***	2,109	1993 - 2001	[-5; +5]	Europe
Bradley, Sundaram	2006	-0.7%	***	12,476	1990 - 2000	[-2; +2]	USA (Public targets)
Bradley, Sundaram	2006	2.0%	***	12,476	1990 - 2000	[-2; +2]	USA (Non-public targets)
Capron, Shen	2007	-0.7%		101	1988 -1992	[-20; +10]	USA (Public targets)
Capron, Shen	2007	3.6%	***	101	1988 -1992	[-20; +10]	USA (Non-public targets)
Kuipers, Miller, Patel	2009	-1.3%	*	181	1982 - 1991	[-5; +5]	Europe - USA (Cross-border)
Kuipers, Miller, Patel	2009	-0.9%	*	181	1982 - 1991	[-1; AD]	Europe - USA (Cross-border)
Martynova, Renneboog	2011	0.7%	*	2,109	1993 - 2001	[-1; +1]	Europe (Private & public)
Martynova, Renneboog	2011	0.8%	*	2,109	1993 - 2001	[-5; +5]	Europe (Private & public)
Boston Consulting Group	2011	-1.0%		5,662	1996 - 2010	[-3; +3]	Public-to-public
Alexandridis, Mavrovitis, Travlos	2012	-1.5%	*	3,206	1993 - 2007	[-1; +1]	USA
Alexandridis, Mavrovitis, Travlos	2012	0.7%	*	681	1993 - 2007	[-1; +1]	USA (Cash)
Alexandridis, Mavrovitis, Travlos	2012	-2.4%	*	1,535	1993 - 2007	[-1; +1]	USA (Stock)

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Alexandridis, Mavrovitis, Travlos	2012	-1.6%	*	990	1993 - 2007	[-1; +1]	USA (Hybrid)
Alexandridis, Mavrovitis, Travlos	2012	-2.1%	*	3,206	1993 - 2007	[-10; +10]	USA
Alexandridis, Mavrovitis, Travlos	2012	0.3%		681	1993 - 2007	[-10; +10]	USA (Cash)
Alexandridis, Mavrovitis, Travlos	2012	-2.8%	*	1,535	1993 - 2007	[-10; +10]	USA (Stock)
Alexandridis, Mavrovitis, Travlos	2012	-2.6%	*	990	1993 - 2007	[-10; +10]	USA (Hybrid)
Dittmar, Li, Nain	2012	1.0%	***	133	1980 - 2007	[-2; +2]	USA (Financial competition)
Dittmar, Li, Nain	2012	-0.1%	***	133	1980 - 2007	[-2; +2]	USA (Financial corporate competition)
Beltratti, Paladino	2013	0.1%	*	139	2007 - 2010	[-10; +10]	Europe, Banking (Time of crisis)
Shah, Arora	2014	2.5%		37	2013	[-10; +10]	Asia
Yilmaz, Tanyeri	2016	1.4%	***	217,781	1992 - 2011	[-1; +1]	Global (Non-filtered transactions)
Yilmaz, Tanyeri	2016	0.0%		18,430	1992 - 2011	[-1; +1]	Global (Filtered transactions)
Jenner, Masulis, Swan	2016	-3.4%		1,800	1978 - 2012	[-11; +11]	USA (PE-backed)
Jenner, Masulis, Swan	2016	-14.4%	*	1,799	1978 - 2012	[-2; +120]	USA (PE-backed)
Varmaz, Laibner	2016	-0.8%	*	468	1995 - 2015	[-10; +10]	Europe, Banks (Cancellation vs. Announced)
Rao-Nicholson, Salaber	2016	0.9%	**	1,587	2004 - 2009	[-5; AD]	Europe (Pre-crisis)
Rao-Nicholson, Salaber	2016	1.6%	**	658	2009 - 2012	[-5; AD]	Europe (Post-crisis)
Alexandridis, Antypas, Travlos	2017	-1.1%	***	4,194	1990 - 2009	[-1; +1]	USA (Public-to-public)
Alexandridis, Antypas, Travlos	2017	1.1%	***	579	2010 - 2015	[-1; +1]	USA (Public-to-public)
Rose, Sørheim, Lerkerød	2017	-1.3%		71	1995 - 2014	[-10; +10]	Northern Europe
Rose, Sørheim, Lerkerød	2017	0.6%		73	1995 - 2014	[-5; +5]	Northern Europe
Rose, Sørheim, Lerkerød	2017	1.0%	*	74	1995 - 2014	[-1; +1]	Northern Europe
Boston Consulting Group	2018	-0.8%		4,509	1990 - 2017	[-3; +3]	Public-to-public
Mateev, Andonov	2018	0.0%		275	2003 - 2010	[-1; +1]	Europe (Public-to-public)
Mateev, Andonov	2018	-0.4%		275	2003 - 2010	[-5; +5]	Europe (Public-to-public)
Boston Consulting Group	2019	-1.1%			1990 - 2018	[-3; +3]	Public-to-public
Andriuskevicius, Karolis	2019	1.4%	***	3,040	2004 - 2017	[+2; +30]	EU, Cross-border
Jiang	2019	-1.0%		583	1995 - 2005	[-10; +10]	USA (Horizontal mergers)

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
AD = Announcement date, CD = Completion date.
Source: Author's own creation.

Appendix 3: Literature review - Combined

Combined							
Author	**Year**	**CAR**	**Significance level**	**Sample size**	**Sample period**	**Event window**	**Characteristics**
Lang, Stultz, Walkling	1989	11.3%	***	87	1968 - 1986	[-5; +5]	USA
Frank, Harris, Titman	1991	3.9%	***	399	1975 - 1984	[-5; +5]	USA
Servaes	1991	3.7%	***	384	1972 - 1987	[-1; Close]	USA
Healy, Palepu, Rubcak	1992	9.1%	***	50	1979 - 1984	[-5; +5]	USA
Kaplan, Weisbach	1992	3.7%	***	209	1971 - 1982	[-5; +5]	USA
Smith, Kim	1994	8.9%	**	177	1980 - 1986	[-5; +5]	USA (Tender offer)
Smith, Kim	1994	3.8%	**	177	1980 - 1986	[-1; AD]	USA (Tender offer)
Mulherin, Boone	2000	3.6%	***	281	1990 - 1999	[-1; +1]	USA (Public-to-public)
Houston, James, Ryngaert	2001	0.1%		27	1985 - 1990	[-4; +1]	USA, Banking
Houston, James, Ryngaert	2001	3.1%	**	37	1991 - 1996	[-4; +1]	USA, Banking
Houston, James, Ryngaert	2001	1.9%	**	64	1985 - 1996	[-4; +1]	USA, Banking
Fan, Goyal	2002	1.9%	***	2,162	1962 - 1996	[-1; +1]	USA
Fan, Goyal	2002	2.4%	***	2,162	1962 - 1996	[-10; +10]	USA
Beitel, Schiereck, Wahrenburg	2004	1.4%	***	98	1985 - 2000	[-1; +1]	Europe, Banking
Beitel, Schiereck, Wahrenburg	2004	1.4%	**	98	1985 - 2000	[-10; +10]	Europe, Banking
Beitel, Schiereck, Wahrenburg	2004	1.3%	*	98	1985 - 2000	[-20; +20]	Europe, Banking
Kuipers, Miller, Patel	2009	3.8%	***	181	1982 - 1991	[-5; +5]	Europe - USA (Cross-border)
Kuipers, Miller, Patel	2009	3.0%	*	181	1982 - 1991	[-1; AD]	Europe - USA (Cross-border)
Alexandridis, Mavrovitis, Travlos	2012	1.1%	*	2,509	1993 - 2007	[-1; +1]	USA
Alexandridis, Mavrovitis, Travlos	2012	2.6%	*	551	1993 - 2007	[-1; +1]	USA (Cash)
Alexandridis, Mavrovitis, Travlos	2012	0.1%		1,186	1993 - 2007	[-1; +1]	USA (Stock)
Alexandridis, Mavrovitis, Travlos	2012	1.6%	*	772	1993 - 2007	[-1; +1]	USA (Hybrid)
Alexandridis, Mavrovitis, Travlos	2012	1.1%	*	2,509	1993 - 2007	[-10; +10]	USA
Alexandridis, Mavrovitis, Travlos	2012	2.9%	*	553	1993 - 2007	[-10; +10]	USA (Cash)
Alexandridis, Mavrovitis, Travlos	2012	-0.2%		1,181	1993 - 2007	[-10; +10]	USA (Stock)
Alexandridis, Mavrovitis, Travlos	2012	1.9%	*	775	1993 - 2007	[-10; +10]	USA (Hybrid)
Mateev, Andonov	2018	2.9%	***	275	2003 - 2010	[-1; +1]	Europe (Public-to-public)
Mateev, Andonov	2018	2.9%	***	275	2003 - 2010	[-5; +5]	Europe (Public-to-public)
Meier, Servaes	2019	1.3%	***	4,571	1982 - 2012	[-1; +1]	USA

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
AD = Announcement date
Source: Author's own creation.

APPENDIX B: DATA

Appendix 4: Overview of indices

Country	Ticker	Index
Austria	^MXAT	MSCI Austria Index
Belgium	^MXBE	MSCI Belgium Index
Bulgaria	^SOFIX	SOFIX Index
Croatia	^CBX	Crobex Index
Cyprus	^GEN-IN-C	CSE General Market Index
Czechia	^M3CZ	MSCI Czech Republic Index
Denmark	^MXDK	MSCI Denmark Index
Finland	^MXFI	MSCI Finland Index
France	^MXFR	MSCI France Index
Germany	^M3DE	MSCI Germany Index
Greece	^MXGR	MSCI Greece Index
Greenland	^MXDK	MSCI Denmark Index
Hungary	^M3HU	MSCI Hungary Index
Iceland	^OMXIPI	OMX Iceland All Share Index
Ireland	^MXIE	MSCI Ireland Index
Italy	^MXIT	MSCI Italy Index
Lithuania	^OMXVGI	Lithuania OMXV Index
Luxembourg	^LUXX	LuxX Index
Malta	^MSEINDEX	Malta Stock Exchange Index
Netherlands	^MXNL	MSCI Netherlands Index
Norway	^MXNO	MSCI Norway Index
Poland	^M3PL	MSCI Poland Index
Portugal	^MXPT	MSCI Portugal Index
Serbia	^BELEX15	Serbia Belex 15 Index
Slovakia	^SAX	Slovak Share Index
Slovenia	^SBITOP	Slovenian Blue Chip Index
Spain	^MXES	MSCI Spain Index
Sweden	^MXSE	MSCI Sweden Index
Switzerland	^MXCH	MSCI Switzerland Index
Türkiye	^XU100	Istanbul Stock Exchange National 100 Index
Ukraine	^PFTS	PFTS Index
United Kingdom	^MXGB	MSCI United Kingdom Index
Europe	^MXEU	MSCI Europe Index

Source: Author's own creation based on data from S&P Capital IQ.

Appendix 5: Descriptive statistics - Year

	Transactions	
Year	**N**	**%**
2000	16	2%
2001	17	2%
2002	16	2%
2003	28	4%
2004	35	4%
2005	52	7%
2006	51	6%
2007	58	7%
2008	32	4%
2009	24	3%
2010	26	3%
2011	34	4%
2012	28	4%
2013	26	3%
2014	27	3%
2015	42	5%
2016	24	3%
2017	31	4%
2018	30	4%
2019	28	4%
2020	35	4%
2021	26	3%
2022	29	4%
2023	36	5%
2024	41	5%
Total	**792**	**100%**

Source: Authors' own creation.

Appendix 6: Descriptive statistics - Dummy variables

	Target		Buyer	
Dummy Variable	**N**	**%**	**N**	**%**
Distressed	228	29%	211	27%
Grey Zone	149	19%	174	22%
Safe (Reference)	236	30%	252	32%
NA	179	23%	155	20%
Total	**792**	**100%**	**792**	**100%**
Large	216	27%	216	27%
Medium	284	36%	284	36%
Small (Reference)	261	33%	261	33%
NA	31	4%	31	4%
Total	**792**	**100%**	**792**	**100%**
Announced	15	2%	15	2%
Terminated/Withdrawn	136	17%	136	17%
Completed (Reference)	641	81%	641	81%
Total	**792**	**100%**	**792**	**100%**
Friendly to hostile	12	2%	12	2%
Hostile	26	3%	26	3%
Friendly (Reference)	754	95%	754	95%
Total	**792**	**100%**	**792**	**100%**
Hybrid	152	19%	152	19%
Cash (Reference)	403	51%	403	51%
Stock	237	30%	237	30%
Total	**792**	**100%**	**792**	**100%**
Sponsor backed	522	66%	522	66%
Corporate buyer (Reference)	270	34%	270	34%
Total	**792**	**100%**	**792**	**100%**
Related industry	618	78%	618	78%
Non-related industry (Reference)	174	22%	174	22%
Total	**792**	**100%**	**792**	**100%**
Cross-border	275	35%	275	35%
Domestic (Reference)	517	65%	517	65%
Total	**792**	**100%**	**792**	**100%**
Crisis	50	6%	50	6%
No crisis (Reference)	742	94%	742	94%
Total	**792**	**100%**	**792**	**100%**

Reference refers to the respective reference categories used in the multiple linear regression analysis.
Source: Author's own creation.

Appendix 7: Overview of transactions

Target	Buyer	Date
BT Communications Group Limited	Newgate Telecommunications Limited	11-01-2000
Gildemeister Italiana S.p.A.	Gildemeister AG	31-01-2000
British-Borneo Oil & Gas Plc	Eni S.p.A.	29-03-2000
Banco Pinto & Sotto Mayor, S.A.	Banco Comercial Português, S.A.	31-03-2000
Sylea S.A.	Valeo SA	02-05-2000
Navia ASA	Kongsberg Gruppen ASA	03-05-2000
Icopal A/S	Trelleborg AB (publ)	05-05-2000
Endemol Group B.V.	Telefónica, S.A.	14-07-2000
Tele2 Europe SA	NetCom AB	24-07-2000
Saatchi & Saatchi Group Ltd	Publicis Groupe S.A.	07-09-2000
British Polythene Industries plc	Macfarlane Group PLC	21-09-2000
Éditions Flammarion SA	Holding di Partecipazioni Industriali S.p.A.	19-10-2000
Axxicon Moulds Eindhoven B.V.	Mikron Holding AG	30-10-2000
Lusomundo SGPS, S.A.	PT-Multimedia Servicos de Telecomunicacoes e Multimedia, SGPS S.A.	02-11-2000
Axantis Holding AG	EMS-CHEMIE HOLDING AG	04-12-2000
Lasmo plc	Eni S.p.A.	21-12-2000
PC Lan ASA	Scribona AB (publ)	05-02-2001
ForeningsSparbanken AB	Skandinaviska Enskilda Banken AB (publ)	22-02-2001
Groupe Bruxelles Lambert SA	Electrafina SA	13-03-2001
Soon Communications plc	Elisa Communications Oyj	21-03-2001
Dresdner Bank AG	Allianz AG	01-04-2001
Midtbank AS	Svenska Handelsbanken AB (publ)	11-04-2001
Storebrand ASA	Sampo Oyj	21-05-2001
Çimentas Izmir Çimento Fabrikasi Türk A.S.	Cementir Holding S.p.A.	13-06-2001
Vseobecna uverova banka, a.s.	IntesaBCI S.p.A.	15-06-2001
Komercní banka, a.s.	Société Générale Société anonyme	28-06-2001
Nedgraphics Holding NV	Blue Fox Enterprises NV	03-07-2001
TBI plc	Vinci SA	14-08-2001
BLD Property Holdings Limited	British Land Company PLC	16-08-2001
Ångpanneföreningen AB	Sweco AB (publ)	24-09-2001
voestalpine Polynorm BV	Voestalpine AG	22-10-2001
IPBM SA, Prior to Change in Line of Business	IDI	17-12-2001
ETBA S.A. Hellenic Industrial Development Bank	Piraeus Bank S.A.	19-12-2001
Innogy Holdings plc	RWE Aktiengesellschaft	22-03-2002
Sonera Oyj	Telia AB	26-03-2002
Volos Technical Co. S.A.	Elliniki Technodomiki Teb AE	17-04-2002
Stollwerck AG	Barry Callebaut AG	26-04-2002
Energiedienst AG	Kraftwerk Laufenburg AG	17-05-2002
Photo Hall SA	Smartphoto Group NV	06-06-2002
Hollandsche Beton Groep nv	Koninklijke BAM Groep nv	11-06-2002
Tarm Bank	Ringkjøbing Landbobank A/S	27-06-2002
Bouygues Offshore S.A.	Saipem SpA	09-07-2002
OnBanca S.p.A.	UniCredito Italiano S.p.A.	16-07-2002
Zeag Zementwerk Lauffen - Elektrizitatswerk Heilbronn AG	EnBW Energie Baden-Württemberg AG	05-08-2002
Lek Pharmaceutical and Chemical Company d.d.	Novartis AG	29-08-2002
OTI Energy AG	Deutsche Effecten- und Wechsel-Beteiligungsgesellschaft AG	14-10-2002
Spen Hill Properties Limited	Tesco PLC	30-10-2002
Utfors AB	Telenor ASA	18-11-2002
Reti Bancarie Holding SpA	Banca Popolare Italiana Scarl	07-12-2002
Raisio Diagnostics Ltd	Raisio Group plc	13-02-2003
Inter-EuróPa Bank Zrt.	SanPaolo IMI S.p.A.	25-02-2003
IPI S.p.A	Risanamento SpA	28-02-2003
Iberdrola, S.A.	Gas Natural SDG, S.A.	10-03-2003
Centerpulse Ltd.	Smith & Nephew plc	20-03-2003
PSB IT-Service GmbH	Bechtle AG	25-03-2003
cycos AG	Siemens Aktiengesellschaft	01-04-2003
Immotrust Anlagen AG	CA Immobilien Anlagen AG	10-04-2003
Kipa Kitle Pazarlama Ticaret ve Gida Sanayi AS	Tesco PLC	17-04-2003
Banca Popolare di Cremona S.p.A.	Banca Popolare Italiana Scarl	18-04-2003
Afrifina NV	Brederode SA	02-05-2003
Dampskibsselskabet AF 1912 AS	A.P. Møller - Mærsk A/S	06-05-2003
Infineon Technologies SensoNor AS	Infineon Technologies AG	19-05-2003
Petrola Hellas S.A.	Hellenic Petroleum S.A.	30-05-2003
Alpha Investments AE	Alpha Services and Holdings S.A.	05-06-2003
Cordiant Communications Group Ltd.	WPP 2012 plc	19-06-2003
Hacas Group Plc	Tribal Group plc	26-06-2003
GB Railways Group plc	FirstGroup plc	16-07-2003
EIC Electricity SA	Alpine Select AG	31-07-2003
Groupe Gascogne SA	Electricité et Eaux de Madagascar SA	28-08-2003
Novo Group Oyj	Sysopen Oyj	25-09-2003
KLM Royal Dutch Airlines	Air France SA	30-09-2003
Sophia S.A.	Société Foncière Lyonnaise	30-09-2003
Microgen Solutions plc	Microgen plc	10-10-2003
Fastighets AB Tornet	Ratos AB (publ)	20-10-2003
Dimension AB	Proact IT Group AB (publ)	24-11-2003
Somague - Sociedade Gestora de Participações Sociais S.A.	Sacyr Vallehermoso, S.A.	11-12-2003
NEG Micon AS	Vestas Wind Systems A/S	12-12-2003
Grosvenor Land Holdings Plc	Terrace Hill Group plc	14-01-2004
Transcomm plc	BT Group plc	23-01-2004
CD Bramall plc	Pendragon PLC	23-01-2004
Aventis S.A.	Sanofi-Synthelabo	26-01-2004
Rue Impériale	Eurazeo SA	25-02-2004
REG Real Estate Group	PSP Swiss Property AG	05-04-2004
Custos AB	Investment AB Öresund (publ)	26-04-2004
UNIPETROL, a.s.	Polski Koncern Naftowy ORLEN Spólka Akcyjna	28-04-2004
Bell Group plc	Securitas AB (publ)	06-05-2004
CELLTECH GROUP PLC	UCB SA	18-05-2004
GrønlandsBANKEN A/S	Vestjysk Bank A/S	20-05-2004
Nedcon Groep N.V.	Voestalpine AG	21-05-2004
Alvis plc	BAE Systems plc	03-06-2004
Société Foncière Lyonnaise	Inmobiliaria Colonial SA	09-06-2004
Delta Singular SA	Alpha Services and Holdings S.A.	10-06-2004
Laboratoires Dolisos SA	Boiron SA	24-06-2004
Fabege AB	Wihlborgs Fastigheter AB (publ)	19-07-2004
Metal Industry of Arcadia C. Rokas SA	Elliniki Technodomiki Teb AE	24-07-2004
Santander UK Group Holdings plc	Banco Santander Central Hispano SA	26-07-2004
Heiton Group Public Limited Company	Grafton Group plc	07-08-2004
AFA Systems plc	Microgen plc	13-08-2004
Johnston Group PLC	Anglo American plc	24-08-2004
TDC Nordic AB	Tele2 AB (publ)	23-09-2004
Photo-Scan plc	Siemens Aktiengesellschaft	23-09-2004
Gorthon Lines AB	B&N Nordsjofrakt AB	07-10-2004
Glenmorangie Public Limited Company	LVMH Moët Hennessy - Louis Vuitton, Société Européenne	22-10-2004
Chips Ab	Orkla ASA	08-11-2004
OTP banka d.d.	OTP Bank Nyrt.	24-11-2004
Romsdals Fellesbank Asa	SpareBank 1 SMN	24-11-2004
Burtonwood PLC	Wolverhampton & Dudley Breweries plc	03-12-2004
Maag Holding AG	Swiss Prime Site AG	05-12-2004
London Stock Exchange Plc	Deutsche Börse AG	13-12-2004
Carl Zeiss Meditec SAS	Carl Zeiss Meditec AG	17-12-2004
Almanij NV	KBC Bank and Insurance Holding Company NV	23-12-2004
Aluminium of Greece S.A.	Mytilineos Holdings S.A.	29-12-2004
Aggregate Industries plc	Holcim Ltd.	20-01-2005
Altedia SA	Adecco S.A.	25-01-2005
Türk Ekonomi Bankasi Anonim Sirketi	BNP Paribas SA	10-02-2005
Highbury House Communications plc	Future plc	14-02-2005
ANF Immobilier	Eurazeo SA	01-03-2005
City North Group plc	Grainger Trust plc	22-03-2005
Swiss International Air Lines AG	Deutsche Lufthansa AG	22-03-2005
Intramet SA	Intrakat Société Anonyme Technical and Energy Projects	24-03-2005
Banca Nazionale del Lavoro SpA	Banco Bilbao Vizcaya Argentaria, S.A.	30-03-2005
Attentiv Systems Group plc	TietoEnator Oyj	05-04-2005
Cesky Telecom, A.S.	Telefónica, S.A.	06-04-2005
Hellenic Investment Co. SA	Piraeus Bank S.A.	07-04-2005
Finaxa SA	AXA SA	18-04-2005
Allied Domecq PLC	Pernod Ricard SA	21-04-2005
Jennings Brothers PLC	Wolverhampton & Dudley Breweries plc	27-04-2005
Tops Estates plc	Land Securities Group Plc	06-05-2005
Royal P&O Nedlloyd N.V.	A.P. Møller - Mærsk A/S	11-05-2005
Pillar Property Plc.	British Land Company PLC	23-05-2005
Mobilcom AG	telunico holding AG	06-06-2005
Bayerische Hypo-und Vereinsbank AG	UniCredito Italiano SpA	12-06-2005
Leica Geosystems Holdings AG	Hexagon AB (publ)	13-06-2005
Unitor ASA	Wilh. Wilhelmsen ASA	20-06-2005
Banca Antonveneta S.p.A.	Banca Popolare Italiana Scarl	29-06-2005
Fineco S.p.A.	Capitalia S.p.A.	05-07-2005
Saunalahti Group Oyj	Elisa Oyj	07-07-2005
Versatel Telecom International N.V.	Tele2 AB (publ)	18-07-2005
Broadcastle plc	Siemens Aktiengesellschaft	26-07-2005
Datamat SpA	Finmeccanica SpA	27-07-2005
BPB plc	Compagnie de Saint-Gobain S.A.	03-08-2005
Domnick Hunter Group PLC	Eaton Corporation	26-08-2005
Severoceské doly a.s.	CEZ, a. s.	29-08-2005
The Hotgroup plc	Trinity Mirror plc	01-09-2005
Exel plc	Deutsche Post AG	01-09-2005
Quaternove	Alten S.A.	05-09-2005
Endesa, S.A.	Gas Natural SDG, S.A.	06-09-2005
Bank Ochrony Srodowiska S.A.	Skandinaviska Enskilda Banken AB (publ)	08-09-2005
Banca Nazionale del Lavoro SpA	Unipol Assicurazioni S.p.A.	19-09-2005
Protec plc	Quadnetics Group plc	23-09-2005
Findexa AS	Eniro AB (publ)	26-09-2005
Telindus Group NV	Belgacom SA	17-10-2005
Sygen International plc	Genus plc	28-10-2005
O2 Plc	Telefónica, S.A.	31-10-2005
HamaTech AG	Singulus Technologies AG	06-11-2005
BioMar Holding A/S	Aktieselskabet Schouw & Co.	10-11-2005
AM N.V.	Koninklijke BAM Groep nv	10-11-2005
Westbury plc	Persimmon Plc	13-11-2005
Reg Vardy plc	Pendragon PLC	02-12-2005
Autoroutes du Sud de la France Société Anonyme	Vinci SA	14-12-2005
Marie Brizard & Roger International S.A.S.	Belvedere Société Anonyme	21-12-2005
Hyparlo SAS	Carrefour SA	21-12-2005
Syskoplan AG	Reply S.p.A.	22-12-2005
Fastighets AB Tornet	Fabege AB (publ)	23-12-2005
Azienda Mediterranea Gas e Acqua S.p.A.	AEM Torino SpA	10-01-2006
E.ON Finland Oyj	Fortum Oyj	02-02-2006
Portugal Telecom, SGPS, SA	Sonae, SGPS, S.A.	06-02-2006
Endesa, S.A.	E.ON AG	21-02-2006
Chorion Limited	3i Group plc	23-02-2006
Beta Systems Software AG	Heidelberger Beteiligungsholding AG	08-03-2006
Lookers Public Limited Company	Pendragon PLC	09-03-2006
Banco BPI, S.A.	Banco Comercial Português, S.A.	13-03-2006
The Body Shop International plc	L'Oréal S.A.	17-03-2006
Schering AG	Bayer Aktiengesellschaft	23-03-2006
Delta Projects S.A.	Mytilineos Holdings S.A.	08-05-2006
Cambridge Antibody Technology Group PLC	AstraZeneca PLC	15-05-2006
AB Mazeikiu Nafta	Polski Koncern Naftowy ORLEN Spólka Akcyjna	19-05-2006
Asseco Poland SA	Softbank SA	19-05-2006
Sentera Oyj	Sysopendigia Oyj	31-05-2006
Bail Investissement SA	Foncière des Régions	01-06-2006
EnerTAD SpA	ERG S.p.A.	05-06-2006
Broadnet AG	QSC AG	06-06-2006
Inmobiliaria Colonial SA	Grupo Inmocaral S.A.	06-06-2006
Netwise AB	Telefonaktiebolaget LM Ericsson (publ)	08-06-2006
Gecimed	Gecina	14-06-2006
Toro Assicurazioni S.p.A.	Assicurazioni Generali S.p.A.	25-06-2006
Birse Group plc	Balfour Beatty plc	26-06-2006
Mostostal Warszawa S.A.	Acciona, S.A.	26-06-2006
Elit Group SAS	The Sage Group plc	24-07-2006
Groupe Diwan S.A.	France Télécom SA	27-07-2006
Bank BPH SA	UniCredito Italiano S.p.A.	04-08-2006
Emporiki Bank of Greece SA	Crédit Agricole SA	09-08-2006
Baggeridge Brick Public Limited Company	Wienerberger AG	17-08-2006
Sanpaolo IMI S. P. A.	Banca Intesa SpA	26-08-2006
Zaklady Remontowe Energetyki Warszawa S.A.	Polimex-Mostostal S.A.	04-09-2006
Bank Austria Creditanstalt AG	UniCredito Italiano S.p.A.	04-09-2006
Saurer AG	OC Oerlikon Corporation AG	06-09-2006
Towarzystwa Ubezpieczen Europa S.A.	Getin Holding S.A.	08-09-2006
UCB Pharma GmbH	UCB SA	25-09-2006
NG2 S.A.	Masters SA	25-09-2006

Target	Buyer	Date
Howle Holdings plc	Elektron plc	28-09-2006
Investment & Development S.p.A.	Gabetti Property Solutions S.p.A.	17-10-2006
Energomontaz Polnoc SA	Polimex-Mostostal S.A.	17-10-2006
Componenta Doktas Dokumculuk Ticaret ve Sanayi A.S.	Componenta Corporation	19-10-2006
Groupe Silicomp SA	France Télécom SA	09-11-2006
London Merchant Securities Plc	Derwent Valley Holdings Plc	14-11-2006
PlusNet plc	BT Group plc	16-11-2006
ScottishPower Plc	Iberdrola, S.A.	27-11-2006
Bank Linth LLB AG	Liechtensteinische Landesbank Aktiengesellschaft	07-12-2006
Huntleigh Technology PLC	Getinge AB (publ)	08-12-2006
SiRViS IT plc	K3 Business Technology Group plc	11-12-2006
European Motor Holdings PLC	Inchcape plc	15-12-2006
PT-Multimedia Servicos de Telecomunicacoes e Multimedia, SGPS S.A.	Sonaecom, SGPS, S.A.	22-12-2006
Punch Graphix plc	Punch International NV	22-12-2006
GRAPHISOFT SE	Nemetschek AG	31-12-2006
Computer Service Support SA	Comp SA	10-01-2007
Marfin Popular Bank Public Company Limited	Piraeus Bank S.A.	11-01-2007
Wilson Bowden plc	Barratt Developments plc	03-02-2007
Cytrustees Investment Public Company Limited	Laiki Investments EPEY Public Company Ltd.	05-02-2007
Pantechniki AE	Elliniki Technodomiki Teb AE	12-02-2007
AB Sardus	Atria Group Oyj	16-02-2007
Bank Linth LLB AG	Liechtensteinische Landesbank AG	21-02-2007
Tandberg Television ASA	Telefonaktiebolaget LM Ericsson (publ)	27-02-2007
Bodycote International plc	Sulzer Ltd	02-03-2007
Gétaz Romang Holding SA	CRH plc	05-03-2007
Careforce Group plc	Mears Group plc	05-03-2007
Fastweb SpA	Swisscom AG	12-03-2007
Enterprise plc	3i Group plc	23-03-2007
George Wimpey plc	Taylor Woodrow PLC	26-03-2007
Böhler-Uddeholm AG	Voestalpine AG	29-03-2007
Eiffage SA	Sacyr Vallehermoso, S.A.	19-04-2007
ABN AMRO Holding N.V.	Barclays PLC	23-04-2007
IBS Aktiengesellschaft	Siemens Aktiengesellschaft	23-04-2007
Cornwell Management Consultants plc	Serco Group plc	24-04-2007
Amboise Investissement	Altamir & Cie	30-04-2007
Volkswagen AG	Dr. Ing.H.C.F.Porsche Ag	01-05-2007
Converium Holding AG	SCOR SE	09-05-2007
Trace Group Plc	Microgen plc	11-05-2007
Datamonitor plc	Informa plc	14-05-2007
Hanson PLC	HeidelbergCement AG	15-05-2007
Capitalia S.p.A.	UniCredito Italiano S.p.A.	20-05-2007
Kemira GrowHow Oyj	Yara International ASA	24-05-2007
Suomen Helasto Oyj	Panostaja Oyj	30-05-2007
ASM Brescia SpA	AEM SpA	04-06-2007
Dobbies Garden Centres Plc	Tesco PLC	08-06-2007
Bastogi S.p.A.	Raggio di Luna SpA	15-06-2007
Data Service SpA	Tamburi Investment Partners S.p.A.	18-06-2007
Cumerio NV/SA	Norddeutsche Affinerie AG	24-06-2007
Sport-Elec SA	Société Centrale des Bois et des Scieries de la Manche S.A.	27-06-2007
Royal Numico, N.V.	Groupe DANONE	09-07-2007
Jc Auto S.A.	Inter Cars S.A.	16-07-2007
MOL Magyar Olaj- és Gázipari Nyilvánosan Működo Részvénytársaság	OMV Aktiengesellschaft	16-07-2007
Srubex S.A.	Koelner Spolka Akcyjna	17-07-2007
iSOFT Group plc	CompuGroup Holding AG	20-07-2007
Yapi Kredi Finansal Kiralama A.O.	Yapi ve Kredi Bankasi A.S.	20-07-2007
Tomtom Global Content B.V.	TomTom N.V.	23-07-2007
Getronics BV	Koninklijke KPN N.V.	30-07-2007
Imperial Chemical Industries PLC	Akzo Nobel N.V.	13-08-2007
XRT SA	The Sage Group plc	07-09-2007
PAT Bank Forum	Commerzbank AG	18-09-2007
Zaklady Urzadzen Komputerowych ELZAB S.A.	BBI Capital Narodowy Fundusz Inwestycyjny Spólka Akcyjna	27-09-2007
Prokom Software SA	Asseco Poland S.A.	30-09-2007
AB Lindex	Stockmann Oyj Abp	01-10-2007
Elmec Sport SA	Hellenic Duty Free Shops S.A.	05-10-2007
CLR Capital Public Ltd.	Laiki Investments EPEY Public Company Ltd.	05-10-2007
Business Objects S.A.	SAP AG	09-10-2007
Burren Energy Plc	Eni S.p.A.	09-10-2007
NET2S Group	BT Group plc	10-10-2007
Foseco PLC	Cookson Group plc	11-10-2007
Vega Group Plc	Finmeccanica SpA	29-11-2007
Vedior N.V.	Randstad Holding NV	03-12-2007
Swiss Life Deutschland Vertriebsholding GmbH	Swiss Life Holding AG	03-12-2007
Inspicio plc	3i Group plc	13-12-2007
Francono Rhein-Main GmbH	Grainger plc	31-01-2008
The Qt Company AS	Nokia Oyj	01-02-2008
KlickTel AG	Telegate AG	19-02-2008
Blue Star Maritime S.A.	Attica Holdings S.A.	27-02-2008
ComputerLand UK Plc	The Capita Group plc	11-03-2008
Fromageries Paul-Renard SA	Altarea Gestion	19-03-2008
Kav Danismanlik Pazarlama ve Ticaret AS	Koç Holding A.S.	10-04-2008
CashGuard AB	PSI Group ASA	16-04-2008
Profdoc AS	CompuGroup Holding AG	21-04-2008
FKI PLC	New Melrose Industries PLC	22-04-2008
NOVA RE S.p.A.	Aedes S.p.A.	09-05-2008
ABG S.A.	Asseco Poland S.A.	12-05-2008
Distrigas NV	Eni S.p.A.	26-05-2008
IBS OPENSystems plc	The Capita Group plc	05-06-2008
Profdoc AS	CompuGroup Holding AG	15-06-2008
Zentiva N.V.	Sanofi-Aventis	18-06-2008
Speedel Holding AG	Novartis AG	09-07-2008
Alliance & Leicester Plc	Banco Santander, SA	14-07-2008
Detica Group plc	BAE Systems plc	28-07-2008
Taylor Nelson Sofres plc	WPP 2012 plc	25-08-2008
primion Technology AG	Azkoyen, S.A.	11-09-2008
Ciba Holding, Inc.	BASF SE	15-09-2008
HBOS Plc	Lloyds TSB Group Plc	18-09-2008
Vebnet (Holdings) plc	Standard Life plc	19-09-2008
Bonusbanken A/S	Vestjysk Bank A/S	29-09-2008
Ringkjøbing Landbobank A/S	Vestjysk Bank A/S	29-09-2008
Cardety	Carrefour SA	30-09-2008

Target	Buyer	Date
Peab Industri AB	Peab AB (publ)	15-10-2008
Strand Interconnect AB	AddNode AB	16-10-2008
Lokalbanken i Nordsjaelland	Svenska Handelsbanken AB	20-10-2008
Aer Lingus Group DAC	Ryanair Holdings plc	01-12-2008
Ceytas Madencilik Tekstil Sanayi Ve Ticaret Anonim A.S.	Park Elektrik Üretim Madencilik Sanayi ve Ticaret A.S.	25-12-2008
Curidium Medica Limited	Avacta Group Plc	09-01-2009
MediCult a/s	Vitrolife AB (publ)	14-01-2009
Broca Plc	2 ergo Group plc	05-02-2009
Meliorbanca SpA	Banca popolare dell'Emilia Romagna SC	24-02-2009
Rainbow SA	Info-Quest SA	25-02-2009
Austrian Airlines AG	Deutsche Lufthansa AG	27-02-2009
Luxo ASA	AB Fagerhult (publ.)	30-03-2009
GourmetBryggeriet ApS	Harboes Bryggeri A/S	01-05-2009
Brixton plc	SEGRO Plc	22-06-2009
DIN Bostad Sverige AB	Fastighets AB Balder (publ)	26-06-2009
Braemore Resources Limited	Jubilee Platinum Plc	03-07-2009
Jelmoli Holding Ltd.	Swiss Prime Site AG	14-07-2009
SAF Simulation, Analysis and Forecasting AG	SAP AG	20-07-2009
Spring Group plc	Adecco S.A.	11-08-2009
M&C S.p.A.	Tamburi Investment Partners S.p.A.	13-08-2009
Genesis Lease Limited	AerCap Holdings N.V.	18-09-2009
Laroche, SA	Jeanjean SA	22-09-2009
Skanditek Industriförvaltning AB	Bure Equity AB (publ)	14-10-2009
Outotec (Filters) Oy	Outotec Oyj	15-10-2009
BioXell S.p.A.	Cosmo Pharmaceuticals S.p.A.	18-11-2009
Naftobudowa SA	Polimex-Mostostal S.A.	24-11-2009
3S Industries AG	Meyer Burger Technology AG	09-12-2009
Supporta plc	Mears Group plc	18-12-2009
Compagnie la Lucette	Icade	23-12-2009
Glisten Ltd	Raisio plc	09-02-2010
Setskog Sparebank	Holand Sparebank	01-03-2010
Liberty Acquisition Holdings Virginia, Inc.	Promotora de Informaciones, S.A.	05-03-2010
Xploite Limited	Avisen plc	11-03-2010
Bipromet S.A.	KGHM Polska Miedz S.A.	19-03-2010
VT Group PLC	Babcock International Group PLC	23-03-2010
Sovereign Reversions Limited	Grainger plc	29-03-2010
Simrad Optronics ASA	Rheinmetall AG	06-05-2010
Melorio plc	Pearson plc	19-05-2010
The BSS Group Limited	Travis Perkins plc	28-05-2010
Telephonetics Plc	Netcall plc	01-06-2010
Braemar Group plc	Brooks Macdonald Group plc	08-06-2010
M.W. Trade SA	Getin Holding S.A.	18-06-2010
Subsea 7 Inc.	Acergy SA	21-06-2010
Banco Guipuzcoano, SA	Banco de Sabadell, SA	25-06-2010
ATEbank SA	Piraeus Bank S.A.	15-07-2010
Auximines SA	Brederode SA	27-08-2010
Bank Zachodni WBK SA	Banco Santander SA	10-09-2010
Hydrobudowa Polska S.A.	Obrascón Huarte Lain, S.A.	15-09-2010
Modul 1 Data AB (Publ)	Softronic AB (publ)	27-09-2010
Draka Holding N.V.	Nexans S.A.	18-10-2010
Draka Holding N.V.	Prysmian S.p.A.	22-11-2010
Biolin Scientific Holding AB	Ratos AB (publ)	29-11-2010
Focus Solutions Group Ltd.	Standard Life plc	07-12-2010
Cardo AB	ASSA ABLOY AB (publ)	13-12-2010
Mouchel Group plc	Costain Group PLC	22-12-2010
Banco Alicantino de Comercio, SA	Renta 4 Servicios de Inversión S.A.	07-02-2011
Süd Chemie AG	Clariant AG	16-02-2011
Bulgari S.p.A.	LVMH Moët Hennessy - Louis Vuitton, Société Européenne	06-03-2011
Education Development International plc	Pearson plc	07-03-2011
Säk I AB	Investment AB Latour (publ)	17-03-2011
Parcours SAS	Wendel	23-03-2011
A.S. Roma S.P.A.	UniCredit S.p.A.	29-03-2011
Rhodia S.A.	Solvay SA	04-04-2011
Biophausia AB	Medivir AB (publ)	11-04-2011
Schulthess Group AG	NIBE Industrier AB (publ)	11-04-2011
Meyer Burger (Germany) GmbH	Meyer Burger Technology AG	11-04-2011
Eurazeo PME	Eurazeo SA	26-04-2011
Info AG	QSC AG	02-05-2011
Niscayah Group AB	Securitas AB (publ)	16-05-2011
ModeLabs Group SA	BigBen Interactive	24-05-2011
Sasa Polyester Sanayi A.S.	Haci Ömer Sabanci Holding A.S.	26-05-2011
Dawson Holdings plc	Smiths News Plc	07-06-2011
FIPP S.A.	Acanthe Développement	07-06-2011
Ipsogen S.A.	Qiagen N.V.	15-06-2011
Grupa Azoty Zaklady Chemiczne Police S.A.	Zaklady Azotowe w Tarnowie Moscicach Spólka Akcyjna	15-06-2011
The Capital Pub Company PLC	Fuller, Smith & Turner P.L.C.	17-06-2011
Rafako S.A.	PBG S.A.	27-06-2011
Witte Molen N.V.	Value8 N.V.	27-06-2011
Charter International Limited	New Melrose Industries PLC	29-06-2011
Schramm Holding AG	Akzo Nobel N.V.	30-06-2011
Uniq plc	Greencore Group plc	12-07-2011
Public Joint Stock Company Sugar Union Ukrros	Kernel Holding S.A.	26-08-2011
EFG Eurobank Ergasias SA	Alpha Bank AE	29-08-2011
Star Energy Group Limited	IGas Energy plc	14-09-2011
1Spatial Holdings plc	Avisen plc	07-10-2011
Aker Floating Production ASA	Aker ASA	07-11-2011
Resurs CNC AB	Wise Group AB (publ)	30-11-2011
Guyenne et Gascogne SA	Carrefour SA	12-12-2011
Energomontaz - Poludnie Spólka Akcyjna	Rafako S.A.	21-12-2011
Intek SpA	KME Group S.p.A.	31-01-2012
Metro International S.A.	Investment AB Kinnevik	06-02-2012
Afyon Çimento Sanayi Türk Anonim Sirketi	Çimsa Çimento Sanayi ve Ticaret A.S.	15-02-2012
Sygnity S.A.	Asseco Poland S.A.	22-02-2012
Kredyt Bank SA	Bank Zachodni WBK SA	28-02-2012
Aarhus Lokalbank A/S	Vestjysk Bank A/S	28-02-2012
RHÖN-KLINIKUM Aktiengesellschaft	Fresenius SE & Co. KGaA	26-04-2012
Centrum Klima Spólka Akcyjna	Lindab International AB (publ)	27-04-2012
DEO Petroleum plc	The Parkmead Group plc	28-05-2012
HITT NV	Saab AB (publ)	07-06-2012
LVL Medical Groupe SA	L'Air Liquide S.A.	08-06-2012

Target	Buyer	Date
Acegas-Aps SPA	Hera S.p.A.	11-06-2012
Aer Lingus Group DAC	Ryanair Holdings plc	19-06-2012
Elster Group SE	New Melrose Industries PLC	29-06-2012
INGRA d.d.	Duro Dakovic Holding d.d.	16-07-2012
Vinderup Bank A/S	Salling Bank A/S	12-09-2012
Sparbank A/S	Spar Nord Bank A/S	18-09-2012
LBi International NV	Publicis Groupe S.A.	20-09-2012
Zaklady Azotowe Pulawy S.A.	Zaklady Azotowe w Tarnowie Moscicach Spólka Akcyjna	20-09-2012
GENIKI Bank of Greece SA	Piraeus Bank SA	19-10-2012
Tønder Bank A/S	Sydbank A/S	02-11-2012
Rottneros AB (publ)	Arctic Paper S.A.	04-11-2012
Foncière Sepric SA	Patrimoine et Commerce SA	05-11-2012
Metric Property Investments Plc	London & Stamford Property Plc	09-11-2012
Aurelian Oil & Gas Plc	San Leon Energy plc	12-11-2012
Tikit Group Limited	BT Group plc	14-11-2012
Britvic plc	A.G. BARR p.l.c.	14-11-2012
Servage AB (publ)	Getupdated Internet Marketing AB (publ)	27-12-2012
Eurobank Ergasias SA	National Bank of Greece SA	15-02-2013
Hol Sparebank	Nes Prestegjelds Sparebank	22-02-2013
Sky High PLC	Tracsis plc	26-03-2013
May Gurney Integrated Services plc	Costain Group PLC	26-03-2013
Osiatis SA	Econocom Group SE	19-04-2013
May Gurney Integrated Services plc	Kier Group plc	24-04-2013
Cermaq ASA	Marine Harvest ASA	30-04-2013
Nordea Bank Polska SA	Powszechna Kasa Oszczędności Bank Polski SA	12-06-2013
Aedian SA	Aubay Société Anonyme	20-06-2013
Water Hall Group plc	Petards Group plc	01-07-2013
Active Risk Group Plc	Sword Group S.E.	11-07-2013
Invensys plc	Schneider Electric S.E.	11-07-2013
Elan Corporation Limited	Perrigo Company	29-07-2013
Drillcon AB (publ)	AB Traction	01-08-2013
Vordingborg Bank A/S	Lollands Bank A/S	14-08-2013
Edwards Group Limited	Atlas Copco AB	19-08-2013
Vestfyns Bank A/S	Svendborg Sparekasse A/S	04-09-2013
Veripos Inc.	Hexagon AB (publ)	14-10-2013
Andor Technology plc	Oxford Instruments plc	12-11-2013
Médica France, S.A.	Korian SA	18-11-2013
Realtime Technology AG	Dassault Systèmes SE	04-12-2013
AZ Electronic Materials S.à r.l.	Merck KGaA	05-12-2013
Bank Gospodarki Zywnosciowej SA	BNP Paribas SA	05-12-2013
DiBa Bank A/S	Sydbank A/S	19-12-2013
Veripos Inc.	Hexagon AB (publ)	20-12-2013
France Tourisme Immobilier SA	FIPP S.A.	31-12-2013
Rautaruukki Corporation	SSAB AB (publ)	22-01-2014
Fusion IP plc	IP Group Plc	23-01-2014
Mr.Bricolage S.A.	Kingfisher plc	03-04-2014
Lafarge S.A.	Holcim Ltd.	07-04-2014
Groupe Steria SCA	Sopra Group	08-04-2014
Topotarget A/S	BioAlliance Pharma SA	16-04-2014
Systar SA	Axway Software SA	17-04-2014
Dixons Retail plc	Carphone Warehouse Group plc	15-05-2014
ACM Shipping Group plc	Braemar Shipping Services Plc	20-05-2014
Mediterranean Oil & Gas Plc	Rockhopper Exploration plc	23-05-2014
Bull Société Anonyme	Atos SE	26-05-2014
Covidien plc	Medtronic, Inc.	15-06-2014
Bulgarska Roza-Sevtopolis AD	Sopharma AD	16-06-2014
Cyclon Hellas SA	Motor Oil (Hellas) Corinth Refineries S.A.	18-06-2014
TUI Travel PLC	TUI AG	27-06-2014
Schweizerische National-Versicherungs-Gesellschaft AG	Helvetia Holding AG	07-07-2014
Aalberts Surface Technologies Polymer GmbH	Aalberts Industries N.V.	08-07-2014
Corio N.V.	Klépierre SA	29-07-2014
Hyder Consulting PLC	Arcadis NV	31-07-2014
Aerodrom Ljubljana d.d.	Fraport AG	06-08-2014
Pimas Plastik Insaat Malzemeleri A/S	Deceuninck NV	25-08-2014
Jazztel, plc	Orange S.A.	16-09-2014
BNP Paribas Bank Polska Spolka Akcyjna	Bank Gospodarki Zywnosciowej S.A.	10-10-2014
Aeroporto di Firenze S.p.A.	Società Aeroporto Toscano (S.A.T.) Galileo Galilei Società per Azioni	16-10-2014
MCB Finance Group plc	International Personal Finance plc	18-11-2014
Friends Life Group Limited	Aviva Plc	21-11-2014
Aer Lingus Group DAC	International Consolidated Airlines Group S.A.	18-12-2014
Island Hotels Group Holdings p.l.c.	International Hotel Investments p.l.c.	16-01-2015
Networkers International Plc	Matchtech Group Plc	28-01-2015
Conwert Immobilien Invest SE	Deutsche Wohnen AG	15-02-2015
Banco BPI, S.A.	CaixaBank, S.A.	17-02-2015
Sorin SpA	Cyberonics, Inc.	26-02-2015
Cacanska banka a.d. Cacak	Türkiye Halk Bankasi AS	20-03-2015
Accumuli plc	NCC Group plc	24-03-2015
World Duty Free S.p.A.	Dufry AG	28-03-2015
BG Group plc	Royal Dutch Shell plc	08-04-2015
Dogan Gazetecilik A.S.	Hürriyet Gazetecilik ve Matbaacilik A.S.	11-04-2015
Pivovarna Lasko, d. d.	Heineken N.V.	13-04-2015
Alcatel-Lucent	Nokia Oyj	15-04-2015
Zito, prehrambena industrija d.d.	Podravka d.d.	21-04-2015
Aerocrine AB	Circassia Pharmaceuticals plc	14-05-2015
PartnerTech AB (publ)	Scanfil Oyj	25-05-2015
Enables IT Group plc	1Spatial Plc	17-06-2015
Etablissements Delhaize Frères et Cie "Le Lion" (Groupe Delhaize) SA	Koninklijke Ahold N.V.	24-06-2015
Gruppo Green Power S.r.l.	Innovatec S.p.A.	27-06-2015
Malkowski-Martech Spólka Akcyjna	Projprzem Makrum S.A.	09-07-2015
bwin.party digital entertainment plc	888 Holdings plc	17-07-2015
Italcementi SpA	HeidelbergCement AG	28-07-2015
HellermannTyton Group PLC	Aptiv PLC	30-07-2015
Fair Value REIT-AG	DEMIRE Deutsche Mittelstand Real Estate AG	31-07-2015
Partnership Assurance Group Plc	Just Retirement Group Plc	11-08-2015
RSA Insurance Group Plc	Zurich Insurance Group AG	25-08-2015
MPI Société anonyme	Etablissements Maurel & Prom S.A.	27-08-2015
bwin.party digital entertainment plc	GVC Holdings PLC	04-09-2015
Tribona AB	Corem Property Group AB (publ)	08-09-2015
Lubelski Węgiel "BOGDANKA" Spólka Akcyjna	ENEA S.A.	14-09-2015
LEG Immobilien AG	Deutsche Wohnen AG	20-09-2015

Target	Buyer	Date
Densitron Technologies plc	Quixant Plc	25-09-2015
Talentum Oyj	Alma Media Oyj	29-09-2015
Darty PLC	Fnac Darty SA	30-09-2015
Xchanging plc	Capita plc	05-10-2015
SABMiller plc	Anheuser-Busch InBev SA/NV	07-10-2015
Deutsche Wohnen AG	Vonovia SE	14-10-2015
Tribona AB	Catena AB (publ)	20-10-2015
Energy Technique plc	Volution Group plc	11-11-2015
Falkland Oil and Gas Ltd.	Rockhopper Exploration plc	24-11-2015
RSY S.A.	Zastal S.A.	30-11-2015
CSY Spólka Akcyjna	Zastal S.A.	30-11-2015
RSY S.A.	CSY Spólka Akcyjna	02-12-2015
Tyco International plc	Johnson Controls Inc.	25-01-2016
London Stock Exchange Group plc	Deutsche Börse AG	23-02-2016
Exiqon A/S	Qiagen N.V.	29-03-2016
Core operations of Bank BPH SA	Alior Bank SA	01-04-2016
Vivoline Medical AB	Xvivo Perfusion AB (publ)	18-04-2016
Foncière de Paris	Gecina	19-05-2016
Lerøy Havfisk AS	Lerøy Seafood Group ASA	02-06-2016
Norway Seafoods Group AS	Lerøy Seafood Group ASA	02-06-2016
BoConcept Holding A/S	3i Group PLC	02-06-2016
Tesco Kipa Kitle Pazarlama Ticaret Lojistik ve Gida Sanayi A.S.	Migros Ticaret A.S.	10-06-2016
Premier Farnell plc	Dätwyler Holding AG	14-06-2016
Imperial d.d.	Valamar Riviera d.d.	27-07-2016
Rem Offshore ASA	Solstad Offshore ASA	28-07-2016
Conwert Immobilien Invest SE	Vonovia SE	05-09-2016
Looser Holding AG	AFG Arbonia-Forster-Group AG	15-09-2016
UK Mail Group plc	Deutsche Post AG	28-09-2016
Cyprotex plc	Evotec AG	26-10-2016
Norvestia Oyj	CapMan Oyj	03-11-2016
PostNL N.V.	bpost NV/SA	06-11-2016
Tecnocom Telecomunicaciones y Energía, S.A.	Indra Sistemas, S.A.	29-11-2016
Linde Aktiengesellschaft	Linde plc	29-11-2016
6PM Holdings p.l.c.	IDOX plc	14-12-2016
Matse Holding AB (publ)	Axfood AB (publ)	15-12-2016
Delta Lloyd NV	NN Group NV	23-12-2016
Luxottica Group S.p.A.	Essilor International Société Anonyme	16-01-2017
Zodiac Aerospace	Safran SA	19-01-2017
LifeWatch AG	Aevis Victoria SA	24-01-2017
Booker Group Limited	Tesco PLC	27-01-2017
NetPlay TV plc	Betsson AB (publ)	02-02-2017
Farstad Shipping ASA	Solstad Offshore ASA	06-02-2017
Deep Sea Supply Plc	Solstad Offshore ASA	06-02-2017
Kontron AG	S&T AG	15-02-2017
Aberdeen Asset Management Plc	Standard Life Plc	06-03-2017
Wood plc	John Wood Group PLC	13-03-2017
Macrologic SA	Asseco Business Solutions S.A.	12-04-2017
Kopex S.A.	Famur S.A.	09-05-2017
Bringwell AB (publ)	Midsona AB (publ)	15-05-2017
Berendsen plc	Elis SA	18-05-2017
Touchstone Innovations Plc	IP Group Plc	23-05-2017
Bytom S.A.	Vistula Group S.A.	05-06-2017
Lemminkäinen Oyj	YIT Oyj	19-06-2017
Eurosic	Gecina	21-06-2017
Pimas Plastik Insaat Malzemeleri A/S	Ege Profil Ticaret ve Sanayi Anonim Sirketi	22-06-2017
Avnel Gold Mining Limited	Endeavour Mining Corporation	28-06-2017
Hayward Tyler Group PLC	Avingtrans plc	30-06-2017
Jimmy Choo Group Plc	Michael Kors Holdings Limited	25-07-2017
Songa Offshore SE	Transocean Ltd.	15-08-2017
Orava Asuntorahasto Oyj	Investors House Oyj	21-08-2017
ANF Immobilier	Icade	11-10-2017
Axiare Patrimonio SOCIMI, S.A.	Inmobiliaria Colonial, S.A.	13-11-2017
Intu Properties Plc	Hammerson Plc	06-12-2017
Ladbrokes Coral Group PLC	GVC Holdings PLC	07-12-2017
Gemalto N.V.	Thales S.A.	17-12-2017
BUWOG AG	Vonovia SE	18-12-2017
Goldbach Group AG	Tamedia AG	22-12-2017
Com Hem Holding AB (publ)	Tele2 AB (publ)	10-01-2018
GKN Limited	Melrose Industries PLC	12-01-2018
UBM Plc	Informa plc	17-01-2018
auFeminin.com	TF1 SA	18-01-2018
ENGIE Eps S.A.	Engie SA	24-01-2018
Ablynx NV	Sanofi	29-01-2018
Stadium Group plc	TT Electronics plc	15-02-2018
RELX NV	RELX PLC	15-02-2018
Fidessa group Plc	Temenos Group AG	20-02-2018
Grupa LOTOS S.A.	Polski Koncern Naftowy ORLEN Spólka Akcyjna	27-02-2018
Nordjyske Bank A/S	Jyske Bank A/S	13-03-2018
Gambero Rosso S.p.A.	Class Editori Spa	17-03-2018
Fenner PLC	Compagnie Générale des Établissements Michelin Société en commandite par actions	19-03-2018
Hammerson Plc	Klépierre SA	19-03-2018
Naturex S.A.	Givaudan SA	26-03-2018
Total Direct Energie Société Anonyme	TOTAL S.A.	18-04-2018
Nordjyske Bank A/S	Ringkjøbing Landbobank A/S	18-04-2018
Carbures Europe, S.A.	Inypsa Informes y Proyectos, S.A.	26-04-2018
Polenergia S.A.	PGE Polska Grupa Energetyczna S.A.	22-05-2018
Uniflex AB (publ)	Poolia AB (publ)	04-06-2018
Etablissements Fauvet-Girel S.A.	Krief Group SA	20-06-2018
Capio AB (publ)	Ramsay Générale de Santé SA	13-07-2018
Affine	Société de la Tour Eiffel	28-09-2018
Selectirente	Tikehau Capital	18-10-2018
Kotipizza Group Oyj	Orkla ASA	22-11-2018
Faroe Petroleum plc	DNO ASA	26-11-2018
Grivalia Properties REIC	Eurobank Ergasias SA	26-11-2018
Gino Rossi S.A.	CCC S.A.	07-12-2018
Pöyry Oyj	ÅF AB (publ)	10-12-2018
Oslo Børs VPS Holding ASA	Euronext N.V.	24-12-2018
Panalpina Welttransport (Holding) AG	DSV A/S	16-01-2019
Atrem S.A.	Grupa Kapitalowa IMMOBILE S.A.	11-02-2019
MVV Holding AB (publ)	Hitech & Development Wireless Sweden Holding AB (publ)	28-02-2019

Target	Buyer	Date
Findel plc	Sports Direct International plc	04-03-2019
Monberg & Thorsen A/S	Højgaard Holding A/S	05-03-2019
agta record ag	ASSA ABLOY AB (publ)	06-03-2019
Charter Court Financial Services Group Plc	OneSavings Bank Plc	11-03-2019
Footasylum plc	JD Sports Fashion Plc	18-03-2019
Panion Animal Health AB	CombiGene AB (publ)	18-04-2019
Spectrum ASA	TGS-NOPEC Geophysical Company ASA	02-05-2019
A & J Mucklow Group Limited	LondonMetric Property Plc	23-05-2019
First Sensor AG	TE Connectivity Ltd.	26-05-2019
Stride Gaming Plc	The Rank Group Plc	31-05-2019
GAME Digital plc	Sports Direct International plc	05-06-2019
EVRY ASA	Tieto Oyj	18-06-2019
Altran Technologies S.A.	Capgemini SE	24-06-2019
Just Eat plc	Takeaway.com N.V.	29-07-2019
Miton Group Plc	Premier Asset Management Group Plc	04-09-2019
Grupo Média Capital, SGPS, S.A.	Cofina, SGPS, S.A.	21-09-2019
The Scottish Salmon Company PLC	P/F Bakkafrost	25-09-2019
Hoivatilat Oyj	Aedifica NV/SA	04-11-2019
Karessa Pharma Holding AB (publ)	Klaria Pharma Holding AB (publ.)	05-11-2019
Swedol AB	Momentum Group AB (publ)	11-11-2019
Hemfosa Fastigheter AB (publ)	Samhällsbyggnadsbolaget i Norden AB (publ)	15-11-2019
Redde plc	Northgate plc	29-11-2019
Centamin Plc	Endeavour Mining Corporation	03-12-2019
Energa SA	Polski Koncern Naftowy ORLEN Spólka Akcyjna	05-12-2019
Adler Real Estate AG	ADO Properties S.A.	15-12-2019
Sirius Minerals Plc	Anglo American Plc	20-01-2020
Ingenico Group S.A.	Worldline S.A.	03-02-2020
ISRA VISION AG	Atlas Copco AB	10-02-2020
Sportamore AB (publ)	Footway Group AB (publ)	17-02-2020
Unione di Banche Italiane SpA	Intesa Sanpaolo SpA	17-02-2020
Komercijalna banka a.d. Beograd	Nova Ljubljanska banka d.d., Ljubljana	26-02-2020
Willis Towers Watson Public Limited Company	Aon plc	09-03-2020
Columbus Energy Resources plc	Bahamas Petroleum Company plc	11-06-2020
NetEnt AB (publ)	Evolution AB (publ)	24-06-2020
Consus Real Estate AG	ADO Properties S.A.	29-06-2020
Polskie Górnictwo Naftowe i Gazownictwo S.A.	Polski Koncern Naftowy ORLEN Spólka Akcyjna	14-07-2020
Kværner ASA	Aker Solutions ASA	17-07-2020
Uro Property Holdings SOCIMI, S.A.	Banco Santander, S.A.	24-07-2020
4basebio AG	Sparta AG	27-07-2020
Grupo Média Capital, SGPS, S.A.	Cofina, SGPS, S.A.	12-08-2020
SDL plc	RWS Holdings plc	27-08-2020
VOOLT Spólka Akcyjna	Rubicon Partners S.A.	07-09-2020
Bredband2 Allmänna IT AB	Bredband2 i Skandinavien AB (publ)	14-09-2020
Bankia, SA	CaixaBank, SA	18-09-2020
MOJ S.A.	Fabryki Sprzetu i Narzedzi Górniczych Grupa Kapitalowa FASING S.A.	25-09-2020
Arcus ASA	Altia Oyj	29-09-2020
Konecranes Plc	Cargotec Corporation	01-10-2020
Anevia Société Anonyme	ATEME SA	06-10-2020
SSM Holding AB (publ)	Amasten Fastighets AB (publ)	14-10-2020
Edgeware AB (publ)	Agile Content, S.A.	30-10-2020
Navios Maritime Containers L.P.	Navios Maritime Partners L.P.	16-11-2020
Telit Communications PLC	u-blox Holding AG	20-11-2020
GoCo Group PLC	Future plc	25-11-2020
Den Jyske Sparekasse A/S	Vestjysk Bank A/S	26-11-2020
Entra ASA	Castellum AB (publ)	26-11-2020
Hunters Property Plc	The Property Franchise Group PLC	04-12-2020
Sofibus Patrimoine S.A.	SEGRO Plc	15-12-2020
Allgon AB (publ)	Bure Equity AB (publ)	22-12-2020
Entra ASA	Samhällsbyggnadsbolaget i Norden AB (publ)	23-12-2020
Liberbank, SA	Unicaja Banco, SA	29-12-2020
Olmuksan International Paper Ambalaj Sanayi ve Ticaret A.S.	Mondi plc	05-01-2021
Enlabs AB (publ)	Entain Plc	07-01-2021
Suez S.A.	Veolia Environnement SA	07-01-2021
Quabit Inmobiliaria, S.A.	Neinor Homes, S.A.	11-01-2021
GW Pharmaceuticals plc	Jazz Pharmaceuticals plc	03-02-2021
Archicom S.A.	Echo Investment S.A.	18-02-2021
Iffe Futura, S.A.	Nyesa Valores Corporación, S.A.	22-02-2021
Klövern AB (publ)	Corem Property Group AB (publ)	29-03-2021
Métropole Télévision S.A.	TF1 SA	17-05-2021
Deutsche Wohnen SE	Vonovia SE	24-05-2021
Società Cattolica di Assicurazione - Società Cooperativa	Assicurazioni Generali S.p.A.	31-05-2021
Polski Bank Komórek Macierzystych S.A.	VITA 34 AG	31-05-2021
AKKA Technologies SE	Adecco Group AG	28-07-2021
U.K. Spac Plc	Hellenic Dynamics Plc	02-08-2021
Kungsleden AB	Castellum AB (publ)	02-08-2021
HELLA GmbH & Co. KGaA	Faurecia S.E.	14-08-2021
Danske Andelskassers Bank A/S	Spar Nord Bank A/S	17-08-2021
Norway Royal Salmon AS	SalMar ASA	20-08-2021
Biotest Aktiengesellschaft	Grifols, S.A.	17-09-2021
Toutabo SA	Readly International AB (publ)	05-10-2021
U and I Group PLC	Land Securities Group Plc	01-11-2021
Solon Eiendom ASA	Samhällsbyggnadsbolaget i Norden AB (publ)	09-11-2021
River and Mercantile Group PLC	AssetCo plc	23-11-2021
Stagecoach Group plc	National Express Group PLC	14-12-2021
Amasten Fastighets AB (publ)	Samhällsbyggnadsbolaget i Norden AB (publ)	20-12-2021
Malkowski-Martech Spólka Akcyjna	ASSA ABLOY AB (publ)	23-12-2021
MultiQ International AB (publ)	Vertiseit AB (publ)	10-01-2022
Bilot Oyj	Vincit Oyj	03-02-2022
NTS ASA	SalMar ASA	14-02-2022
Filta Group Holdings plc	Franchise Brands plc	16-02-2022
McKay Securities Plc	Workspace Group Plc	02-03-2022
Krynicki Recykling Spólka Akcyjna	SCR-Sibelco N.V.	23-03-2022
Poenina Holding AG	Burkhalter Holding AG	31-03-2022
Euronav NV	Frontline Ltd.	07-04-2022
Alumetal S.A.	Norsk Hydro ASA	29-04-2022
BLIRT S.A.	Qiagen N.V.	11-05-2022
M&C Saatchi plc	Next Fifteen Communications Group plc	20-05-2022
Capricorn Energy PLC	Tullow Oil plc	01-06-2022
Pires Investments plc	Tern Plc	01-06-2022
Haldex AB (publ)	SAF-Holland SE	08-06-2022

Target	Buyer	Date
Shaftesbury PLC	Capital & Counties Properties PLC	16-06-2022
Sourcesense S.p.A.	Poste Italiane S.p.A.	24-06-2022
Magseis Fairfield ASA	TGS ASA	29-06-2022
Byte Computer S.A.	Ideal Holdings S.A.	01-07-2022
Serica Energy plc	Kistos Holdings Plc	12-07-2022
Semcon AB	Etteplan Oyj	23-08-2022
Countryside Partnerships PLC	Vistry Group PLC	05-09-2022
Semcon AB	Ratos AB (publ)	26-09-2022
TP Group plc	Science Group plc	31-10-2022
Arctic Fish Holding AS	Mowi ASA	31-10-2022
Appreciate Group plc	PayPoint plc	07-11-2022
AdderaCare AB	MedCap AB (publ)	17-11-2022
Wentworth Resources plc	Etablissements Maurel & Prom S.A.	05-12-2022
Chr. Hansen Holding A/S	Novonesis A/S	12-12-2022
Attica Holdings S.A.	Piraeus Financial Holdings S.A.	13-12-2022
Pherecydes Pharma Société anonyme	ERYTECH Pharma S.A.	16-02-2023
Credit Suisse Group AG	UBS Group AG	19-03-2023
Ordina N.V.	Sopra Steria Group SA	21-03-2023
Cenkos Securities plc	finnCap Group plc	23-03-2023
Tion Renewables AG	EQT AB (publ)	24-03-2023
Selectimmune Pharma AB (publ)	Hamlet Pharma AB (publ)	31-03-2023
Uponor Oyj	Aliaxis SA	17-04-2023
ACQ Bure AB (publ)	Yubico AB	19-04-2023
Serneke Group AB (publ)	Doxa AB (publ)	24-04-2023
Majorel Group Luxembourg S.A.	Teleperformance SE	26-04-2023
SimCorp A/S	Deutsche Börse AG	27-04-2023
Numis Corporation Plc	Deutsche Bank Aktiengesellschaft	28-04-2023
GAM Holding AG	Liontrust Asset Management PLC	04-05-2023
Industrial Stars of Italy 4 S.p.A.	Sicily by Car S.p.A.	16-05-2023
CT Property Trust Limited	LondonMetric Property Plc	24-05-2023
Uponor Oyj	Georg Fischer AG	12-06-2023
STS Holding S.A.	Entain Plc	13-06-2023
Pharmiva AB (publ)	PEPTONIC medical AB (publ)	15-06-2023
Eneti Inc.	Cadeler A/S	16-06-2023
Transition S.A.	Arverne Group S.A.	16-06-2023
BIOCORP Production	Novo Nordisk A/S	19-06-2023
Electric Guitar PLC	Electric Guitar PLC	07-07-2023
Galimmo SCA	Carmila S.A.	12-07-2023
STEICO SE	Kingspan Group plc	18-07-2023
Cofina, SGPS, S.A.	Grupo Média Capital, SGPS, S.A.	21-07-2023
SPEAR Investments I B.V.	QEV Technologies, S.L	01-08-2023
Schaffner Holding AG	TE Connectivity Ltd.	16-08-2023
PGS ASA	TGS ASA	18-09-2023
TMT Acquisition Plc	Belluscura plc	03-10-2023
Tornos Holding AG	Starrag Group Holding AG	26-10-2023
SpareBank 1 Sørøst-Norge	SpareBank 1 SR-Bank ASA	26-10-2023
VT5 Acquisition Company AG	R&S International Holding AG	31-10-2023
The City Pub Group plc	Young & Co.'s Brewery, P.L.C.	16-11-2023
Forward Partners Group plc	Molten Ventures Plc	27-11-2023
Musti Group Oyj	Sonae, SGPS, S.A.	29-11-2023
Bowen Fintech Plc	Minnadeooyasan-Hanbai Co., Ltd.	22-12-2023
Totens Sparebank	SpareBank 1 Østlandet	03-01-2024
Belvoir Group PLC	The Property Franchise Group PLC	10-01-2024
LXI REIT plc	LondonMetric Property Plc	11-01-2024
KATEK SE	Kontron AG	18-01-2024
Kindred Group plc	La Française des Jeux Société anonyme	21-01-2024
Besqab AB (publ)	Aros Bostadsutveckling AB (publ)	31-01-2024
UK Commercial Property REIT Limited	Tritax Big Box REIT plc	06-02-2024
Redrow plc	Barratt Developments plc	07-02-2024
DS Smith Plc	Mondi plc	08-02-2024
Time People Group AB (publ)	Solidx AB (publ)	04-03-2024
Virgin Money UK PLC	Nationwide Building Society	07-03-2024
Amniotics AB (publ)	Magle Chemoswed Holding AB (publ)	22-03-2024
Lok'nStore Group Plc	Shurgard Self Storage Ltd	11-04-2024
Senioresidenz AG	Novavest Real Estate AG	18-04-2024
Banco de Sabadell, S.A.	Banco Bilbao Vizcaya Argentaria, S.A.	01-05-2024
OX2 AB (publ)	EQT AB (publ)	13-05-2024
Addiko Bank AG	Nova Ljubljanska Banka d.d.	15-05-2024
Árima Real Estate SOCIMI, S.A.	JSS Real Estate SOCIMI, S.A.	16-05-2024
Capital & Regional Plc	NewRiver REIT plc	23-05-2024
Oceanteam ASA	SoilTech AS	30-05-2024
Amniotics AB (publ)	Magle Chemoswed Holding AB (publ)	30-05-2024
Crimson Tide plc	Checkit plc	04-06-2024
Topdanmark A/S	Sampo Oyj	17-06-2024
Compagnie des Tramways de Rouen	Financière Moncey Société anonyme	10-07-2024
Crest Nicholson Holdings plc	Bellway p.l.c.	10-07-2024
VBARE Iberian Properties SOCIMI, S.A.	Advero Properties SOCIMI, S.A.	02-08-2024
Société Industrielle et Financière de l'Artois Société anonyme	Bolloré SE	12-09-2024
Intermonte Partners SIM S.p.A.	Banca Generali S.p.A.	16-09-2024
Doro AB (publ)	Xplora Technologies AS	26-09-2024
musicMagpie plc	AO World plc	02-10-2024
Arcadium Lithium plc	Rio Tinto Group	06-10-2024
Intercontinental International Real Estate Investment Company	BriQ Properties Real Estate Investment Company	09-10-2024
Banco BPM S.p.A.	UniCredit S.p.A.	25-11-2024
Direct Line Insurance Group plc	Aviva plc	27-11-2024
Condor Gold Plc	Metals Exploration plc	01-12-2024
Brand Architekts Group plc	Warpaint London PLC	05-12-2024
XXL ASA	Frasers Group Plc	06-12-2024
About You Holding SE	Zalando SE	11-12-2024
MPC Münchmeyer Petersen Capital AG	Castor Maritime Inc.	12-12-2024
Intelligent Ultrasound Group plc	Surgical Science Sweden AB (publ)	19-12-2024
Crayon Group Holding ASA	SoftwareONE Holding AG	19-12-2024

Source: Author's own creation based on data from S&P Capital IQ.

APPENDIX C: EMPIRICAL RESULTS

Appendix C.1: Hypothesis 1: Univariate analysis

Market Model - Target

Appendix 8: AAR - Market Model - Target (European index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.19%	3.44%	0.12%	1.67	9.60%	*	0.19%
-9	0.10%	3.30%	0.12%	0.83	40.48%		0.29%
-8	0.25%	3.79%	0.13%	2.16	3.14%	**	0.54%
-7	0.24%	4.08%	0.14%	2.09	3.72%	**	0.78%
-6	0.44%	3.75%	0.13%	3.77	0.02%	***	1.21%
-5	0.20%	3.12%	0.11%	1.69	9.05%	*	1.41%
-4	0.24%	3.05%	0.11%	2.09	3.69%	**	1.65%
-3	0.30%	5.31%	0.19%	2.61	0.93%	***	1.95%
-2	0.44%	5.29%	0.19%	3.81	0.01%	***	2.39%
-1	1.09%	5.34%	0.19%	9.42	0.00%	***	3.48%
0	9.31%	17.54%	0.62%	80.63	0.00%	***	12.80%
1	3.18%	12.97%	0.46%	27.50	0.00%	***	15.97%
2	0.58%	7.24%	0.26%	5.05	0.00%	***	16.56%
3	0.16%	3.45%	0.12%	1.38	16.93%		16.71%
4	0.04%	2.49%	0.09%	0.36	71.75%		16.76%
5	0.00%	2.60%	0.09%	0.00	99.82%		16.76%
6	-0.09%	4.49%	0.16%	-0.82	41.29%		16.66%
7	-0.05%	4.70%	0.17%	-0.45	65.43%		16.61%
8	0.10%	4.51%	0.16%	0.86	39.20%		16.71%
9	0.01%	2.57%	0.09%	0.08	93.82%		16.72%
10	-0.01%	2.16%	0.08%	-0.10	91.81%		16.71%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 9: Descriptive statistics - Market Model - Target

Index	Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
Local	[-1; +1]	792	-62.25%	201.69%	21.37%	2.20	12.25
	[-3; +3]	792	-89.73%	160.69%	23.35%	1.33	6.71
	[-5; +5]	792	-84.22%	162.48%	23.76%	1.30	5.34
	[-10; +10]	792	-74.20%	167.01%	25.71%	1.21	4.60
European	[-1; +1]	792	-61.73%	202.11%	21.31%	2.20	12.38
	[-3; +3]	792	-86.76%	161.65%	23.31%	1.32	6.69
	[-5; +5]	792	-84.69%	161.55%	23.81%	1.29	5.23
	[-10; +10]	792	-75.99%	164.37%	25.73%	1.20	4.45

Source: Author's own creation.

Market Model - Buyer

Appendix 10: AAR - Market Model - Buyer (European index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.15%	3.29%	0.12%	1.34	18.09%		0.15%
-9	0.04%	2.46%	0.09%	0.36	72.10%		0.19%
-8	-0.10%	2.42%	0.09%	-0.91	36.32%		0.09%
-7	-0.08%	2.28%	0.08%	-0.69	48.99%		0.01%
-6	-0.02%	1.77%	0.06%	-0.14	88.66%		-0.01%
-5	0.03%	2.15%	0.08%	0.24	81.17%		0.02%
-4	0.06%	1.98%	0.07%	0.53	59.76%		0.08%
-3	0.15%	2.91%	0.10%	1.34	18.11%		0.23%
-2	-0.08%	1.97%	0.07%	-0.69	48.87%		0.15%
-1	0.02%	2.17%	0.08%	0.13	89.33%		0.17%
0	0.03%	4.25%	0.15%	0.23	81.92%		0.19%
1	0.35%	3.81%	0.14%	3.09	0.21%	***	0.54%
2	-0.04%	2.53%	0.09%	-0.37	71.03%		0.50%
3	-0.02%	2.57%	0.09%	-0.14	88.99%		0.48%
4	-0.14%	2.18%	0.08%	-1.28	20.01%		0.34%
5	-0.08%	2.45%	0.09%	-0.71	47.73%		0.26%
6	-0.08%	1.96%	0.07%	-0.67	50.28%		0.18%
7	-0.15%	2.09%	0.07%	-1.32	18.77%		0.04%
8	-0.06%	2.15%	0.08%	-0.52	60.34%		-0.02%
9	-0.17%	1.93%	0.07%	-1.52	13.00%		-0.19%
10	-0.04%	1.98%	0.07%	-0.33	74.52%		-0.23%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 11: Descriptive statistics - Market Model - Buyer

Index	Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
Local	[-1; +1]	792	-27.24%	43.68%	6.01%	0.91	6.67
	[-3; +3]	792	-32.90%	48.51%	7.28%	1.00	5.68
	[-5; +5]	792	-35.76%	55.92%	8.57%	1.25	7.14
	[-10; +10]	792	-46.94%	64.31%	10.70%	0.64	5.61
European	[-1; +1]	792	-26.33%	45.52%	6.15%	0.94	6.56
	[-3; +3]	792	-28.72%	56.80%	7.55%	1.13	6.42
	[-5; +5]	792	-31.15%	59.54%	9.08%	1.22	6.78
	[-10; +10]	792	-62.66%	63.77%	11.22%	0.42	5.13

Source: Author's own creation.

Market Model - Combined

Appendix 12: AAR - Market Model - Combined (European index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.17%	2.83%	0.10%	5.45	0.00%	***	0.17%
-9	0.07%	2.12%	0.08%	2.13	3.31%	**	0.23%
-8	0.08%	2.07%	0.07%	2.47	1.37%	**	0.31%
-7	-0.01%	2.05%	0.07%	-0.25	80.47%		0.30%
-6	0.07%	1.68%	0.06%	2.26	2.40%	**	0.37%
-5	0.09%	2.00%	0.07%	2.90	0.38%	***	0.46%
-4	0.08%	1.82%	0.07%	2.56	1.06%	***	0.54%
-3	0.08%	2.51%	0.09%	2.48	1.34%	**	0.62%
-2	-0.01%	1.78%	0.06%	-0.30	76.49%		0.61%
-1	0.21%	2.03%	0.07%	6.81	0.00%	***	0.82%
0	1.39%	4.70%	0.17%	45.06	0.00%	***	2.20%
1	0.64%	3.69%	0.13%	20.78	0.00%	***	2.84%
2	-0.06%	2.43%	0.09%	-2.01	4.45%		2.78%
3	-0.06%	2.09%	0.08%	-1.91	5.66%		2.72%
4	-0.11%	2.04%	0.07%	-3.51	0.05%	***	2.61%
5	-0.07%	2.07%	0.08%	-2.42	1.58%	**	2.54%
6	-0.10%	1.94%	0.07%	-3.26	0.11%	***	2.44%
7	-0.12%	2.05%	0.07%	-3.79	0.02%	***	2.32%
8	0.01%	2.56%	0.09%	0.29	76.87%		2.33%
9	-0.16%	1.78%	0.06%	-5.05	0.00%	***	2.17%
10	-0.01%	2.00%	0.07%	-0.25	80.41%		2.17%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 13: Descriptive statistics - Market Model - Combined

Index	Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
Local	[-1; +1]	761	-20.31%	33.31%	5.80%	0.94	3.89
	[-3; +3]	761	-28.60%	34.74%	6.87%	0.67	3.54
	[-5; +5]	761	-29.29%	49.64%	7.99%	0.93	4.50
	[-10; +10]	761	-38.94%	59.40%	9.94%	0.60	4.19
European	[-1; +1]	761	-20.15%	33.27%	5.92%	0.89	3.46
	[-3; +3]	761	-28.03%	38.08%	7.09%	0.72	3.23
	[-5; +5]	761	-35.47%	53.23%	8.46%	0.81	4.35
	[-10; +10]	761	-45.44%	58.90%	10.38%	0.43	3.59

Source: Author's own creation.

Constant Mean Return Model - Target

Appendix 14: AAR - Constant Mean Return Model - Target

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.19%	3.53%	0.13%	1.55	12.08%		0.19%
-9	0.09%	3.31%	0.12%	0.72	46.91%		0.27%
-8	0.26%	3.87%	0.14%	2.16	3.14%	**	0.53%
-7	0.27%	4.08%	0.15%	2.28	2.30%	**	0.81%
-6	0.46%	3.82%	0.14%	3.85	0.01%	***	1.27%
-5	0.21%	3.19%	0.11%	1.78	7.55%	*	1.48%
-4	0.25%	3.07%	0.11%	2.08	3.77%	**	1.73%
-3	0.34%	5.36%	0.19%	2.80	0.52%	***	2.07%
-2	0.42%	5.37%	0.19%	3.49	0.05%	***	2.49%
-1	1.09%	5.39%	0.19%	9.05	0.00%	***	3.57%
0	9.24%	17.57%	0.62%	76.97	0.00%	***	12.81%
1	3.20%	12.99%	0.46%	26.68	0.00%	***	16.01%
2	0.59%	7.32%	0.26%	4.94	0.00%	***	16.61%
3	0.14%	3.47%	0.12%	1.19	23.28%		16.75%
4	0.06%	2.47%	0.09%	0.46	64.57%		16.81%
5	-0.04%	2.65%	0.09%	-0.34	73.75%		16.77%
6	-0.12%	4.50%	0.16%	-0.99	32.31%		16.65%
7	-0.06%	4.72%	0.17%	-0.46	64.54%		16.59%
8	0.07%	4.46%	0.16%	0.62	53.57%		16.67%
9	-0.01%	2.49%	0.09%	-0.06	95.18%		16.66%
10	-0.04%	2.23%	0.08%	-0.35	72.57%		16.62%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 15: Descriptive statistics - Constant Mean Return Model - Target

Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
[-1; +1]	792	-62.03%	202.16%	21.32%	2.21	12.38
[-3; +3]	792	-87.51%	161.46%	23.34%	1.34	6.70
[-5; +5]	792	-87.63%	163.83%	23.93%	1.26	5.30
[-10; +10]	792	-73.59%	169.14%	25.83%	1.17	4.36

Source: Author's own creation.

Constant Mean Return Model - Buyer

Appendix 16: AAR - Constant Mean Return Model - Buyer

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.12%	3.48%	0.12%	1.01	31.44%		0.12%
-9	0.02%	2.60%	0.09%	0.16	87.38%		0.13%
-8	-0.11%	2.53%	0.09%	-0.98	32.79%		0.02%
-7	-0.02%	2.49%	0.09%	-0.22	82.79%		0.00%
-6	-0.02%	2.05%	0.07%	-0.13	89.39%		-0.02%
-5	0.05%	2.40%	0.09%	0.46	64.32%		0.03%
-4	0.06%	2.19%	0.08%	0.55	58.47%		0.10%
-3	0.18%	3.15%	0.11%	1.55	12.19%		0.27%
-2	-0.07%	2.23%	0.08%	-0.65	51.70%		0.20%
-1	0.01%	2.29%	0.08%	0.09	93.15%		0.21%
0	-0.05%	4.55%	0.16%	-0.42	67.75%		0.16%
1	0.39%	3.98%	0.14%	3.42	0.06%	***	0.55%
2	-0.06%	2.67%	0.09%	-0.54	58.84%		0.49%
3	-0.03%	2.68%	0.10%	-0.26	79.18%		0.46%
4	-0.15%	2.43%	0.09%	-1.34	18.06%		0.31%
5	-0.13%	2.68%	0.10%	-1.16	24.81%		0.18%
6	-0.10%	2.16%	0.08%	-0.89	37.18%		0.07%
7	-0.17%	2.40%	0.09%	-1.46	14.46%		-0.09%
8	-0.08%	2.48%	0.09%	-0.73	46.63%		-0.18%
9	-0.14%	2.08%	0.07%	-1.25	21.24%		-0.32%
10	-0.04%	2.28%	0.08%	-0.37	71.00%		-0.36%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 17: Descriptive statistics - Constant Mean Return Model - Buyer

Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
[-1; +1]	792	-26.51%	48.24%	6.31%	0.91	6.90
[-3; +3]	792	-28.55%	63.72%	7.81%	1.24	7.67
[-5; +5]	792	-37.47%	61.88%	9.49%	1.08	6.38
[-10; +10]	792	-52.18%	67.50%	12.16%	0.47	4.88

Source: Author's own creation.

Capital Asset Pricing Model - Target

Appendix 18: AAR - Capital Asset Pricing Model - Target (Local index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.22%	3.54%	0.13%	1.86	6.35%	*	0.22%
-9	0.12%	3.31%	0.12%	1.03	30.34%		0.35%
-8	0.30%	3.85%	0.14%	2.46	1.41%	**	0.64%
-7	0.31%	4.09%	0.15%	2.58	0.99%	***	0.95%
-6	0.50%	3.81%	0.14%	4.16	0.00%	***	1.45%
-5	0.25%	3.17%	0.11%	2.08	3.74%	**	1.70%
-4	0.29%	3.07%	0.11%	2.39	1.72%	**	1.99%
-3	0.37%	5.36%	0.19%	3.10	0.20%	***	2.36%
-2	0.46%	5.37%	0.19%	3.79	0.02%	***	2.82%
-1	1.12%	5.37%	0.19%	9.36	0.00%	***	3.94%
0	9.28%	17.54%	0.62%	77.27	0.00%	***	13.22%
1	3.24%	12.98%	0.46%	26.98	0.00%	***	16.45%
2	0.63%	7.31%	0.26%	5.25	0.00%	***	17.08%
3	0.18%	3.47%	0.12%	1.50	13.41%		17.26%
4	0.09%	2.47%	0.09%	0.77	44.43%		17.36%
5	0.00%	2.65%	0.09%	-0.03	97.62%		17.35%
6	-0.08%	4.50%	0.16%	-0.68	49.47%		17.27%
7	-0.02%	4.71%	0.17%	-0.15	87.69%		17.25%
8	0.11%	4.46%	0.16%	0.93	35.52%		17.36%
9	0.03%	2.47%	0.09%	0.25	80.65%		17.39%
10	-0.01%	2.21%	0.08%	-0.05	96.37%		17.39%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 19: AAR - Capital Asset Pricing Model - Target (European index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.22%	3.54%	0.13%	1.86	6.32%	*	0.22%
-9	0.12%	3.31%	0.12%	1.03	30.25%		0.35%
-8	0.30%	3.85%	0.14%	2.46	1.40%	**	0.64%
-7	0.31%	4.09%	0.15%	2.59	0.99%	***	0.95%
-6	0.50%	3.81%	0.14%	4.16	0.00%	***	1.45%
-5	0.25%	3.17%	0.11%	2.09	3.72%	**	1.70%
-4	0.29%	3.07%	0.11%	2.39	1.71%	**	1.99%
-3	0.37%	5.36%	0.19%	3.11	0.20%	***	2.36%
-2	0.46%	5.37%	0.19%	3.79	0.02%	***	2.82%
-1	1.12%	5.38%	0.19%	9.36	0.00%	***	3.94%
0	9.28%	17.54%	0.62%	77.28	0.00%	***	13.22%
1	3.24%	12.97%	0.46%	26.99	0.00%	***	16.46%
2	0.63%	7.31%	0.26%	5.25	0.00%	***	17.09%
3	0.18%	3.47%	0.12%	1.50	13.36%		17.27%
4	0.09%	2.47%	0.09%	0.77	44.31%		17.36%
5	0.00%	2.65%	0.09%	-0.03	97.77%		17.36%
6	-0.08%	4.50%	0.16%	-0.68	49.59%		17.27%
7	-0.02%	4.70%	0.17%	-0.15	87.84%		17.26%
8	0.11%	4.46%	0.16%	0.93	35.43%		17.37%
9	0.03%	2.47%	0.09%	0.25	80.51%		17.40%
10	-0.01%	2.21%	0.08%	-0.04	96.52%		17.39%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 20: Descriptive statistics - Capital Asset Pricing Model - Target

Index	Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
Local	[-1; +1]	792	-63.30%	200.55%	21.20%	2.20	12.37
	[-3; +3]	792	-90.66%	157.70%	23.08%	1.29	6.87
	[-5; +5]	792	-91.09%	157.92%	23.50%	1.20	5.49
	[-10; +10]	792	-80.20%	157.85%	24.90%	1.07	4.45
European	[-1; +1]	792	-63.25%	200.62%	21.20%	2.20	12.38
	[-3; +3]	792	-90.81%	157.88%	23.07%	1.28	6.88
	[-5; +5]	792	-91.71%	158.20%	23.51%	1.19	5.52
	[-10; +10]	792	-81.39%	158.40%	24.89%	1.06	4.53

Source: Author's own creation.

Capital Asset Pricing Model - Buyer

Appendix 21: AAR - Capital Asset Pricing Model - Buyer (Local index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.16%	3.49%	0.12%	1.38	16.93%		0.16%
-9	0.06%	2.60%	0.09%	0.53	59.77%		0.22%
-8	-0.07%	2.53%	0.09%	-0.61	54.22%		0.15%
-7	0.02%	2.48%	0.09%	0.15	87.95%		0.17%
-6	0.03%	2.04%	0.07%	0.24	81.37%		0.19%
-5	0.10%	2.40%	0.09%	0.83	40.54%		0.29%
-4	0.10%	2.18%	0.08%	0.92	36.01%		0.39%
-3	0.22%	3.16%	0.11%	1.92	5.55%	*	0.61%
-2	-0.03%	2.22%	0.08%	-0.28	78.02%		0.58%
-1	0.05%	2.28%	0.08%	0.46	64.92%		0.63%
0	-0.01%	4.54%	0.16%	-0.05	96.26%		0.63%
1	0.43%	3.98%	0.14%	3.79	0.02%	***	1.06%
2	-0.02%	2.66%	0.09%	-0.17	86.33%		1.04%
3	0.01%	2.68%	0.10%	0.10	91.64%		1.05%
4	-0.11%	2.43%	0.09%	-0.97	33.18%		0.94%
5	-0.09%	2.69%	0.10%	-0.79	43.16%		0.85%
6	-0.06%	2.15%	0.08%	-0.52	60.00%		0.79%
7	-0.12%	2.38%	0.08%	-1.09	27.55%		0.67%
8	-0.04%	2.48%	0.09%	-0.36	71.91%		0.63%
9	-0.10%	2.07%	0.07%	-0.88	37.98%		0.53%
10	0.00%	2.26%	0.08%	0.00	99.77%		0.52%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 22: AAR - Capital Asset Pricing Model - Buyer (European index)

Day	AAR	Std. Dev.	Std. Error	T-value	P-value	Significance level	CAAR
-10	0.16%	3.49%	0.12%	1.40	16.27%		0.16%
-9	0.06%	2.60%	0.09%	0.55	58.28%		0.22%
-8	-0.07%	2.53%	0.09%	-0.59	55.66%		0.16%
-7	0.02%	2.48%	0.09%	0.17	86.25%		0.18%
-6	0.03%	2.04%	0.07%	0.26	79.70%		0.20%
-5	0.10%	2.40%	0.09%	0.85	39.33%		0.30%
-4	0.11%	2.18%	0.08%	0.94	34.88%		0.41%
-3	0.22%	3.16%	0.11%	1.94	5.28%	**	0.63%
-2	-0.03%	2.22%	0.08%	-0.26	79.69%		0.60%
-1	0.05%	2.28%	0.08%	0.48	63.37%		0.66%
0	0.00%	4.54%	0.16%	-0.03	97.98%		0.65%
1	0.44%	3.98%	0.14%	3.82	0.01%	***	1.09%
2	-0.02%	2.66%	0.09%	-0.15	88.03%		1.07%
3	0.01%	2.68%	0.10%	0.13	89.93%		1.09%
4	-0.11%	2.43%	0.09%	-0.95	34.27%		0.98%
5	-0.09%	2.69%	0.10%	-0.77	44.44%		0.89%
6	-0.06%	2.15%	0.08%	-0.50	61.51%		0.83%
7	-0.12%	2.37%	0.08%	-1.07	28.51%		0.71%
8	-0.04%	2.48%	0.09%	-0.34	73.54%		0.67%
9	-0.10%	2.07%	0.07%	-0.86	39.16%		0.57%
10	0.00%	2.27%	0.08%	0.02	98.50%		0.58%

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.
Source: Author's own creation.

Appendix 23: Descriptive statistics - Capital Asset Pricing Model - Buyer

Index	Event window	N	Minimum	Maximum	Std. Dev.	Skewness	Kurtosis
Local	[-1; +1]	792	-25.17%	47.50%	6.26%	0.91	6.70
	[-3; +3]	792	-22.81%	62.01%	7.72%	1.29	7.17
	[-5; +5]	792	-38.49%	59.18%	9.38%	1.11	6.20
	[-10; +10]	792	-48.64%	71.60%	11.74%	0.63	4.99
European	[-1; +1]	792	-25.13%	47.20%	6.25%	0.89	6.59
	[-3; +3]	792	-22.83%	61.30%	7.69%	1.25	6.93
	[-5; +5]	792	-38.61%	58.08%	9.34%	1.02	5.90
	[-10; +10]	792	-48.93%	71.03%	11.59%	0.54	4.90

Source: Author's own creation.

Appendix C.2: Hypothesis 2: Multivariate analysis

Target

Appendix 24: Robustness check - Market Model - Target (European index)

Event window	Residual mean	Ramsey RESET Test	Skewness	Kurtosis	Jarque-Bera Test	Anderson-Darling Test	Breusch-Pagan Test	White Test	Durbin-Watson Test	VIF Test (max)	R-squared	Adjusted R-squared
[-1; +1]	0.0000	8.19	2.20	12.38	5620.60	13.78	61.66	38.31	1.96	3.99	0.22	0.16
		0.03%			**0.00%**	**0.00%**	**38.12%**	**0.00%**	**24.79%**			
[-3; +3]	0.0000	3.84	1.32	6.69	1268.27	10.83	79.32	40.82	1.97	3.99	0.23	0.17
		2.19%			**0.00%**	**0.00%**	**4.00%**	**0.00%**	**31.40%**			
[-5; +5]	0.0000	2.86	1.29	5.23	840.43	8.54	81.86	37.51	1.94	3.99	0.23	0.17
		5.77%			**0.00%**	**0.00%**	**4.00%**	**0.00%**	**31.40%**			
[-10; +10]	0.0000	3.48	1.20	4.45	697.84	8.17	105.06	36.29	1.88	3.99	0.21	0.15
		3.13%			**0.00%**	**0.00%**	**0.02%**	**0.00%**	**3.75%**			

Where % represents the respective p-values.
Source: Author's own creation.

Appendix 25: Robustness check - Constant Mean Return Model - Target

Event window	Residual mean	Ramsey RESET Test	Skewness	Kurtosis	Jarque-Bera Test	Anderson-Darling Test	Breusch-Pagan Test	White Test	Durbin-Watson Test	VIF Test (max)	R-squared	Adjusted R-squared
[-1; +1]	0.0000	8.66	2.21	12.38	5631.80	13.54	60.70	37.50	1.96	3.99	0.22	0.16
		0.02%			**0.00%**	**0.00%**	**41.42%**	**0.00%**	**28.34%**			
[-3; +3]	0.0000	3.71	1.34	6.70	1274.69	10.95	78.36	40.00	1.98	3.99	0.23	0.17
		2.50%			**0.00%**	**0.00%**	**4.67%**	**0.00%**	**34.18%**			
[-5; +5]	0.0000	2.91	1.26	5.30	847.34	8.14	79.48	37.14	1.94	3.99	0.23	0.17
		5.53%			**0.00%**	**0.00%**	**3.89%**	**0.00%**	**16.39%**			
[-10; +10]	0.0000	3.28	1.17	4.36	633.51	6.86	101.48	34.39	1.90	3.99	0.21	0.15
		3.82%			**0.00%**	**0.00%**	**0.05%**	**0.00%**	**6.96%**			

Where % represents the respective p-values.
Source: Author's own creation.

Appendix 26: Robustness check - Capital Asset Pricing Model - Target (European index)

Event window	Residual mean	Ramsey RESET Test	Skewness	Kurtosis	Jarque-Bera Test	Anderson-Darling Test	Breusch-Pagan Test	White Test	Durbin-Watson Test	VIF Test (max)	R-squared	Adjusted R-squared
[-1; +1]	0.0000	8.54	2.20	12.38	5623.70	13.54	60.94	37.21	1.96	3.99	0.22	0.16
		0.02%			**0.00%**	**0.00%**	**40.59%**	**0.00%**	**28.29%**			
[-3; +3]	0.0000	3.06	1.28	6.88	1338.90	11.46	77.96	37.82	1.98	3.99	0.23	0.17
		4.76%			**0.00%**	**0.00%**	**4.98%**	**0.00%**	**37.18%**			
[-5; +5]	0.0000	1.81	1.19	5.52	901.33	8.64	78.43	34.71	1.94	3.99	0.23	0.17
		16.45%			**0.00%**	**0.00%**	**4.62%**	**0.00%**	**19.85%**			
[-10; +10]	0.0000	1.73	1.06	4.53	649.12	7.34	98.88	30.62	1.92	3.99	0.22	0.16
		17.73%			**0.00%**	**0.00%**	**0.09%**	**0.00%**	**10.70%**			

Where % represents the respective p-values.
Source: Author's own creation.

Buyer

Appendix 27: Robustness check - Market Model - Buyer (European index)

Event window	Residual mean	Ramsey RESET Test	Skewness	Kurtosis	Jarque-Bera Test	Anderson-Darling Test	Breusch-Pagan Test	White Test	Durbin-Watson Test	VIF Test (max)	R-squared	Adjusted R-squared
[-1; +1]	0.0000	6.42 **0.17%**	0.94	6.56	759.90 **0.00%**	8.82 **0.00%**	97.35 **0.22%**	40.78 **0.88%**	2.08 **35.52%**	4.37	0.13	0.06
[-3; +3]	0.0000	5.45 **0.45%**	1.13	6.42	700.56 **0.00%**	8.05 **0.00%**	90.82 **0.02%**	47.61 **0.00%**	2.01 **51.87%**	4.37	0.14	0.08
[-5; +5]	0.0000	10.94 **0.00%**	1.22	6.78	867.91 **0.00%**	8.74 **0.00%**	99.67 **0.17%**	50.07 **0.00%**	2.01 **50.97%**	4.37	0.11	0.04
[-10; +10]	0.0000	2.81 **6.10%**	0.42	5.13	679.61 **0.00%**	4.95 **0.00%**	89.71 **0.04%**	9.47 **0.00%**	1.98 **83.63%**	4.37	0.06	-0.01

Where % represents the respective p-values.
Source: Author's own creation.

Appendix 28: Robustness check - Constant Mean Return Model - Buyer

Event window	Residual mean	Ramsey RESET Test	Skewness	Kurtosis	Jarque-Bera Test	Anderson-Darling Test	Breusch-Pagan Test	White Test	Durbin-Watson Test	VIF Test (max)	R-squared	Adjusted R-squared
[-1; +1]	0.0000	5.18 **0.58%**	0.89	6.59	807.89 **0.00%**	7.97 **0.00%**	98.71 **0.03%**	38.63 **0.00%**	2.04 **69.77%**	4.37	0.12	0.06
[-3; +3]	0.0000	5.65 **0.37%**	1.25	6.93	978.80 **0.00%**	8.03 **0.00%**	89.33 **0.23%**	50.90 **0.00%**	1.93 **12.94%**	4.37	0.13	0.07
[-5; +5]	0.0000	6.55 **0.15%**	1.02	5.90	764.79 **0.00%**	8.27 **0.00%**	104.80 **0.01%**	43.93 **0.00%**	1.89 **5.61%**	4.37	0.10	0.03
[-10; +10]	0.0000	0.67 **51.17%**	0.54	4.90	652.09 **0.00%**	6.19 **0.00%**	109.35 **0.00%**	4.78 **9.18%**	1.85 **1.57%**	4.37	0.07	0.00

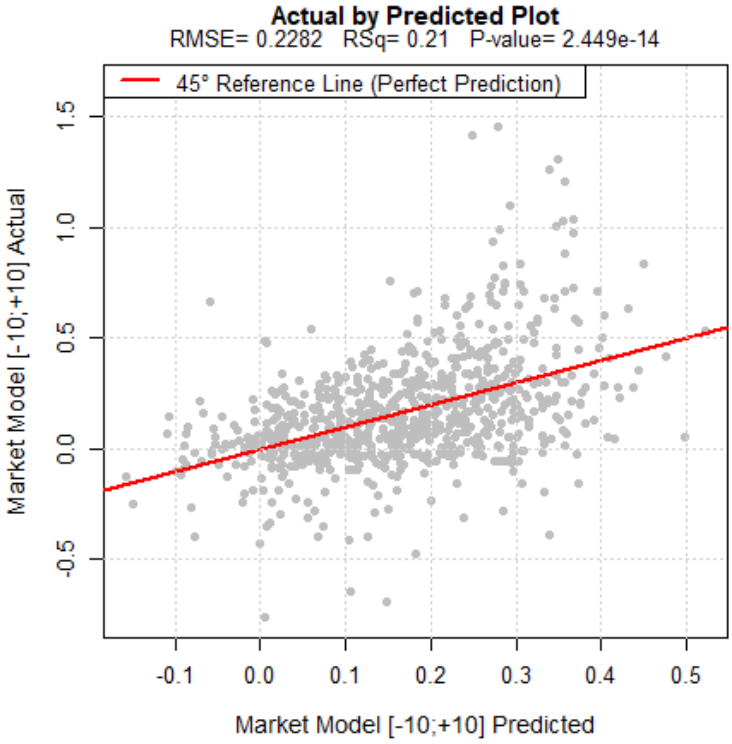
Where % represents the respective p-values.
Source: Author's own creation.

Appendix 29: Robustness check - Capital Asset Pricing Model - Buyer (European index)

Event window	Residual mean	Ramsey RESET Test	Skewness	Kurtosis	Jarque-Bera Test	Anderson-Darling Test	Breusch-Pagan Test	White Test	Durbin-Watson Test	VIF Test (max)	R-squared	Adjusted R-squared
[-1; +1]	0.0000	3.77 **2.36%**	0.91	6.90	749.42 **0.00%**	7.68 **0.00%**	97.19 **0.04%**	36.33 **0.00%**	2.04 **70.12%**	4.37	0.12	0.06
[-3; +3]	0.0000	4.33 **1.35%**	1.24	7.67	879.89 **0.00%**	7.69 **0.00%**	90.65 **0.18%**	37.19 **0.00%**	1.91 **9.35%**	4.37	0.13	0.07
[-5; +5]	0.0000	3.38 **3.45%**	1.08	6.38	749.46 **0.00%**	8.30 **0.00%**	102.08 **0.01%**	30.17 **0.00%**	1.88 **3.29%**	4.37	0.09	0.03
[-10; +10]	0.0000	2.80 **6.14%**	0.47	4.88	802.12 **0.00%**	5.82 **0.00%**	121.12 **0.00%**	2.55 **28.00%**	1.80 **0.16%**	4.37	0.07	0.00

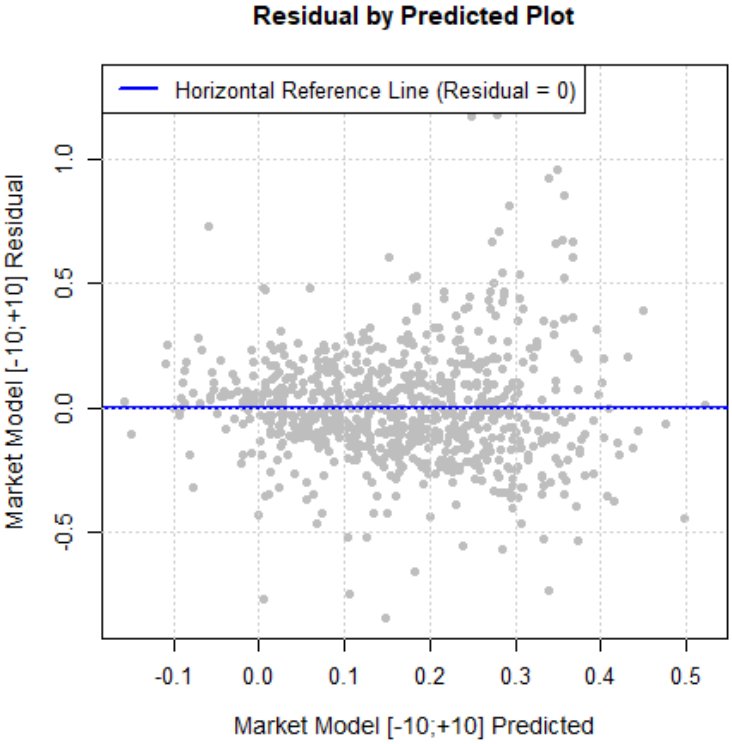
Where % represents the respective p-values.
Source: Author's own creation.

Appendix 30: Actual by Predicted Plot - Market Model - Target



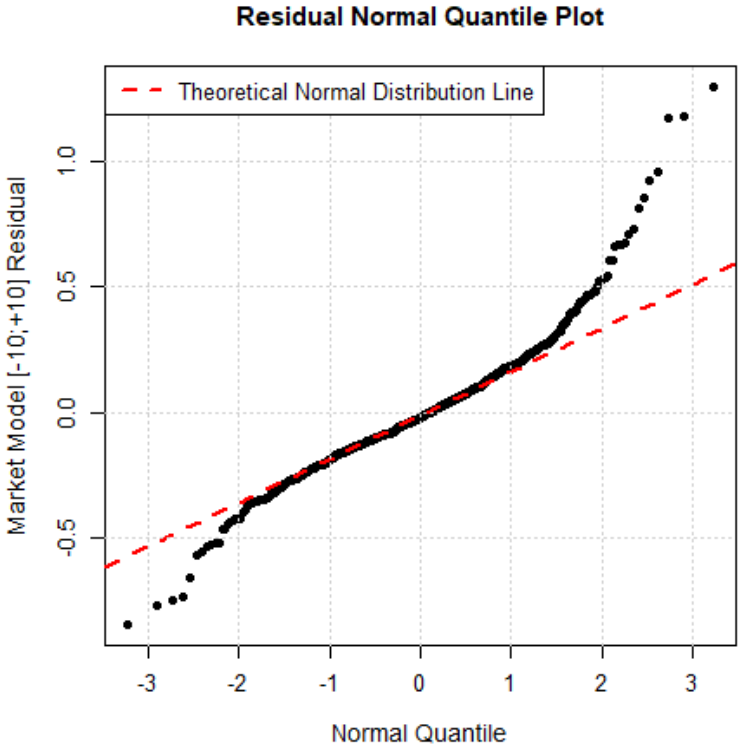
Source: Author's own creation.

Appendix 31: Residual by Predicted Plot - Market Model - Target



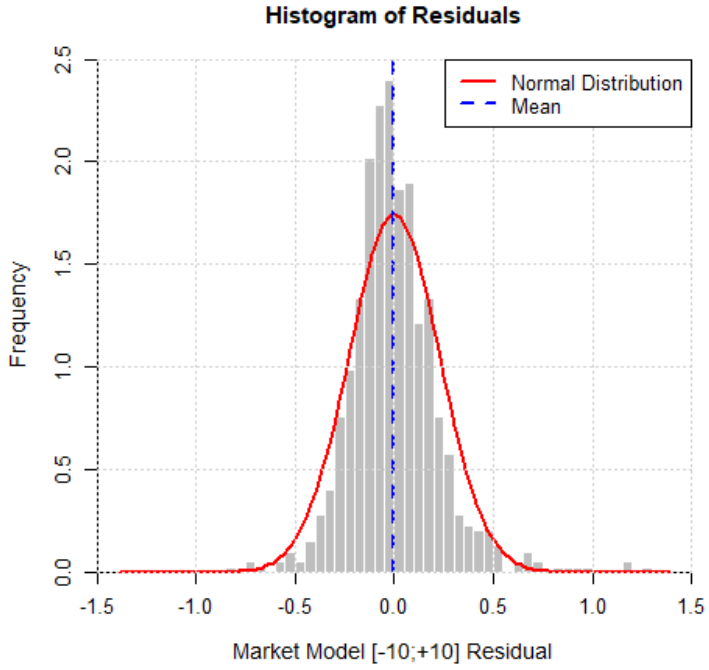
Source: Author's own creation.

Appendix 32: Q-Q Plot of Residuals - Market Model - Target



Source: Author's own creation.

Appendix 33: Histogram of Residuals - Market Model - Target



Source: Author's own creation.

Appendix 34: Correlation Matrix - Market Model - Target

Categorical Variable	Dummy Variable	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czechia	Denmark	Finland	France
Country	Austria	1.00	-0.01	0.00	-0.01	-0.01	-0.01	-0.02	-0.02	-0.03
	Belgium	-0.01	1.00	0.00	-0.01	-0.01	-0.01	-0.02	-0.02	-0.04
	Bulgaria	0.00	0.00	1.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
	Croatia	-0.01	-0.01	0.00	1.00	0.00	0.00	-0.01	-0.01	-0.02
	Cyprus	-0.01	-0.01	0.00	0.00	1.00	-0.01	-0.02	-0.01	-0.03
	Czechia	-0.01	-0.01	0.00	0.00	-0.01	1.00	-0.01	-0.01	-0.02
	Denmark	-0.02	-0.02	-0.01	-0.01	-0.02	-0.01	1.00	-0.03	-0.06
	Finland	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.03	1.00	-0.06
	France	-0.03	-0.04	-0.01	-0.02	-0.03	-0.02	-0.06	-0.06	1.00
	Germany	-0.03	-0.03	-0.01	-0.02	-0.02	-0.02	-0.05	-0.04	-0.08
	Gibraltar	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02
	Greece	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.03	-0.03	-0.06
	Greenland	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
	Hungary	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02
	Iceland	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
	Ireland	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.02	-0.02	-0.04
	Italy	-0.02	-0.03	-0.01	-0.01	-0.02	-0.02	-0.05	-0.04	-0.08
	Lithuania	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
	Luxembourg	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.02
	Malta	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02
	Monaco	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02
	Netherlands	-0.02	-0.02	-0.01	-0.01	-0.02	-0.01	-0.04	-0.03	-0.06
	Norway	-0.02	-0.03	-0.01	-0.01	-0.02	-0.02	-0.04	-0.04	-0.07
	Poland	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.02	-0.02	-0.04
	Serbia	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02
	Slovakia	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
	Slovenia	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.02
	Spain	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.03	-0.03	-0.05
	Sweden	-0.03	-0.04	-0.01	-0.02	-0.02	-0.02	-0.06	-0.05	-0.10
	Switzerland	-0.02	-0.03	-0.01	-0.01	-0.02	-0.01	-0.04	-0.04	-0.07
	Türkiye	-0.01	-0.02	0.00	-0.01	-0.01	-0.01	-0.03	-0.02	-0.04
	Ukraine	-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02
	United Kingdom	-0.06	-0.08	-0.02	-0.04	-0.05	-0.04	-0.12	-0.11	-0.20
Industry	Communication Services	-0.02	-0.03	-0.01	-0.01	-0.02	0.06	-0.05	0.06	-0.02
	Consumer Discretionary	-0.03	0.00	-0.01	0.05	-0.02	-0.02	-0.01	0.00	-0.06
	Consumer Staples	-0.02	0.02	0.15	-0.01	-0.02	-0.02	0.02	-0.01	0.02
	Energy	-0.02	0.07	-0.01	-0.01	0.13	0.07	-0.04	-0.04	-0.03
	Health Care	-0.03	0.01	-0.01	-0.02	-0.02	-0.02	0.02	-0.05	0.04
	Industrials	-0.02	-0.03	-0.02	0.02	-0.04	-0.03	-0.03	0.08	-0.06
	Information Technology	-0.04	0.01	-0.01	-0.02	-0.03	-0.03	-0.06	0.01	0.06
	Materials	0.03	0.02	-0.01	-0.01	-0.02	0.06	-0.02	-0.01	-0.02
	Real Estate	0.13	-0.04	-0.01	-0.02	-0.03	-0.02	-0.07	-0.01	0.15
	Utilities	-0.02	0.05	-0.01	-0.01	-0.01	-0.01	-0.03	0.02	0.03
Distressed	Distressed	0.05	-0.03	-0.02	0.01	0.02	-0.01	-0.09	-0.05	0.04
	Grey Zone	-0.05	-0.01	-0.02	0.02	-0.04	0.06	-0.06	0.01	0.02
	NA	0.04	0.01	0.07	0.02	0.07	0.00	0.18	-0.06	0.03
Relative size	Large	-0.06	0.04	-0.02	-0.04	0.06	-0.04	-0.03	-0.01	0.00
	Medium	0.06	-0.03	-0.03	0.04	-0.03	-0.02	0.01	0.04	-0.08
	NA	0.04	-0.03	-0.01	-0.01	0.07	-0.01	0.06	-0.04	0.00
Deal status	Announced	-0.01	-0.02	0.00	-0.01	-0.01	-0.01	-0.03	-0.02	-0.01
	Terminated/Withdrawn	0.05	-0.03	-0.02	0.03	0.05	0.01	0.00	0.02	-0.08
Deal attitude	Friendly to hostile	-0.01	0.07	0.00	-0.01	-0.01	-0.01	-0.02	-0.02	-0.04
	Hostile	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	0.00	-0.03	-0.01
Consideration	Hybrid	-0.05	-0.01	-0.02	-0.03	0.00	-0.03	-0.04	0.01	0.01
	Stock	-0.04	0.05	0.05	-0.04	0.05	-0.05	0.09	0.03	-0.05
Sponsor backed	Sponsor backed	0.05	0.02	0.03	0.04	0.06	0.01	0.04	0.02	0.03
Related industry	Related industry	0.05	-0.11	-0.07	0.03	0.04	-0.05	0.05	-0.01	-0.03
Cross-border	Cross-border	0.09	0.08	-0.03	0.00	0.04	0.06	-0.02	0.03	-0.06
Crisis	Crisis	0.03	-0.03	-0.01	-0.02	-0.02	-0.02	0.09	-0.05	-0.02

Source: Author's own creation.

[CONTINUED]

Germany	Gibraltar	Greece	Greenland	Hungary	Iceland	Ireland	Italy	Lithuania	Luxembourg	Malta	Monaco
-0.03	-0.01	-0.02	0.00	-0.01	0.00	-0.01	-0.02	0.00	-0.01	-0.01	-0.01
-0.03	-0.01	-0.02	0.00	-0.01	0.00	-0.01	-0.03	0.00	-0.01	-0.01	-0.01
-0.01	0.00	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00
-0.02	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00
-0.02	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.02	0.00	-0.01	0.00	0.00
-0.02	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.02	0.00	-0.01	0.00	0.00
-0.05	-0.01	-0.03	-0.01	-0.01	-0.01	-0.02	-0.05	-0.01	-0.01	-0.01	-0.01
-0.04	-0.01	-0.03	-0.01	-0.01	-0.01	-0.02	-0.04	-0.01	-0.01	-0.01	-0.01
-0.08	-0.02	-0.06	-0.01	-0.02	-0.01	-0.04	-0.08	-0.01	-0.02	-0.02	-0.02
1.00	-0.01	-0.04	-0.01	-0.02	-0.01	-0.03	-0.06	-0.01	-0.02	-0.02	-0.01
-0.01	1.00	-0.01	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00
-0.04	-0.01	1.00	-0.01	-0.01	-0.01	-0.02	-0.04	-0.01	-0.01	-0.01	-0.01
-0.01	0.00	-0.01	1.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00
-0.02	0.00	-0.01	0.00	1.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00
-0.01	0.00	-0.01	0.00	0.00	1.00	0.00	-0.01	0.00	0.00	0.00	0.00
-0.03	-0.01	-0.02	0.00	-0.01	0.00	1.00	-0.03	0.00	-0.01	-0.01	-0.01
-0.06	-0.01	-0.04	-0.01	-0.01	-0.01	-0.03	1.00	-0.01	-0.02	-0.01	-0.01
-0.01	0.00	-0.01	0.00	0.00	0.00	0.00	-0.01	1.00	0.00	0.00	0.00
-0.02	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.02	0.00	1.00	0.00	0.00
-0.02	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	1.00	0.00
-0.01	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	1.00
-0.05	-0.01	-0.03	-0.01	-0.01	-0.01	-0.02	-0.04	-0.01	-0.01	-0.01	-0.01
-0.06	-0.01	-0.04	-0.01	-0.01	-0.01	-0.03	-0.05	-0.01	-0.02	-0.01	-0.01
-0.03	-0.01	-0.02	0.00	-0.01	0.00	-0.01	-0.03	0.00	-0.01	-0.01	-0.01
-0.01	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00
-0.01	0.00	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00
-0.02	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.02	0.00	-0.01	0.00	0.00
-0.04	-0.01	-0.03	-0.01	-0.01	-0.01	-0.02	-0.04	-0.01	-0.01	-0.01	-0.01
-0.08	-0.02	-0.05	-0.01	-0.02	-0.01	-0.04	-0.07	-0.01	-0.02	-0.02	-0.02
-0.05	-0.01	-0.04	-0.01	-0.01	-0.01	-0.02	-0.05	-0.01	-0.01	-0.01	-0.01
-0.03	-0.01	-0.02	0.00	-0.01	0.00	-0.02	-0.03	0.00	-0.01	-0.01	-0.01
-0.01	0.00	-0.01	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00
-0.15	-0.03	-0.11	-0.02	-0.04	-0.02	-0.07	-0.14	-0.02	-0.04	-0.04	-0.03
-0.01	-0.01	-0.04	-0.01	-0.01	-0.01	0.02	0.04	-0.01	0.14	-0.01	-0.01
-0.02	0.16	0.00	-0.01	-0.02	-0.01	-0.04	-0.01	-0.01	-0.02	0.13	-0.02
-0.01	-0.01	-0.04	-0.01	-0.01	0.15	-0.03	-0.05	-0.01	-0.02	-0.01	-0.01
-0.05	-0.01	0.00	-0.01	0.08	-0.01	-0.03	-0.05	0.16	-0.02	-0.01	-0.01
0.04	-0.01	-0.05	-0.01	-0.02	-0.01	0.05	-0.02	-0.01	-0.02	0.06	-0.01
-0.09	-0.02	0.05	-0.02	-0.03	-0.02	0.14	-0.04	-0.02	0.01	-0.03	0.10
0.12	-0.02	-0.03	-0.01	0.03	-0.01	-0.05	-0.06	-0.01	-0.03	-0.02	-0.02
0.04	-0.01	0.03	-0.01	-0.01	-0.01	0.02	-0.03	-0.01	0.06	-0.01	-0.01
0.04	-0.02	-0.01	-0.01	-0.02	-0.01	-0.04	-0.02	-0.01	-0.02	-0.02	-0.02
0.06	-0.01	-0.03	-0.01	-0.01	-0.01	-0.02	0.11	-0.01	-0.01	-0.01	-0.01
0.00	-0.03	-0.01	-0.02	-0.04	-0.02	0.04	0.04	-0.02	0.03	0.01	0.02
0.06	-0.02	-0.01	-0.02	-0.03	-0.02	0.00	-0.05	-0.02	-0.03	-0.03	-0.02
-0.04	-0.03	0.10	0.07	0.02	-0.02	-0.06	0.08	-0.02	0.00	0.02	0.03
0.05	0.08	-0.01	0.06	0.01	-0.02	0.00	0.01	-0.02	-0.04	-0.04	0.03
-0.02	-0.04	0.04	-0.03	0.00	-0.03	0.00	-0.01	0.05	-0.02	0.00	0.01
0.01	-0.01	0.04	-0.01	-0.01	-0.01	-0.02	0.07	-0.01	0.08	0.09	-0.01
0.04	-0.01	0.03	0.00	-0.01	0.00	-0.02	0.05	0.00	-0.01	-0.01	-0.01
-0.03	0.11	0.00	0.08	0.03	-0.02	0.06	-0.03	-0.02	-0.03	-0.03	-0.02
-0.03	-0.01	-0.02	0.00	-0.01	0.00	-0.01	0.06	0.00	-0.01	-0.01	-0.01
-0.02	-0.01	0.01	-0.01	-0.01	-0.01	0.16	-0.04	-0.01	-0.01	-0.01	-0.01
0.00	0.10	-0.01	-0.02	-0.03	-0.02	0.05	-0.03	-0.02	0.01	0.07	-0.02
-0.07	-0.03	0.08	0.05	-0.04	-0.02	-0.03	0.06	-0.02	-0.01	-0.04	0.08
-0.07	0.04	-0.06	0.03	0.00	0.03	-0.03	-0.05	-0.05	0.01	0.00	-0.07
-0.04	0.03	-0.01	0.02	0.03	0.02	0.06	0.01	0.02	-0.05	-0.02	0.03
0.11	0.02	-0.11	0.05	0.08	0.05	0.00	-0.06	0.05	0.10	0.04	0.02
0.00	-0.01	0.01	-0.01	-0.02	-0.01	0.06	0.01	-0.01	-0.02	-0.02	-0.01

[CONTINUED]

Netherlands	Norway	Poland	Serbia	Slovakia	Slovenia	Spain	Sweden	Switzerland	Türkiye	Ukraine	United Kingdom
-0.02	-0.02	-0.01	-0.01	0.00	-0.01	-0.02	-0.03	-0.02	-0.01	-0.01	-0.06
-0.02	-0.03	-0.01	-0.01	0.00	-0.01	-0.02	-0.04	-0.03	-0.02	-0.01	-0.08
-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.02
-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.04
-0.02	-0.02	-0.01	0.00	0.00	-0.01	-0.01	-0.02	-0.02	-0.01	0.00	-0.05
-0.01	-0.02	-0.01	0.00	0.00	-0.01	-0.01	-0.02	-0.01	-0.01	0.00	-0.04
-0.04	-0.04	-0.02	-0.01	-0.01	-0.01	-0.03	-0.06	-0.04	-0.03	-0.01	-0.12
-0.03	-0.04	-0.02	-0.01	-0.01	-0.01	-0.03	-0.05	-0.04	-0.02	-0.01	-0.11
-0.06	-0.07	-0.04	-0.02	-0.01	-0.02	-0.05	-0.10	-0.07	-0.04	-0.02	-0.20
-0.05	-0.06	-0.03	-0.01	-0.01	-0.02	-0.04	-0.08	-0.05	-0.03	-0.01	-0.15
-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.03
-0.03	-0.04	-0.02	-0.01	-0.01	-0.01	-0.03	-0.05	-0.04	-0.02	-0.01	-0.11
-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.02
-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.04
-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.02
-0.02	-0.03	-0.01	-0.01	0.00	-0.01	-0.02	-0.04	-0.02	-0.02	-0.01	-0.07
-0.04	-0.05	-0.03	-0.01	-0.01	-0.02	-0.04	-0.07	-0.05	-0.03	-0.01	-0.14
-0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.02
-0.01	-0.02	-0.01	0.00	0.00	-0.01	-0.01	-0.02	-0.01	-0.01	0.00	-0.04
-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.04
-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.03
1.00	-0.04	-0.02	-0.01	-0.01	-0.01	-0.03	-0.06	-0.04	-0.03	-0.01	-0.12
-0.04	1.00	-0.03	-0.01	-0.01	-0.02	-0.03	-0.07	-0.05	-0.03	-0.01	-0.14
-0.02	-0.03	1.00	-0.01	0.00	-0.01	-0.02	-0.03	-0.02	-0.02	-0.01	-0.07
-0.01	-0.01	-0.01	1.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.03
-0.01	-0.01	0.00	0.00	1.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.02
-0.01	-0.02	-0.01	0.00	0.00	1.00	-0.01	-0.02	-0.01	-0.01	0.00	-0.04
-0.03	-0.03	-0.02	-0.01	-0.01	-0.01	1.00	-0.05	-0.03	-0.02	-0.01	-0.09
-0.06	-0.07	-0.03	-0.02	-0.01	-0.02	-0.05	1.00	-0.06	-0.04	-0.02	-0.19
-0.04	-0.05	-0.02	-0.01	-0.01	-0.01	-0.03	-0.06	1.00	-0.03	-0.01	-0.13
-0.03	-0.03	-0.02	-0.01	0.00	-0.01	-0.02	-0.04	-0.03	1.00	-0.01	-0.08
-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.01	-0.01	1.00	-0.03
-0.12	-0.14	-0.07	-0.03	-0.02	-0.04	-0.09	-0.19	-0.13	-0.08	-0.03	1.00
0.01	-0.03	0.27	-0.01	-0.01	-0.02	-0.04	0.01	-0.02	0.01	-0.01	0.00
-0.04	-0.03	-0.04	-0.02	-0.01	-0.02	-0.05	0.03	-0.04	0.03	-0.02	0.09
-0.01	0.08	-0.03	-0.01	-0.01	0.14	0.00	-0.03	-0.02	0.06	0.10	0.02
-0.04	0.17	-0.03	-0.01	-0.01	-0.02	-0.03	-0.07	-0.05	-0.03	-0.01	0.08
-0.03	-0.02	-0.03	-0.01	-0.01	0.05	-0.04	0.13	0.02	-0.04	-0.01	-0.03
0.08	-0.05	-0.03	-0.02	-0.02	0.01	-0.05	-0.01	0.03	0.01	-0.02	0.00
0.06	0.01	-0.05	-0.02	-0.01	-0.03	-0.04	0.05	0.01	-0.05	-0.02	-0.01
-0.04	-0.05	-0.03	-0.01	-0.01	-0.02	-0.04	-0.01	0.01	0.14	-0.01	0.01
0.00	-0.02	-0.04	-0.02	-0.01	-0.02	0.11	0.04	0.01	-0.05	-0.02	-0.04
-0.03	-0.04	-0.02	-0.01	-0.01	-0.01	0.14	-0.02	-0.03	-0.02	-0.01	-0.06
-0.02	0.01	0.03	-0.03	-0.02	-0.01	0.07	0.07	0.01	-0.09	-0.03	-0.02
0.07	-0.03	-0.03	-0.02	-0.02	0.01	-0.03	0.04	-0.08	0.03	-0.02	0.03
0.03	0.05	0.05	0.09	0.07	0.00	0.04	-0.09	0.01	0.04	0.09	-0.17
0.01	-0.03	0.03	-0.03	-0.02	-0.04	0.08	0.00	-0.01	-0.04	-0.03	0.00
0.00	0.03	-0.04	0.01	-0.03	-0.02	0.01	0.05	0.03	0.04	-0.04	-0.01
0.07	0.02	0.09	-0.01	-0.01	0.08	-0.03	-0.06	0.02	-0.03	0.12	-0.10
-0.03	0.01	-0.02	-0.01	0.00	-0.01	0.10	-0.01	-0.03	-0.02	-0.01	-0.02
-0.01	0.04	0.16	-0.02	-0.02	-0.03	0.04	0.02	-0.01	-0.04	-0.02	-0.01
-0.02	-0.03	0.08	-0.01	0.00	-0.01	0.12	0.00	0.03	-0.02	-0.01	0.02
-0.04	-0.01	0.17	-0.01	-0.01	-0.01	0.07	-0.03	0.03	-0.02	-0.01	0.01
-0.04	0.12	-0.03	-0.02	-0.02	-0.03	0.08	0.05	0.05	-0.07	-0.02	0.02
-0.02	-0.04	-0.05	-0.03	-0.02	-0.05	0.01	0.02	0.02	-0.02	-0.03	0.01
0.02	0.06	0.03	0.04	0.03	0.01	0.06	0.01	0.00	-0.11	-0.02	0.03
-0.05	0.05	0.03	0.03	0.02	0.04	-0.02	0.02	0.03	0.00	0.03	-0.05
0.13	0.06	-0.03	0.07	0.05	0.10	-0.09	-0.10	0.05	0.02	0.02	-0.06
0.01	-0.03	-0.03	0.09	-0.01	-0.02	-0.04	0.03	0.05	0.00	-0.01	0.01

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Communication Services	Consumer Discretionary	Consumer Staples	Energy	Health Care	Industrials	Information Technology	Materials	Real Estate	Utilities
-0.02	-0.03	-0.02	-0.02	-0.03	-0.02	-0.04	0.03	0.13	-0.02
-0.03	0.00	0.02	0.07	0.01	-0.03	0.01	0.02	-0.04	0.05
-0.01	-0.01	0.15	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01
-0.01	0.05	-0.01	-0.01	-0.02	0.02	-0.02	-0.01	-0.02	-0.01
-0.02	-0.02	-0.02	0.13	-0.02	-0.04	-0.03	-0.02	-0.03	-0.01
0.06	-0.02	-0.02	0.07	-0.02	-0.03	-0.03	0.06	-0.02	-0.01
-0.05	-0.01	0.02	-0.04	0.02	-0.03	-0.06	-0.02	-0.07	-0.03
0.06	0.00	-0.01	-0.04	-0.05	0.08	0.01	-0.01	-0.01	0.02
-0.02	-0.06	0.02	-0.03	0.04	-0.06	0.06	-0.02	0.15	0.03
-0.01	-0.02	-0.01	-0.05	0.04	-0.09	0.12	0.04	0.04	0.06
-0.01	0.16	-0.01	-0.01	-0.01	-0.02	-0.02	-0.01	-0.02	-0.01
-0.04	0.00	-0.04	0.00	-0.05	0.05	-0.03	0.03	-0.01	-0.03
-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01
-0.01	-0.02	-0.01	0.08	-0.02	-0.03	0.03	-0.01	-0.02	-0.01
-0.01	-0.01	0.15	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01
0.02	-0.04	-0.03	-0.03	0.05	0.14	-0.05	0.02	-0.04	-0.02
0.04	-0.01	-0.05	-0.05	-0.02	-0.04	-0.06	-0.03	-0.02	0.11
-0.01	-0.01	-0.01	0.16	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01
0.14	-0.02	-0.02	-0.02	-0.02	0.01	-0.03	0.06	-0.02	-0.01
-0.01	0.13	-0.01	-0.01	0.06	-0.03	-0.02	-0.01	-0.02	-0.01
-0.01	-0.02	-0.01	-0.01	-0.01	0.10	-0.02	-0.01	-0.02	-0.01
0.01	-0.04	-0.01	-0.04	-0.03	0.08	0.06	-0.04	0.00	-0.03
-0.03	-0.03	0.08	0.17	-0.02	-0.05	0.01	-0.05	-0.02	-0.04
0.27	-0.04	-0.03	-0.03	-0.03	-0.03	-0.05	-0.03	-0.04	-0.02
-0.01	-0.02	-0.01	-0.01	-0.01	-0.02	-0.02	-0.01	-0.02	-0.01
-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01
-0.02	-0.02	0.14	-0.02	0.05	0.01	-0.03	-0.02	-0.02	-0.01
-0.04	-0.05	0.00	-0.03	-0.04	-0.05	-0.04	-0.04	0.11	0.14
0.01	0.03	-0.03	-0.07	0.13	-0.01	0.05	-0.01	0.04	-0.02
-0.02	-0.04	-0.02	-0.05	0.02	0.03	0.01	0.01	0.01	-0.03
0.01	0.03	0.06	-0.03	-0.04	0.01	-0.05	0.14	-0.05	-0.02
-0.01	-0.02	0.10	-0.01	-0.01	-0.02	-0.02	-0.01	-0.02	-0.01
0.00	0.09	0.02	0.08	-0.03	0.00	-0.01	0.01	-0.04	-0.06
1.00	-0.07	-0.06	-0.05	-0.07	-0.12	-0.10	-0.06	-0.08	-0.04
-0.07	1.00	-0.07	-0.07	-0.09	-0.15	-0.13	-0.07	-0.11	-0.05
-0.06	-0.07	1.00	-0.05	-0.06	-0.11	-0.09	-0.05	-0.08	-0.04
-0.05	-0.07	-0.05	1.00	-0.06	-0.11	-0.09	-0.05	-0.08	-0.04
-0.07	-0.09	-0.06	-0.06	1.00	-0.13	-0.11	-0.06	-0.09	-0.04
-0.12	-0.15	-0.11	-0.11	-0.13	1.00	-0.20	-0.11	-0.17	-0.08
-0.10	-0.13	-0.09	-0.09	-0.11	-0.20	1.00	-0.09	-0.14	-0.06
-0.06	-0.07	-0.05	-0.05	-0.06	-0.11	-0.09	1.00	-0.08	-0.04
-0.08	-0.11	-0.08	-0.08	-0.09	-0.17	-0.14	-0.08	1.00	-0.06
-0.04	-0.05	-0.04	-0.04	-0.04	-0.08	-0.06	-0.04	-0.06	1.00
0.08	-0.08	-0.07	0.03	0.02	-0.02	-0.08	-0.06	0.35	0.06
0.00	0.04	0.03	0.00	-0.03	0.05	0.13	0.11	-0.06	-0.04
-0.05	-0.09	-0.06	-0.01	-0.05	-0.11	-0.11	-0.07	-0.12	0.01
-0.07	0.02	0.00	0.04	0.00	-0.01	-0.08	0.04	0.08	0.03
0.04	0.02	-0.06	0.00	0.00	0.01	-0.03	-0.02	-0.02	-0.09
0.10	-0.02	0.04	0.02	-0.03	0.00	-0.04	-0.05	-0.05	0.09
-0.03	0.02	-0.03	-0.03	0.03	-0.02	0.02	-0.03	0.01	-0.02
0.05	-0.04	-0.06	-0.02	-0.01	0.09	-0.09	-0.03	0.01	0.03
0.06	0.00	-0.03	-0.03	-0.03	-0.06	0.01	0.06	-0.04	0.05
-0.01	-0.01	-0.01	-0.01	-0.05	0.09	-0.05	0.05	-0.04	0.06
-0.02	0.02	0.05	0.00	0.03	-0.06	0.05	-0.06	0.01	0.02
0.00	-0.06	-0.05	0.09	-0.03	-0.01	-0.09	-0.02	0.01	-0.05
0.04	-0.05	-0.01	0.02	0.00	-0.18	-0.03	-0.12	0.12	0.00
0.01	-0.08	0.01	0.03	0.06	0.00	-0.15	-0.05	0.03	0.01
-0.01	-0.02	0.06	0.00	0.08	0.01	0.03	0.09	-0.12	-0.02
-0.02	0.03	-0.01	-0.03	-0.01	-0.02	0.00	0.03	0.01	-0.04

[CONTINUED]

Distressed	Grey Zone	NA	Large	Medium	NA	Announced	Terminated/Withdrawn
0.05	-0.05	0.04	-0.06	0.06	0.04	-0.01	0.05
-0.03	-0.01	0.01	0.04	-0.03	-0.03	-0.02	-0.03
-0.02	-0.02	0.07	-0.02	-0.03	-0.01	0.00	-0.02
0.01	0.02	0.02	-0.04	0.04	-0.01	-0.01	0.03
0.02	-0.04	0.07	0.06	-0.03	0.07	-0.01	0.05
-0.01	0.06	0.00	-0.04	-0.02	-0.01	-0.01	0.01
-0.09	-0.06	0.18	-0.03	0.01	0.06	-0.03	0.00
-0.05	0.01	-0.06	-0.01	0.04	-0.04	-0.02	0.02
0.04	0.02	0.03	0.00	-0.08	0.00	-0.01	-0.08
0.00	0.06	-0.04	0.05	-0.02	0.01	0.04	-0.03
-0.03	-0.02	-0.03	0.08	-0.04	-0.01	-0.01	0.11
-0.01	-0.01	0.10	-0.01	0.04	0.04	0.03	0.00
-0.02	-0.02	0.07	0.06	-0.03	-0.01	0.00	0.08
-0.04	-0.03	0.02	0.01	0.00	-0.01	-0.01	0.03
-0.02	-0.02	-0.02	-0.02	-0.03	-0.01	0.00	-0.02
0.04	0.00	-0.06	0.00	0.00	-0.02	-0.02	0.06
0.04	-0.05	0.08	0.01	-0.01	0.07	0.05	-0.03
-0.02	-0.02	-0.02	-0.02	0.05	-0.01	0.00	-0.02
0.03	-0.03	0.00	-0.04	-0.02	0.08	-0.01	-0.03
0.01	-0.03	0.02	-0.04	0.00	0.09	-0.01	-0.03
0.02	-0.02	0.03	0.03	0.01	-0.01	-0.01	-0.02
-0.02	0.07	0.03	0.01	0.00	0.07	-0.03	-0.01
0.01	-0.03	0.05	-0.03	0.03	0.02	0.01	0.04
0.03	-0.03	0.05	0.03	-0.04	0.09	-0.02	0.16
-0.03	-0.02	0.09	-0.03	0.01	-0.01	-0.01	-0.02
-0.02	-0.02	0.07	-0.02	-0.03	-0.01	0.00	-0.02
-0.01	0.01	0.00	-0.04	-0.02	0.08	-0.01	-0.03
0.07	-0.03	0.04	0.08	0.01	-0.03	0.10	0.04
0.07	0.04	-0.09	0.00	0.05	-0.06	-0.01	0.02
0.01	-0.08	0.01	-0.01	0.03	0.02	-0.03	-0.01
-0.09	0.03	0.04	-0.04	0.04	-0.03	-0.02	-0.04
-0.03	-0.02	0.09	-0.03	-0.04	0.12	-0.01	-0.02
-0.02	0.03	-0.17	0.00	-0.01	-0.10	-0.02	-0.01
0.08	0.00	-0.05	-0.07	0.04	0.10	-0.03	0.05
-0.08	0.04	-0.09	0.02	0.02	-0.02	0.02	-0.04
-0.07	0.03	-0.06	0.00	-0.06	0.04	-0.03	-0.06
0.03	0.00	-0.01	0.04	0.00	0.02	-0.03	-0.02
0.02	-0.03	-0.05	0.00	0.00	-0.03	0.03	-0.01
-0.02	0.05	-0.11	-0.01	0.01	0.00	-0.02	0.09
-0.08	0.13	-0.11	-0.08	-0.03	-0.04	0.02	-0.09
-0.06	0.11	-0.07	0.04	-0.02	-0.05	-0.03	-0.03
0.35	-0.06	-0.12	0.08	-0.02	-0.05	0.01	0.01
0.06	-0.04	0.01	0.03	-0.09	0.09	-0.02	0.03
1.00	-0.31	-0.34	0.01	0.05	-0.11	0.05	0.12
-0.31	1.00	-0.26	0.03	0.04	-0.10	-0.02	0.00
-0.34	-0.26	1.00	-0.01	-0.10	0.36	0.01	-0.01
0.01	0.03	-0.01	1.00	-0.46	-0.12	0.00	0.09
0.05	0.04	-0.10	-0.46	1.00	-0.15	0.03	0.05
-0.11	-0.10	0.36	-0.12	-0.15	1.00	-0.03	-0.07
0.05	-0.02	0.01	0.00	0.03	-0.03	1.00	-0.06
0.12	0.00	-0.01	0.09	0.05	-0.07	-0.06	1.00
-0.06	0.02	0.01	0.11	-0.03	-0.03	0.13	0.05
0.06	0.06	-0.01	0.05	0.04	-0.04	-0.03	0.33
0.07	0.03	-0.07	0.08	0.12	-0.03	0.05	0.06
0.00	-0.05	0.14	0.29	0.02	0.01	-0.03	-0.07
0.07	-0.08	0.05	0.00	0.00	-0.06	-0.04	0.01
0.04	-0.04	0.08	0.08	0.13	0.01	-0.04	0.12
-0.08	0.02	-0.06	-0.11	-0.03	0.00	-0.06	0.05
0.05	-0.03	0.03	-0.04	0.04	-0.03	0.00	-0.02

[CONTINUED]

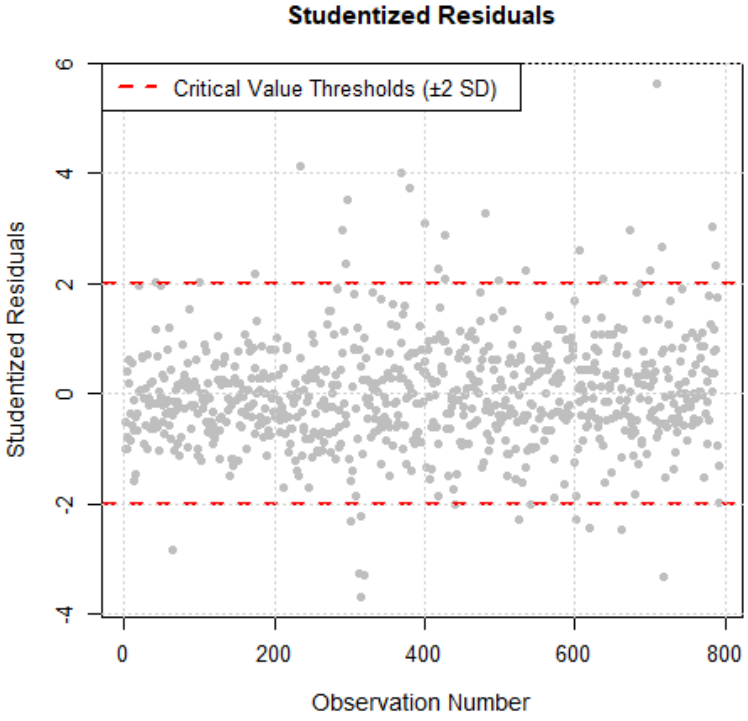
Friendly to hostile	Hostile	Hybrid	Stock	Sponsor backed	Related industry	Cross-border	Crisis
-0.01	-0.02	-0.05	-0.04	0.05	0.05	0.09	0.03
0.07	-0.02	-0.01	0.05	0.02	-0.11	0.08	-0.03
0.00	-0.01	-0.02	0.05	0.03	-0.07	-0.03	-0.01
-0.01	-0.01	-0.03	-0.04	0.04	0.03	0.00	-0.02
-0.01	-0.01	0.00	0.05	0.06	0.04	0.04	-0.02
-0.01	-0.01	-0.03	-0.05	0.01	-0.05	0.06	-0.02
-0.02	0.00	-0.04	0.09	0.04	0.05	-0.02	0.09
-0.02	-0.03	0.01	0.03	0.02	-0.01	0.03	-0.05
-0.04	-0.01	0.01	-0.05	0.03	-0.03	-0.06	-0.02
-0.03	-0.02	0.00	-0.07	-0.07	-0.04	0.11	0.00
-0.01	-0.01	0.10	-0.03	0.04	0.03	0.02	-0.01
-0.02	0.01	-0.01	0.08	-0.06	-0.01	-0.11	0.01
0.00	-0.01	-0.02	0.05	0.03	0.02	0.05	-0.01
-0.01	-0.01	-0.03	-0.04	0.00	0.03	0.08	-0.02
0.00	-0.01	-0.02	-0.02	0.03	0.02	0.05	-0.01
-0.01	0.16	0.05	-0.03	-0.03	0.06	0.00	0.06
0.06	-0.04	-0.03	0.06	-0.05	0.01	-0.06	0.01
0.00	-0.01	-0.02	-0.02	-0.05	0.02	0.05	-0.01
-0.01	-0.01	0.01	-0.01	0.01	-0.05	0.10	-0.02
-0.01	-0.01	0.07	-0.04	0.00	-0.02	0.04	-0.02
-0.01	-0.01	-0.02	0.08	-0.07	0.03	0.02	-0.01
-0.02	-0.04	-0.04	-0.02	0.02	-0.05	0.13	0.01
-0.03	-0.01	0.12	-0.04	0.06	0.05	0.06	-0.03
0.08	0.17	-0.03	-0.05	0.03	0.03	-0.03	-0.03
-0.01	-0.01	-0.02	-0.03	0.04	0.03	0.07	0.09
0.00	-0.01	-0.02	-0.02	0.03	0.02	0.05	-0.01
-0.01	-0.01	-0.03	-0.05	0.01	0.04	0.10	-0.02
0.12	0.07	0.08	0.01	0.06	-0.02	-0.09	-0.04
0.00	-0.03	0.05	0.02	0.01	0.02	-0.10	0.03
0.03	0.03	0.05	0.02	0.00	0.03	0.05	0.05
-0.02	-0.02	-0.07	-0.02	-0.11	0.00	0.02	0.00
-0.01	-0.01	-0.02	-0.03	-0.02	0.03	0.02	-0.01
0.02	0.01	0.02	0.01	0.03	-0.05	-0.06	0.01
0.06	-0.01	-0.02	0.00	0.04	0.01	-0.01	-0.02
0.00	-0.01	0.02	-0.06	-0.05	-0.08	-0.02	0.03
-0.03	-0.01	0.05	-0.05	-0.01	0.01	0.06	-0.01
-0.03	-0.01	0.00	0.09	0.02	0.03	0.00	-0.03
-0.03	-0.05	0.03	-0.03	0.00	0.06	0.08	-0.01
-0.06	0.09	-0.06	-0.01	-0.18	0.00	0.01	-0.02
0.01	-0.05	0.05	-0.09	-0.03	-0.15	0.03	0.00
0.06	0.05	-0.06	-0.02	-0.12	-0.05	0.09	0.03
-0.04	-0.04	0.01	0.01	0.12	0.03	-0.12	0.01
0.05	0.06	0.02	-0.05	0.00	0.01	-0.02	-0.04
-0.06	0.06	0.07	0.00	0.07	0.04	-0.08	0.05
0.02	0.06	0.03	-0.05	-0.08	-0.04	0.02	-0.03
0.01	-0.01	-0.07	0.14	0.05	0.08	-0.06	0.03
0.11	0.05	0.08	0.29	0.00	0.08	-0.11	-0.04
-0.03	0.04	0.12	0.02	0.00	0.13	-0.03	0.04
-0.03	-0.04	-0.03	0.01	-0.06	0.01	0.00	-0.03
0.13	-0.03	0.05	-0.03	-0.04	-0.04	-0.06	0.00
0.05	0.33	0.06	-0.07	0.01	0.12	0.05	-0.02
1.00	-0.02	0.07	0.01	0.02	-0.01	-0.07	0.05
-0.02	1.00	0.09	-0.09	-0.05	-0.02	0.03	0.04
0.07	0.09	1.00	-0.32	0.02	0.07	-0.05	0.01
0.01	-0.09	-0.32	1.00	0.02	0.09	-0.22	0.06
0.02	-0.05	0.02	0.02	1.00	0.00	0.03	-0.03
-0.01	-0.02	0.07	0.09	0.00	1.00	0.08	-0.01
-0.07	0.03	-0.05	-0.22	0.03	0.08	1.00	-0.04
0.05	0.04	0.01	0.06	-0.03	-0.01	-0.04	1.00

Appendix 35: Variance Inflation Factor - Market Model - Target

Categorical Variable	Dummy Variable	VIF
Country	Austria	1.22
	Belgium	1.30
	Bulgaria	1.08
	Croatia	1.07
	Cyprus	1.16
	Czechia	1.11
	Denmark	1.62
	Finland	1.48
	France	2.43
	Germany	1.92
	Gibraltar	1.12
	Greece	1.46
	Greenland	1.05
	Hungary	1.09
	Iceland	1.05
	Ireland	1.27
	Italy	1.79
	Lithuania	1.06
	Luxembourg	1.15
	Malta	1.11
	Monaco	1.07
	Netherlands	1.60
	Norway	1.82
	Poland	1.37
	Serbia	1.08
	Slovakia	1.03
	Slovenia	1.13
	Spain	1.45
	Sweden	2.26
	Switzerland	1.65
	Türkiye	1.30
	Ukraine	1.08
	United Kingdom	3.99
Industry	Communication Services	1.61
	Consumer Discretionary	1.87
	Consumer Staples	1.65
	Energy	1.48
	Health Care	1.66
	Industrials	2.57
	Information Technology	2.29
	Materials	1.60
	Real Estate	2.08
	Utilities	1.29
Distressed	Distressed	1.80
	Grey Zone	1.43
	NA	2.34
Relative size	Large	1.90
	Medium	1.70
	NA	1.41
Deal status	Announced	1.07
	Terminated/Withdrawn	1.29
Deal attitude	Friendly to hostile	1.11
	Hostile	1.26
Consideration	Hybrid	1.43
	Stock	1.65
Sponsor backed	Sponsor backed	1.19
Related industry	Related industry	1.20
Cross-border	Cross-border	1.33
Crisis	Crisis	1.07

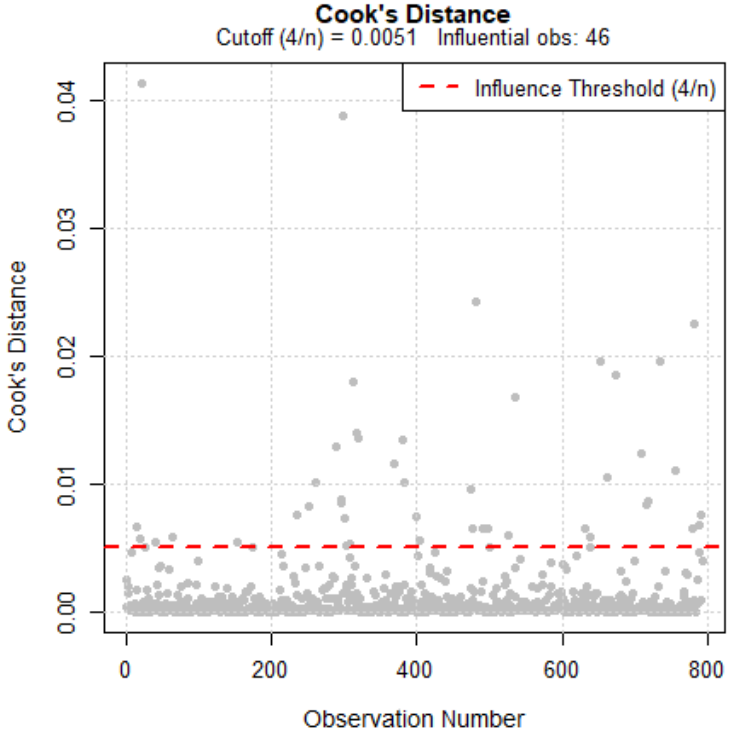
Source: Author's own creation.

Appendix 36: Studentized Residuals - Market Model - Target



Source: Author's own creation.

Appendix 37: Cook's Distance - Market Model - Target



Source: Author's own creation.