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Leverage and buyer returns in Nordic M&A

Evidence on value creation

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ABSTRACT:
This thesis examines the use of financial leverage and its effects on buyer return expectations and value creation in mergers and acquisitions conducted in the Nordic countries between 2014 and 2023. M&A transactions are a central element of corporate growth strategies, and capital structure has an important role in financing these deals and influencing their post-acquisition financial performance. This study investigates how leverage affects the acquiring firms' financial performance, measured by return on equity (ROE) and stock-based buy-and-hold abnormal return (BHAR).

This research applies several capital structure theories, including the trade-off theory, pecking order theory, and agency theory. Key concepts include financial leverage, value creation, capital structure, and M&A. Previous literature shows that companies tend to maintain their target capital structure even during large-scale acquisitions and that leverage may enable value creation or, alternatively, introduce risk.

The empirical part of this study is based on quantitative analysis using a dataset of 619 listed M&A transactions in Denmark, Finland, Norway, and Sweden, collected from the LSEG database. Iceland is excluded due to limited data availability. Regression models are used to assess the relationship between leverage and buyer returns over one year. The dependent variables in the analysis are ROE and BHAR. The study also considers the effect of transaction size, domestic versus cross-border nature, and the size of the acquiring firm.

The results indicate that financial leverage is commonly used, especially in larger and cross-border acquisitions. Leverage is found to be positively associated with short-term value creation, particularly when the acquirer has low initial debt levels and effective liquidity management. Furthermore, larger acquiring firms appear to be more successful in realizing synergies and achieving higher returns than smaller companies. Domestic acquisitions show a slightly better performance in operational terms compared to international transactions.

It is concluded that leverage can be an effective tool for value creation in Nordic M&A when aligned with the firm's capital structure strategy. The study provides practical insights on how debt financing may be strategically used to enhance shareholder value and improve financial outcomes in acquisitions. The Nordic context, characterized by economic stability, conservative financial culture, and strong corporate governance, provides a unique environment in which the effects of leverage on M&A performance can be examined in depth.

KEYWORDS: mergers and acquisitions, leverage, value creation, capital structure, Nordic countries, ROE, BHAR

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TIIVISTELMÄ:
Tässä pro gradu -tutkielmassa tarkastellaan velkavivun käyttöä ja sen vaikutuksia ostajan tuottoodotuksiin ja arvonluontiin Pohjoismaissa toteutetuissa yritysostoissa vuosina 2014–2023. Yritysjärjestelyt ovat keskeinen osa yritysten kasvustrategioita, ja pääomarakenteella on merkittävä rooli sekä yrityskauppojen rahoituksessa että niiden jälkeisessä taloudellisessa menestyksessä. Tutkielman tavoitteena on selvittää, kuinka velkavipu vaikuttaa ostajien taloudelliseen suorituskykyyn, mitattuna muun muassa oman pääoman tuotolla (ROE) ja osaketuotolla, eli suomeksi käännettynä ”osta ja pidä” -epänormaalituotolla (BHAR, Buy-and-Hold Abnormal Return).

Tutkimuksessa sovelletaan useita pääomarakenneteorioita, kuten trade-off -teoriaa, pecking order -teoriaa sekä agenttiteoriaa. Keskeisiä käsitteitä ovat velkavipu, arvonluonti, pääomarakenne sekä yritysostot ja -fuusiot. Aiempi kirjallisuus osoittaa, että yritykset pyrkivät säilyttämään tavoitellun pääomarakenteensa myös suurten yritysjärjestelyjen yhteydessä ja että velkavipu voi sekä mahdollistaa arvonluontia että lisätä riskejä.

Empiirinen osa perustuu kvantitatiiviseen analyysiin, jossa hyödynnetään LSEG-tietokannasta kerättyä aineistoa 619 listatusta yritysostosta Tanskassa, Suomessa, Norjassa ja Ruotsissa. Islanti on rajattu pois aineiston puutteellisuuden vuoksi. Analyysissä käytetään regressiomalleja, joilla tarkastellaan velkavivun yhteyttä ostajien tuottoihin yhden vuoden ajanjaksolla. Riippuvina muuttujina käytetään oman pääoman tuottoa ja osaketuottoa. Lisäksi tarkastellaan transaktioiden kokoa, kotimaisuutta sekä ostavan yrityksen suuruutta.

Tulokset osoittavat, että velkavivun käyttö on yleistä erityisesti suuremmissa ja rajat ylittävissä yritysostoissa. Velkavipu näyttää korreloivan positiivisesti ostajan lyhyen aikavälin arvonluonnin kanssa, erityisesti silloin, kun ostajalla on lähtötilanteessa alhainen velkaantumisaste ja toimiva likviditeetin hallinta. Lisäksi havaittiin, että suuremmat yritykset kykenevät paremmin realisoimaan synergioita ja saavuttamaan korkeampia tuottotasoja kuin pienemmät toimijat. Kotimaiset yritysostot näyttäisivät olevan hieman tehokkaampia operatiivisen suorituskyvyn näkökulmasta kuin kansainväliset kaupat.

Johtopäätöksenä voidaan todeta, että velkavipu voi toimia tehokkaana välineenä arvonluonnissa Pohjoismaisessa yritysostokontekstissa, kunhan se on linjassa yrityksen pääomarakennestrategian kanssa. Tutkimus tarjoaa hyödyllisiä näkemyksiä siitä, kuinka velkarahoitusta voidaan käyttää strategisesti arvon maksimoimiseksi ja taloudellisen suorituskyvyn parantamiseksi yritysjärjestelyissä.

AVAINSANAT: yritysostot ja -fuusiot, velkavipu, arvonluonti, pääomarakenne, Pohjoismaat, oman pääoman tuotto, BHAR

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Abbreviations

M&A	Mergers and Acquisitions
BHAR	Buy-and-Hold Abnormal Return
ROE	Return on Equity
OLS	Ordinary Least Squares

1 Introduction

1.1 Background and motivation

Mergers and acquisitions (M&A) are key drivers of corporate growth and market evolution globally. Capital structure decisions are fundamental to shaping corporate strategy, particularly in M&A. Decisions regarding leverage and financing influence a firm's ability to undertake acquisitions and determine the combined entity's long-term success and stability. A firm's leverage can be defined as the ratio of debt to equity of the firm's capital structure. This thesis investigates how leverage usage in Nordic M&A transactions between 2014 and 2023 influences buyer returns and value creation.

The Nordic region is known for its stable economic environment, strong regulatory frameworks, and emphasis on corporate governance, and it presents a unique setting for studying the effects of leverage in M&A transactions. Unlike the highly leveraged deals seen in private equity-driven markets, firms in the Nordic region often adopt a more conservative approach to financing. Therefore, assessing whether leverage-driven acquisitions yield the same benefits as in more aggressive financial markets is particularly relevant.

Historically, based on capital structure theories, a consensus exists that companies have optimal targeted capital structures determined by the right balance of costs and benefits of debt financing (Uysal, 2011). Additionally, most of the research primarily focuses on larger markets, such as the US, with less attention given to specific regional contexts, such as the Nordic countries, which this study focuses on, and where the outcomes of leveraged M&A deals might differ.

The trade-off theory suggests that firms maintain target leverage levels by balancing the benefits of tax shields against the costs of financial distress (Kraus & Litzenberger, 1973). However, deviations from these target leverage levels are standard, and their impact on

acquisition strategies remains a critical area of investigation (Harford et al., 2009; Uysal, 2011).

Harford et al. (2009) explore whether firms actively adhere to target leverage levels during significant acquisitions and found that deviations significantly influence financing choices. Firms with leverage above their targets are less inclined to finance acquisitions with debt and tend to rely more on equity. Moreover, their study reveals that firms gradually realign their leverage back to target levels post-acquisition, often reversing over 75% of the leverage deviations within five years. This behaviour emphasizes the strategic importance of target leverage adherence, particularly for high-growth firms that face more significant financial constraints.

However, the extent to which leverage deviations impact firm performance remains unclear, particularly in mid-sized transactions, which dominate the Nordic M&A landscape. Understanding whether leverage flexibility enhances or constrains post-acquisition performance is essential for investors, policymakers, and corporate decision-makers addressing the complexities of capital structure management.

Recent research highlights that value creation in M&A transactions depends on the target's pre-acquisition value and the acquiring firm's competencies. Alhenawi and Stilwell (2017) propose that firms with strong pre-acquisition performance and financial ratios are better positioned to realize synergies and sustain long-term value creation. Moreover, their study suggests that M&A success positively correlates with lower debt levels, efficient liquidity management, and acquirer-specific strengths. Notably, realizing M&A synergies often takes time as firms gradually internalize and optimize the acquired resources, underscoring the necessity of long-term performance evaluation. This perspective aligns with the growing consensus that short-term valuation measures may underestimate the actual benefits of M&A transactions, which are more accurately reflected in post-acquisition performance indicators such as return on equity and cumulative abnormal returns.

This study expands on this perspective by investigating whether acquiring firms in the Nordic region follow a similar trajectory regarding value realization and financial performance post-acquisition. Given the post-financial crisis context of the research period (2014-2023), this study also aims to provide a foundation for future studies to explore whether acquirers adjusted their leverage strategies in response to changing market conditions and regulatory pressures.

Similarly, Uysal (2011) examines the role of leverage deficits in shaping acquisition decisions. The study demonstrates that overleveraged firms are less likely to pursue acquisitions and, when they do, prefer smaller targets with lower premiums. These firms also tend to rebalance their capital structures in anticipation of future acquisitions. The findings suggest that the interplay between leverage deficits and acquisition strategies is critical to corporate behaviour, particularly in financial frictions.

Prior studies highlight the complex relationship between capital structure management and acquisition strategies, emphasizing the importance of maintaining optimal leverage levels. This thesis seeks to extend the understanding of this dynamic by focusing on the Nordic M&A landscape, examining how leverage influences optimal buyer returns and value creation in mergers and acquisitions. By analysing post-financial crisis transactions between 2014 and 2023, this research aims to contribute to the broader discourse on capital structure and corporate finance.

Using leverage in M&A is a well-established concept in corporate finance, yet its precise impact on optimal buyer returns and value creation remains debatable. While existing research has explored the role of leverage in increasing potential returns, there is limited understanding of how it directly influences the optimal returns of acquirers, and the long-term value created post-acquisition. Additionally, much of the literature primarily focuses on larger markets, with less attention given to specific regional contexts such as the Nordic countries. This project aims to fill this gap by analysing the effects of leverage usage in Nordic M&A transactions, addressing both the immediate financial outcomes

for buyers and the subsequent value creation. By examining a region often underrepresented in M&A research, this study will offer new insights into how leverage interacts with buyer expectations and performance in a distinct market, contributing to the broader understanding of leverage's role in corporate finance and M&A strategy. The study focuses on the time window of 2014-2023, specifically examining M&A transactions conducted in Denmark, Finland, Norway, and Sweden. Iceland is excluded from this study due to data availability issues and the fact that it only has a few transactions.

1.2 Purpose of the study

The core idea of this research is to analyse how leverage usage in Nordic M&A transactions influences buyer returns and value creation, focusing on short-term post-acquisition performance. Key concepts include leverage (debt financing), operational performance, value creation, stock price growth, and M&A outcomes.

To answer the research question, a quantitative analysis will be conducted using data from LSEG (ex., Refinitiv), focusing on M&A deals in Nordic countries over the past decade. The study will examine the relationship between leverage usage and key performance indicators, such as return on equity (ROE), stock price reactions, and short-term value creation post-acquisition according to buy-and-hold abnormal return (BHAR).

Different markets exhibit significantly varying practices and cultures when executing M&A deals. Some primarily use cash as a payment method, while others rely on share exchanges, with hybrid models also being utilized. In practice, cash transactions are more likely to involve financing through debt specifically taken on for the transaction, making them leveraged transactions.

Leverage is fundamental in mergers and acquisitions, influencing deal financing and post-acquisition performance. Using debt to fund acquisitions can provide financial benefits such as tax advantages, improved capital efficiency, and stronger managerial

discipline. However, its impact on short-term value creation remains a subject of debate. While some studies suggest that leveraged transactions enhance firm performance, others highlight the risks associated with excessive debt, such as financial distress and reduced strategic flexibility.

The underlying assumption of this study is that in Europe, particularly in the Nordic countries, most M&A transactions are executed through cash payments utilizing financial leverage. European and especially Nordic financial markets have traditionally been more bank-driven than, for example, the U.S. financial market.

Previous research has shown that capital structure decisions strongly influence acquisition strategies. For instance, Harford et al. (2009) and Uysal (2011) demonstrate that firms with a target-oriented capital structure are more likely to use debt financing in acquisitions, while firms with excessive leverage tend to avoid further debt. These findings suggest that financial leverage is not random but systematically related to firms' capital structure targets and strategic objectives. Consequently, the first research hypothesis examines how financial leverage has been used in the Nordic corporate acquisitions over the past decade.

H_1: Majority of the acquiring companies in the Nordics utilize leverage in their acquisitions.

Larger transactions are also expected to involve a greater use of financial leverage than smaller transactions, as alternative financing options are more readily available for smaller deals. Larger transactions often involve higher financing needs and, consequently, greater reliance on debt financing. According to Pires and Pereira (2020), leveraged acquisitions tend to occur sooner and with higher premiums, particularly in larger deals where tax benefits and financial flexibility can be maximized. This supports the view that financial leverage is more prevalent in high-value transactions.

The first sub-hypothesis examines whether there are differences in the use of financial leverage depending on whether the transaction size is above or below the average of the studied dataset.

H_{1a}: Financial leverage is used more in large transactions than in small transactions.

In cross-border transactions, firms may face increased complexity, higher costs, and integration risks, which can drive the need for structured financial solutions such as debt financing. Cioli et al. (2020) find that post-acquisition leverage tends to increase more significantly in cross-border transactions, especially for target firms. Additionally, Hu and Yang (2016) emphasize that firms with lower initial leverage are more likely to pursue and finance international acquisitions with debt.

The second sub-hypothesis examines whether there are differences in the use of financial leverage depending on whether the transaction occurs within a single Nordic country or across national borders.

H_{1b}: Financial leverage is utilized to a greater extent in cross-border transactions compared to transactions conducted within a single country.

Leverage is often assumed to induce financial discipline, improving post-acquisition performance through more efficient resource allocation and cost control. According to Alhenawi and Stilwell (2017), firms with lower debt levels, efficient liquidity management, and strong pre-acquisition performance are more likely to generate value from acquisitions. Furthermore, Harford et al. (2009) suggest that leverage-related decisions have long-term implications for firm performance due to post-deal capital structure adjustments.

Another key consideration is whether leverage leads to real improvements in firm performance after the acquisition. Firms that take on debt may experience greater financial

discipline, as they must generate sufficient cash flows to meet debt obligations. This could lead to better cost control, improved operational efficiency, and ultimately higher returns on investment. Additionally, if investors perceive leverage as a sign of confidence in the acquisition's success, stock prices may reflect this optimism over time. These arguments form the basis of the second hypothesis, measuring the acquiring firm's ROE one year after the transaction.

H_2: Leverage usage in M&A transactions positively impacts post-acquisition operative performance.

This hypothesis examines whether leveraged acquisitions lead to short-term improvements in firm performance, measured by return on equity (ROE) and stock price appreciation. If this hypothesis holds, leveraged acquisitions should be associated with higher returns on investment, stock price appreciation, and enhanced operational performance. The presence of debt may serve as an external control mechanism that ensures resources are allocated efficiently, potentially driving long-term value creation. However, if leverage is excessive or poorly managed, the financial burden could outweigh its benefits, leading to underperformance.

The practical execution of cross-border transactions and the realization of their expected efficiencies can often be more challenging compared to domestic transactions. This is due to factors such as greater differences in language and corporate cultures, regulatory discrepancies, and variations between countries in aspects such as employee participation in corporate decision-making.

Rose et al.'s (2017) research suggests that the average announcement returns for cross-border transactions are lower than for domestic transactions, although the differences are not always statistically significant. These results reflect various cross-border issues that may diminish value creation.

Therefore, this sub-hypothesis examines how profitability differences have evolved over the past decade between cross-border and domestic transactions conducted in the Nordic countries.

H_{2a}: Cross-border transactions provide lower impacts on post-acquisition operative performance compared to domestic transactions.

Larger companies typically have a more extensive management organization and greater experience in successfully executing M&A processes. This reduces the risk of failure in realizing synergies. Therefore, it is important to examine whether there are differences in the extent to which companies of different sizes have successfully achieved operational efficiency.

Larger companies often possess more developed managerial structures and integration capabilities, which can reduce post-acquisition risks and enhance operational efficiency. Alexandridis et al. (2017) show that large-cap acquisitions in the post-financial crisis period were associated with increased shareholder returns and synergy realization, indicating a size advantage in executing successful M&A strategies.

H_{2b}: Larger companies manage to achieve better impacts on post-acquisition operative performance compared to smaller companies.

This sub-hypothesis examines whether there are differences in operative performance depending on whether the acquirer's size is above or below the average of the studied dataset.

The strategic use of debt can enhance financial returns due to tax-deductible interest payments and lower cost of capital, particularly in low-interest-rate environments. Ang, Daher, and Ismail (2018) find that increased debt capacity after M&A improved long-term market performance for acquirers. Additionally, Pires and Pereira (2020)

demonstrate that leverage usage can accelerate acquisitions and increase deal premiums, which may translate into higher short-term value capture.

The third aspect focuses on the process of value creation. Beyond post-acquisition outcomes, leverage may also influence the financial returns of the acquiring firm at the time of the deal. Debt financing can lower the overall cost of capital due to tax-deductible interest payments, making it an attractive funding option compared to equity. Moreover, debt financing can provide higher return potential in a low-interest-rate environment, as companies can leverage relatively inexpensive capital to generate stronger financial outcomes. These factors suggest that firms utilizing more leverage in M&A deals may achieve superior financial returns, forming the basis of the third hypothesis.

H_3: Leverage usage in Nordic M&A transactions positively correlates with higher buyer short-term value creation.

This analysis examines how leverage usage in Nordic M&A transactions is positively associated with the buyer's BHAR (Buy-and-Hold Abnormal Return) one year after the transaction. This hypothesis suggests that acquirers using more debt in M&A deals experience higher financial returns, possibly due to tax benefits, reduced cost of capital, or improved financial discipline.

If leverage enhances buyer returns, it supports debt-financed acquisitions as an effective strategy for maximizing shareholder value. However, the relationship between leverage and optimal returns is complex, as financial gains depend on factors such as industry conditions, interest rates, and the ability of the acquiring firm to integrate and improve the target company’s operations.

By testing these hypotheses, this study seeks to provide empirical insights into the role of leverage in Nordic M&A transactions. The findings will contribute to a broader

understanding of how debt financing influences short-term financial performance and buyer returns in the post-acquisition phase.

1.2.1 Relevance

This research topic is relevant and valuable for several reasons. It has economic significance, as M&A has an important role in the Nordic region's economy, particularly in industries such as energy, technology, and manufacturing. Understanding the impact of leverage on value creation is important for improving investment decisions. The study broadens the current understanding and offers new, valuable investor insights by analysing how leverage influences buyer return expectations. This is particularly relevant in the Nordic market, which is known for its unique corporate governance structures and risk-averse financial culture.

Furthermore, the findings can support strategic decision-making processes. For companies planning M&A strategies, understanding the balance between debt financing and value creation can help them make more informed and effective choices. With their emphasis on sustainable growth, Nordic businesses can benefit from strategies tailored to minimize financial risk while maximizing returns.

Additionally, the regulatory environment varies across geographical regions. The Nordic region has distinct financial regulations that influence how leverage is used in M&A transactions. Therefore, a study on this region can help refine frameworks to encourage responsible leverage usage. Market dynamics in different geographical areas can also affect the deals. The Nordic M&A landscape is dominated by mid-sized firms with strong international ties. By studying leverage effects in this context, firms can better align their financing strategies with growth opportunities in global markets.

Finally, M&A decisions require careful consideration of risk management. Understanding leverage's role in M&A outcomes can improve risk management practices, especially in

sectors prone to economic fluctuations. This research can fill a significant knowledge gap by tailoring insights specifically for the Nordic market, where economic stability, corporate governance, and sustainable financing practices differ from other regions.

1.3 Structure of the study

This study is organized into six main chapters, each addressing the topic, which is a critical aspect of capital structure in mergers and acquisitions. The first chapter introduces the topic, providing the study's background, motivation, and purpose, along with its structure. Chapter two lays the theoretical groundwork by presenting the theoretical framework and presents mergers and acquisitions. It explores M&A history, key theories, models, types of M&A, and their impact, focusing on the role of leverage and its influence on optimal buyer returns and value creation. The third chapter reviews existing literature on leverage in M&A, buyer return expectations, and value creation, highlighting gaps in current research to provide the rationale for this study. Chapter four outlines the research design and methodology, data collection, variable measurement, and the statistical methods. The fifth chapter presents the empirical results, offering a comprehensive analysis and discussion of the findings in relation to the hypotheses while addressing any limitations of the study. Finally, chapter six concludes the study by summarizing key insights, discussing implications for practice and theory, and suggesting directions for future research.

2 Theoretical background

This chapter covers the topic's theoretical frameworks and background. It reviews past literature on M&A and discusses mergers and acquisitions, their history and related theories, and capital structure and its theories.

This thesis emphasizes M&A transactions conducted in the Nordic countries from the acquirer's perspective. This theoretical perspective aims to provide the foundation for understanding how leverage, strategic motives, and transaction structure affect the outcomes and value creation of such deals.

2.1 Mergers and acquisitions

This chapter explores the theoretical frameworks and practical considerations surrounding M&A, focusing on the factors influencing decision-making processes, the integration of merged entities, and the outcomes of such transactions. It also explores M&A history. By examining the dynamics of M&A, this chapter aims to provide a comprehensive understanding of its role in corporate strategy and its impact on long-term organizational performance.

Mergers and acquisitions are major and transformative events in the corporate world. They shape industry landscapes and affect firms' strategic direction. These transactions involve consolidating companies or assets to achieve growth, enhance competitive advantage, or improve financial performance. As businesses operate in an increasingly globalized and competitive market, M&A activities offer expansion, diversification, and synergy creation opportunities. Therefore, the purpose of mergers and acquisitions is to combine several businesses to achieve synergy and maintain or increase the competitiveness and growth of the business.

The terms merger and acquisition are often used interchangeably, though they represent distinct types of transactions. A merger occurs when two companies agree to form a single entity, resulting in both firms losing their independent status. In contrast, an acquisition involves one company purchasing another, thereby gaining ownership and control over the acquired firm (Hassan et al., 2018).

A merger occurs when two companies combine their operations to form a single, unified organization. This strategic move is often motivated by goals such as expanding market share, reducing costs, or achieving synergies that enhance efficiency and competitiveness (Hargrave, 2021). Conversely, an acquisition involves one company purchasing a controlling interest or the entirety of another company's stock, granting the acquiring company control over the target firm. Acquisitions can be friendly or hostile and are typically pursued to gain access to new markets, technologies, or other strategic resources (Kenton, 2020).

2.1.1 History of M&A

The evolution of M&A activity can be traced through a series of distinct waves. Mergers and acquisitions have historically followed a cyclical pattern, with merger waves occurring during periods of economic expansion, strong financial markets, and favourable regulatory conditions, followed by downturns triggered by financial crises, recessions, or stricter antitrust enforcement. These waves are influenced by technological advancements, regulatory changes, financial market conditions, and globalization, shaping the corporate landscape across industries (Martynova & Renneboog, 2008). Understanding this historical development of merger waves is essential for contextualizing the current M&A landscape in the Nordic region.

Since this thesis focuses on post-acquisition performance and leverage usage in Nordic M&A transactions, recognizing how past merger waves shaped strategic and financial decision-making provides a useful framework for evaluating modern-day deals' motives

and expected outcomes. Over time, M&A activity has evolved from monopolistic consolidations in the early 20th century to complex financial transactions such as leveraged buyouts, hostile takeovers, and cross-border acquisitions (Gaughan, 2015).

The literature identifies five major merger waves, primarily originating in the United States, with European markets following a similar pattern with a short lag. This time difference reflects regulatory variations, economic conditions, and the influence of U.S. financial markets on global corporate activity (Brakman et al., 2007).

The first merger wave (1897–1904) was driven by horizontal mergers, where firms consolidated within industries such as steel, railroads, oil, and banking to achieve monopolistic dominance. The lack of strict antitrust enforcement allowed these large-scale consolidations to take place. However, increasing public and regulatory pressure led to the implementation of the Sherman Antitrust Act, effectively bringing the wave to an end. The second wave (1918–1929) saw a shift from monopolistic consolidations to oligopolistic structures, as firms focused on economies of scale and vertical integration to strengthen their market positions. However, the 1929 stock market crash and the Great Depression led to a significant decline in corporate expansion, marking the end of this wave (Martynova & Renneboog, 2008).

Following economic recovery after World War II, the third merger wave (1950s–1973) emerged, characterized by the rise of conglomerate mergers. Companies sought to diversify their business portfolios by acquiring firms in unrelated industries to reduce financial risk and enhance corporate stability. Regulatory measures, such as the 1950 Celler-Kefauver Act, restricted horizontal and vertical mergers, prompting firms to expand through diversification instead. However, this strategy lost favour as inefficiencies in managing diverse, unrelated businesses became apparent. The 1973 oil crisis and subsequent economic downturn contributed to the decline of conglomerate mergers, bringing this wave to an end (Gaughan, 2015).

The fourth merger wave (1981–1989) saw a fundamental shift from diversification to corporate restructuring, hostile takeovers, and leveraged buyouts. The rise of junk bonds, pioneered by investment firms, facilitated the financing of highly leveraged acquisitions. Aggressive takeovers, restructuring of inefficient conglomerates, and increased shareholder activism characterized this period. Firms were acquired and restructured to improve financial performance through cost-cutting, divestitures, and asset sales. However, the 1987 stock market crash and subsequent tightening of credit markets made financing these transactions more difficult, leading to the wave's decline (Martynova & Renneboog, 2008).

The fifth merger wave (1993–2000) reflected the rise of globalization, deregulation, and technological advancements, leading to large-scale cross-border M&A activity. Unlike previous waves that were primarily domestic, this period saw an increase in international mergers, particularly in finance, telecommunications, and technology. Firms pursued industry consolidation and geographic expansion, often engaging in mega-deals to strengthen their market positions. Privatizing state-owned enterprises, particularly in Europe, and the liberalization of global markets further fuelled M&A activity (Brakman et al., 2007). However, the bursting of the dot-com bubble in 2000 caused a sharp decline in corporate valuations and investor confidence, marking the end of this wave (Gaughan, 2015).

In the Nordic context, merger waves have mirrored broader European patterns and exhibited unique features shaped by smaller market size, institutional investor influence, and highly integrated welfare models. These regional characteristics may influence the frequency and structure of M&A transactions, including how leverage is used to finance deals. Therefore, assessing the historical and economic context is essential to understanding the buyer's rationale and the conditions under which value is created.

A notable feature of European M&A activity is its tendency to follow U.S. trends with a short delay. Regulatory frameworks, market conditions, and economic integration efforts,

particularly through the European Union's single market policies, have influenced the timing and nature of European merger waves. While U.S. firms often initiate M&A trends, European companies tend to adopt similar strategies once regulatory and economic conditions align (Brakman et al., 2007).

The post-2000 M&A environment has been shaped by digital transformation, private equity dominance, and increased regulatory scrutiny, particularly concerning conglomerate mergers within digital ecosystems. The rise of Big Tech acquisitions and the role of data-driven business models have brought new challenges to antitrust enforcement. Governments and regulators are now closely monitoring market power in digital industries, signalling a shift in corporate strategy and regulatory frameworks moving forward (Martynova & Renneboog, 2008).

2.1.2 Types of mergers

Mergers and acquisitions are commonly classified into three types: vertical, horizontal, and conglomerate. Vertical mergers occur between companies at different supply chain stages, such as a manufacturer acquiring a distributor. Horizontal mergers happen between competitors within the same industry, while conglomerate mergers involve companies that operate in unrelated markets but combine to diversify their portfolios (Witt, 2022).

Understanding the differences between these merger types is essential for analysing how leverage and value creation mechanisms operate in various acquisition contexts, especially from the buyer's perspective in Nordic M&A transactions. However, this study does not consider merger types due to data constraints.

A horizontal merger occurs when two companies operating in the same industry and market combine to form a single entity. These mergers are primarily driven by the desire to increase market share, achieve economies of scale, and reduce competition (Gaughan,

2015). These mergers typically provide the highest potential for operational synergies, but they can also present challenges related to overlapping functions and personnel, which may complicate integration.

A vertical merger occurs when companies at different supply chain stages combine, such as a manufacturer acquiring a distributor or a supplier merging with a retailer (Gaughan, 2015). These mergers are typically motivated by efficiency gains, cost reductions, and supply chain integration.

A conglomerate merger occurs when two firms operating in unrelated industries or markets combine. These mergers are often driven by diversification strategies, financial synergies, and risk reduction (Gaughan, 2015). However, conglomerate mergers have become less common in recent decades, as empirical evidence has questioned their effectiveness in enhancing shareholder value (Gaughan, 2015).

2.1.3 M&A strategy

Strategic decision-making in mergers and acquisitions becomes particularly challenging when firms operate under uncertain market conditions. Companies must manage this uncertainty while balancing risks, potential synergies, and the timing of their acquisitions to optimize long-term value creation. One approach to tackling these challenges is implementing tailored acquisition strategies that align with market conditions and firm objectives.

Lukas et al. (2019) highlight in their research two primary strategies in M&A: engaging in a large-scale acquisition, often referred to as the "big leap", where a firm acquires a large target in one major transaction, or pursuing a sequential acquisition program where smaller firms are acquired incrementally. The choice between these strategies is influenced by several factors, including the level of market uncertainty, the nature of synergies available, and the firm's strategic priorities (Lukas et al., 2019). For instance, in highly

volatile markets, firms may find acquisition programs more effective as they allow gradual market entry while mitigating financial and operational risks. In contrast, stable market conditions often make the "big leap" approach more attractive due to its ability to achieve faster market entry and economies of scale.

Timing is a critical factor influencing the strategic and financial outcomes of M&A transactions. Hostile takeovers may suffer from inefficiencies due to delayed execution, although they offer greater control to the acquirer and potentially higher value capture. On the other hand, friendly mergers typically allow for smoother negotiations and earlier completion, which can preserve or enhance the financial benefits of the transaction (Lukas et al., 2019). These findings highlight the trade-offs firms must consider when designing their acquisition strategies, particularly regarding speed, control, and efficiency.

Designing optimal M&A strategies requires firms to evaluate market conditions carefully, assess the level of synergies achievable with potential targets, and consider the implications of each acquisition within the context of their overall strategic plan. While uncertainty poses inherent challenges, a well-structured approach to M&A can mitigate risks and unlock substantial value for acquirers and their stakeholders.

These strategic considerations are particularly relevant to Nordic M&A. Since Nordic firms often operate in relatively small but advanced markets, uncertainty in cross-border or sector-expanding M&As can be pronounced. Therefore, choosing between a big leap and an acquisition program may significantly impact post-acquisition performance.

2.1.4 The form and process of M&A

In addition to strategic motives, M&A transactions involve a complex and multi-stage process that influences the deal's success. Understanding the structure and execution of such transactions is fundamental to assessing their implications for value creation, particularly from the acquirer’s perspective.

The process typically begins with target identification, followed by preliminary negotiations and due diligence, during which the acquiring firm assesses the target's financial, legal, and operational aspects. Based on this, a formal deal structure is chosen, commonly a share purchase, asset purchase, or merger, depending on legal, tax, and strategic considerations (Gaughan, 2015).

Once the terms are agreed upon, a detailed acquisition agreement is signed. This includes provisions on price, payment method, representations and warranties, and termination clauses. In cross-border deals, additional attention must be paid to regulatory approvals, antitrust clearance, and potential legal or cultural barriers (Martynova & Renneboog, 2008).

A critical yet often underestimated phase is post-merger integration, which involves combining operations, aligning systems, and managing personnel and cultural integration. The quality and speed of this phase significantly impact whether anticipated synergies are realized (Gaughan, 2015).

External advisors, such as investment banks, legal counsel, and consultants, are often involved throughout the process, especially in complex or high-value transactions. These advisors provide expertise in valuation, negotiation, compliance, and integration planning.

These steps are relevant, as the effectiveness of due diligence and post-merger integration may directly influence the value creation outcomes. Moreover, deal structure choices may be linked to the amount of leverage the acquirer uses.

2.2 M&A theories and concepts

M&A theories and concepts help explain the strategic motivations behind corporate acquisitions. They address the fundamental question of why a firm chooses to pursue an

acquisition in the first place. By doing so, they establish a logical foundation for understanding the acquirer's behaviour before any financing decisions. M&A is grounded in multiple theoretical perspectives that seek to explain the motivations behind corporate takeovers and their impact on firm performance. No single theory fully captures the complexities of M&A transactions. Different theories offer complementary insights into these deals' strategic and financial rationale. These theories provide a foundation for analysing the effects of M&A on firm value, particularly in the context of leverage and long-term performance outcomes. The following outlines key theories for understanding value creation, leverage, and performance outcomes in Nordic M&A transactions.

2.2.1 Efficiency theory

Efficiency theory suggests that M&A transactions are primarily undertaken to achieve synergies that enhance the combined firm's operational and financial performance. Synergies can be classified into financial, operational, and managerial efficiencies (Trautwein, 1990). Financial synergies arise from the cost of capital reductions, risk diversification, and improved capital allocation through an internal market. An internal capital market allows firms to allocate capital more efficiently by directing resources to divisions with the highest expected returns, thereby optimizing financial decision-making. However, the ability of firms to achieve financial synergies through M&A depends on the effectiveness of capital allocation and integration processes.

Operational synergies, on the other hand, result from integrating production processes, streamlining supply chains, and optimizing resource allocation (Trautwein, 1990). Firms engaged in M&A transactions often seek to eliminate redundant operations, improve efficiency in procurement and distribution, and enhance economies of scale. Managerial synergies occur when leadership in the acquiring firm successfully implements superior management strategies to enhance overall performance. While theoretically valid, realizing these efficiencies remains contentious, as empirical evidence suggests that efficiency gains are often difficult to achieve in practice. Challenges such as cultural

integration, conflicting corporate strategies, and resistance to change can hinder the realization of expected synergies.

2.2.2 Concept of synergy

One of the most cited motivations for mergers and acquisitions is the expectation that the combined value of the merging firms will exceed the sum of their values. This anticipated value gain is typically attributed to synergies, such as cost savings, revenue enhancements, and improved strategic positioning (Kitching, 1967). Synergies are especially relevant in horizontal and vertical mergers, where economies of scale, scope, and increased bargaining power can provide competitive advantages. Financial mergers often benefit from tax optimization and debt restructuring and may offer the most immediate gains. In cross-border M&A, for example, synergies may arise through access to new markets, integration of international operations, and shared technological capabilities.

However, Kitching (1967) argues that while these synergies are frequently presented as justification for deals, they are often difficult to achieve in practice. Many firms overestimate the ease of realizing synergies, leading to disappointing post-merger outcomes such as underperformance and unforeseen integration costs. The success of synergy realization depends heavily on the effectiveness of post-merger integration, industry-specific conditions, and external factors such as macroeconomic volatility and regulatory change.

2.2.3 Firm size

Gorton et al. (2009) propose that firms prefer acquiring smaller targets due to the complexity and risks associated with large-scale transactions. Acquiring a significantly larger firm requires substantial financial resources, often increasing leverage and default risk.

Furthermore, large deals introduce operational challenges, cultural mismatches, and regulatory scrutiny, all elevating the likelihood of failure (Eisenbarth & Meckl, 2014). Financially, firms engaging in high-leverage M&A must balance debt servicing capacity with expected value creation to avoid financial distress.

The complexity of significant M&A transactions can also impact post-merger integration efforts. Larger acquisitions typically require extensive restructuring, workforce adjustments, and alignment of corporate cultures, all of which contribute to increased execution risk. As a result, firms engaging in large-scale M&A must adopt comprehensive risk management strategies to ensure long-term success.

2.2.4 Empire-building theory

Empire-building theory suggests that managers pursue acquisitions to increase firm size and personal power rather than maximize shareholder value (Trautwein, 1990). This theory is based on agency theory and highlights conflicts of interest between managers and shareholders. Managers seeking to enhance their influence and compensation may engage in value-destroying acquisitions that dilute shareholder returns (Mueller, 1969). Empirical studies have shown that empire-building motives are often more pronounced in firms with weak governance structures, where shareholder interests less constrain managerial decision-making.

Given the limited empirical support for sustained short-term performance improvements following empire-driven acquisitions, this theory highlights the importance of strong corporate governance mechanisms in limiting managerial excesses. M&A transactions motivated by empire-building are more likely to result in post-merger inefficiencies, excessive leverage, and poor financial performance over time. Regulatory oversight and shareholder activism can prevent empire-building by ensuring that M&A decisions align with short-term value-creation objectives.

2.2.5 Hubris hypothesis

The hubris hypothesis (Roll, 1986) argues that M&A decisions are frequently driven by managerial overconfidence rather than rational value-maximizing motives. Overconfident CEOs overestimate synergies and, as a result, tend to overpay for acquisitions, leading to value destruction. This phenomenon is closely linked to the winner's curse, which suggests that the acquiring firm often suffers post-merger performance declines due to inflated acquisition prices and underestimated integration costs (Varaiya, 1988).

Managerial hubris can manifest in various ways, including an excessive focus on deal completion rather than long-term strategic fit. Research further supports that CEO characteristics such as overconfidence, dominance, and risk-taking behaviour significantly influence acquisition decisions. Malmendier and Tate (2005) demonstrate that overconfident CEOs are more likely to pursue value-destroying mergers. Brown and Sarma (2007) show that dominant executives exhibit a greater propensity for aggressive deal-making, often at the expense of shareholder value.

Strong corporate governance mechanisms, such as independent boards and active shareholder engagement, can play a critical role in mitigating the adverse effects of managerial hubris in M&A transactions by ensuring alignment with long-term value-creation objectives.

2.3 Capital structure theories

Given that many M&A transactions are financed through external sources, debt in particular, understanding the theoretical foundations of capital structure is essential for assessing how Nordic acquirers make financing decisions in corporate takeovers. Several prominent theories have been developed to explain capital structure decisions, in addition to considering firm-specific characteristics.

2.3.1 Modigliani-Miller theorem

Modigliani and Miller's (1958) capital structure irrelevance proposition takes a fundamentally different view. Under the assumption of perfect markets, where there are no taxes, transaction costs, or information asymmetry, the theory suggests that a firm's capital structure does not impact its value. This implies that the choice between debt and equity is irrelevant because investors can replicate a firm's financial decisions by adjusting their own leverage. While this proposition provides a theoretical benchmark, real-world frictions such as tax benefits, bankruptcy risks, and information asymmetry have led to the development of alternative theories that better explain observed financing behaviours.

The original theory is criticized for its reliance on impractical assumptions, such as the existence of perfectly competitive markets and identical tax treatment for all financing methods. In response to these concerns, Modigliani and Miller updated their framework in 1963, incorporating the concept of a tax shield from corporate income taxes. This adjustment offered a more realistic and nuanced view of how firms might determine an optimal capital structure.

2.3.2 Trade-off theory

The trade-off theory is based on the Modigliani and Miller theorem. It is developed by Kraus and Litzenberger (1973). It proposes that firms aim to determine an optimal mix of debt and equity by balancing the benefits and costs associated with debt financing. On one hand, debt offers tax advantages through the deductibility of interest payments, which creates a tax shield that can enhance firm value. On the other hand, increasing debt levels also introduce costs of financial distress, such as a higher risk of bankruptcy and potential agency conflicts between shareholders and creditors. The theory is typically discussed in two forms. The static trade-off theory assumes that firms identify a target capital structure by weighing these trade-offs at a single point in time, without

considering future financing needs. In contrast, the dynamic trade-off theory acknowledges that firms operate in imperfect markets and may temporarily deviate from their target leverage but gradually adjust their capital structure in response to changing conditions. This dynamic perspective offers a more realistic framework by incorporating the timing of financing decisions and the firm's ability to adapt to market fluctuations.

A key implication of this theory is its relevance in M&A. Acquisitions can serve as a mechanism for target firms to overcome transaction costs that might otherwise hinder their capital structure adjustments. Firms involved in M&A transactions often use leverage strategically, aligning with research by Flannery et al. (2023), Harford et al. (2009), and Uysal (2011), which highlights the role of leverage adjustments in corporate finance strategy. By optimizing their capital structure through acquisitions, firms can achieve financial flexibility while managing the risks associated with excessive debt or underutilized tax shields.

2.3.3 Pecking order theory

The pecking order theory, proposed by Myers and Majluf (1984), offers an alternative view to the trade-off theory by emphasizing the role of information asymmetry in financing decisions. According to this theory, companies do not actively target an optimal capital structure. Instead, they follow a hierarchy of financing preferences, prioritizing internal funds first, then debt, and only turning to equity at last.

This financing order reflects that external financing, particularly equity, can signal negative information to the market, potentially diluting firm value. Therefore, firms tend to rely on retained earnings whenever possible. Debt financing is typically preferred if internal funds are insufficient due to its relatively lower sensitivity to information gaps and the tax advantages associated with interest deductibility.

However, the application of this theory is not always straightforward. Even firms with substantial cash reserves may use debt if market conditions allow access to inexpensive leverage. This enables companies to preserve liquidity for strategic investments or operational flexibility. In practice, firms may balance between internal funds and debt, optimizing capital allocation while managing the adverse effects of information asymmetry.

2.3.4 Market timing theory

The market timing theory, developed by Baker and Wurgler (2002), suggests that firms make capital structure decisions based on the current conditions in the capital markets. If equity valuations are high, firms may issue shares. If interest rates are low, they may favour debt. This theory shifts the focus from firm-specific factors to external, time-sensitive opportunities.

In the Nordic M&A landscape, market timing plays an increasingly relevant role. During periods of low interest rates, such as the post-financial crisis years of 2008 or recent years of expansionary monetary policy, firms tend to take advantage of cheap debt to fund acquisitions. This opportunistic behaviour is particularly visible among larger listed companies or conglomerates with better access to capital markets. Moreover, negative interest rates and highly liquid bond markets in certain periods have lowered the threshold for firms to consider debt-financed takeovers, making market conditions a decisive factor in acquisition financing.

2.3.5 Agency problem theory

Agency theory, as introduced by Jensen and Meckling (1976), explains the conflicts that can arise between firm owners (principals) and the managers (agents) who are entrusted to act on their behalf. In the context of corporate acquisitions, this conflict may surface

when managerial incentives are not perfectly aligned with shareholder interests, potentially leading to suboptimal investment decisions.

One of the central ideas in this theory is that managers may be incentivized to engage in acquisitions that serve their objectives, such as empire-building or increasing personal power, even if these transactions do not maximize shareholder value. This risk increases when managers are not fully exposed to the consequences of their decisions, particularly in firms with dispersed ownership or weak oversight.

Financial leverage can play a dual role in mitigating agency problems. On one hand, high leverage levels reduce the amount of free cash flow available for discretionary spending, limiting the managers' ability to pursue value-destroying acquisitions. On the other hand, excessive leverage may introduce new risks, including financial distress and short-termism, particularly if acquisitions are motivated by market pressure or overconfidence.

In Nordic M&A transactions, the acquirer's capital structure can reflect attempts to balance these agency costs. For example, choosing to finance a deal with debt may signal a commitment to discipline and value creation, while equity-financed deals might raise concerns about dilution and managerial motives. Consequently, leverage decisions in acquisitions can be interpreted as part of a broader mechanism to manage agency conflicts and ensure alignment between ownership and control.

2.3.6 Free cash flow theory

The free cash flow theory, introduced by Jensen (1986), offers a framework for understanding why firms with strong internal cash generation may choose to finance acquisitions through debt. According to Jensen (1986), free cash flow refers to the cash available after funding all positive net present value projects. In situations where profitable investment opportunities are limited, excess liquidity can lead to inefficient capital

allocation, as managers may pursue projects that serve their own interests rather than those of shareholders.

In this framework, debt serves as a disciplinary mechanism. It reduces the cash under managerial discretion by creating fixed financial obligations that must be met. This constraint helps mitigate the agency problem by limiting opportunities for empire-building and enforcing more prudent, value-focused financial behaviour. Essentially, leverage pressures managers to allocate capital efficiently and in ways that enhance shareholder value.

In Nordic M&A transactions, the free cash flow theory explains why acquiring firms may intentionally use leverage, even when internal funds are available. The threat of agency costs may be more pronounced, especially in mature industries or cross-border deals, where integration risks and organizational complexity increase. Leveraged financing can signal managerial discipline and a commitment to post-acquisition efficiency.

Supporting this perspective, Myers (2001) highlights that free cash flow problems are most significant in firms with stable earnings and limited growth opportunities, precisely the type of firms often engaged in strategic acquisitions. He notes that using debt can, under such conditions, contribute to firm value even when it introduces moderate financial risk, as long as the firm's operating cash flows substantially exceed viable reinvestment needs.

2.4 The role of leverage in M&A

Harford et al. (2009), in their findings on financing decisions in large acquisitions, suggest that firms actively strive to minimize deviations from their target debt levels. The research indicates that following cash-financed acquisitions, firms deliberately adjust their leverage back toward the target, supporting the static trade-off theory's prediction that companies maintain leverage targets.

Furthermore, the results of Harford et al. (2009) emphasize that efforts to reduce contracting costs are key determinants in firms' decisions to sustain a target capital structure. Their findings also offer valuable insights into the factors that influence the choice of payment method in takeover transactions.

Although the payment method is closely tied to the financing strategy of the acquisition, existing evidence on the extent to which firms consider their pre-acquisition leverage and the potential leverage changes resulting from the transaction remains limited. Harford et al.'s research (2009) suggests that capital structure considerations are a significant factor in the decision-making process regarding the chosen payment method.

Harford et al. (2009) provide evidence regarding target capital structures among firms in the context of large acquisitions. Their findings indicate that when a bidder’s leverage exceeds its target level, the firm is less likely to finance the acquisition with debt and more inclined to use equity instead. Furthermore, a positive relationship is identified between merger-induced changes in target and actual leverage, with bidders incorporating more than two-thirds of the change into the merged firm’s new target leverage.

Harford et al.’s (2009) research also demonstrates that following debt-financed acquisitions, managers actively adjust the firm’s leverage back toward its target, reversing over 75% of the acquisition's leverage impact within five years. These findings support the view that firms adhere to a capital structure model that incorporates both a target leverage level and adjustment costs. The results further suggest that deviations from target leverage significantly influence financing decisions in acquisition transactions, reinforcing the strategic role of capital structure management.

2.5 Buyer returns and value creation

2.5.1 Financial synergies and the leverage effect

When analysing buyers' returns and value creation, Leland (2007) indicates that the leverage effect represents the difference in leverage-related benefits when business activities are combined within a single firm versus when they remain separate entities. This effect can be broken down into two components: the change in tax savings from leverage and the change in default costs when comparing the outcomes of merging versus operating separately.

Merging activities into a single firm offers the benefit of risk reduction through diversification, while maintaining separate entities allows firms to optimize individual capital structures. As a general guideline, the leverage effect tends to be positive when the combined firm's optimal debt value exceeds the sum of the optimal debt values of the separate entities. Conversely, the effect is typically negative if the merged firm's optimal debt value falls below the combined debt values of the individual firms.

Financial synergies resulting from mergers are more likely to be positive when the involved firms exhibit low correlations and when their volatilities are both low and similar. Additionally, mergers become more attractive when default costs are jointly high, as the enhanced risk reduction from diversification increases firm value. Conversely, substantial differences in the volatility or default costs of the firms' activities tend to favour maintaining them as separate entities.

According to Leland (2007), these findings have implications for empirical research on merger gains and merger activity predictions. Factors such as cash flow characteristics contributing to financial synergies should be considered potential explanatory variables. Moreover, the results suggest that mergers can have distinct impacts on debt and equity values.

While financial synergies alone may often be insufficient to justify mergers, their importance can increase under specific conditions. Cases calibrated to empirical data demonstrate that financial synergies can become meaningful in specialized scenarios despite being generally modest in scale.

2.5.2 Broader merger theories

Trautwein (1990) analyses seven different kinds of merger theories, some of which are partially presented in sub-chapter 2.2. Efficiency theory is composed of three types of synergies: financial synergies, operational synergies, and managerial synergies.

Financial synergies are achieved by reducing the cost of capital. This can be accomplished through several means. One method involves lowering the systematic risk of a company's investment portfolio by investing in unrelated businesses. Another method is increasing the company's size, which may provide access to cheaper capital. Additionally, establishing an internal capital market, where capital can be allocated more efficiently, is a viable approach. Operational synergies are derived from combining previously separate business units or from knowledge transfers. Both approaches can potentially reduce the costs associated with the involved business units or enable the provision of unique products and services. However, these advantages must be carefully weighed against the associated costs when combining assets. Managerial synergies are realized when the acquiring firm's managers possess superior planning and monitoring abilities that enhance the target company's performance. Positive motivational outcomes may also be observed as a secondary effect.

The second theory, the Monopoly theory, states that mergers are undertaken to achieve market power. This theory does not apply in the context of horizontal acquisitions. Market power is pursued through cross-subsidies, restricting competition, or deterring potential market entrants. Trautwein (1990) suggests that the empirical record supporting the monopoly theory is weaker than that supporting the efficiency theory.

The third theory is the Valuation theory, which proposes that mergers are initiated and executed by managers who possess superior information regarding the target company's value compared to the stock market. Managers may identify potential advantages from the combination of companies or recognize an undervalued firm that can be sold in parts for profit.

The fourth theory is the Empire-building theory, which argues that mergers are initiated by managers seeking to maximize their utility rather than acting in the best interests of shareholders. This behaviour is often associated with attempts to demonstrate and expand personal influence and power.

The fifth theory, the Process theory, is also considered a viable explanation for mergers, though it has been characterized as ambiguous. Its foundations lie in the strategic decision-making process, and the available evidence broadly supports its claims.

The sixth theory is the Raider theory, which suggests that mergers are motivated by the intention to facilitate wealth transfers from shareholders, often through mechanisms such as greenmail or excessive compensation following a takeover. Although this theory is partially inconsistent, as raiders must pay a premium to other shareholders, empirical evidence indicates that raiders have generally not been successful. Nevertheless, shareholder gains have been observed in most cases following mergers.

Finally, the Disturbance theory attributes mergers to economic disturbances. However, the absence of institutional frameworks for such mergers and weak data correlations between this theory and real-life events limits its explanatory power.

Trautwein (1990) concludes that the valuation, empire-building, and process theories of mergers have the highest degree of credibility. Although the supporting evidence is favourable, it remains significantly limited. Efficiency and monopoly theories follow, with

a more significant body of largely unfavourable evidence. Lastly, the raider and disturbance theories are regarded as the least credible, with minimal supporting evidence.

These theories provide a solid theoretical background for this study. Efficiency and valuation theories are particularly relevant, suggesting that acquisitions, especially those involving leverage, may generate financial or operational synergies and reflect informed managerial decisions based on superior valuation insights. These theories align with the central premise of this thesis, which investigates whether leveraged acquisitions lead to superior long-term performance. However, empire-building and raider theory offer contrasting perspectives, implying that leverage might also serve managerial self-interest or facilitate value transfers, potentially leading to underperformance.

3 Literature review

3.1 Leverage in M&A

An increasing number of studies highlight how capital structure decisions affect acquisition choices, deal structure, and post-acquisition performance, emphasizing the importance of financial flexibility and optimal leverage management (Ang et al., 2018; Uysal, 2011).

Firms often approach M&A, focusing on balancing the benefits and costs associated with debt. According to Uysal (2011), overleveraged firms face constraints in financing acquisitions, often avoiding cash-based transactions and paying lower premiums due to limited borrowing capacity. Conversely, underleveraged firms exhibit greater flexibility, leveraging their financial position to pursue strategic acquisitions. This contrast emphasizes the significance of maintaining an optimal capital structure, as deviations from target leverage levels can restrict strategic options and impact acquisition outcomes. Harford et al. (2009) extend this view, demonstrating that firms with a target-oriented approach to capital structure are better equipped to align financing choices with strategic objectives, ensuring both short-term feasibility and long-term growth.

Research further demonstrates that capital structure adjustments are not confined to the pre-acquisition phase. Harford et al. (2009) find that firms actively rebalance their leverage following acquisitions, with many returning to target levels within five years. This rebalancing process reflects the dynamic interplay between strategic investment decisions and capital structure optimization. Ang et al. (2018) complement these findings by highlighting the value-enhancing potential of increased debt capacity, showing that acquirers benefit from improved long-term stock market performance when post-merger leverage is optimized. The ability to adjust leverage dynamically enables firms to maintain financial stability and capitalize on emerging opportunities, mitigating risks associated with suboptimal debt levels.

Kruk (2021) analyses the capital structure of M&A deals and considers that, in the literature on the subject, no full agreement has been reached regarding the definition of the concept of capital structure. Attention is typically directed toward the equity-to-debt ratio in this context. On some occasions, the term is interpreted as a liability structure, while another approach distinguishes between the concepts of financing structure and capital structure. In this regard, capital structure is considered to include equity and long-term liabilities and is viewed as a component of the financing structure, which also includes current liabilities. The concept of enterprise value is likewise subject to various interpretations. Within the capital structure theory, it is assumed that this value corresponds to the amount a buyer is prepared to pay in exchange for anticipated cash flows. Thus, it is determined by the sum of future discounted cash flows.

According to Kruk (2021), the capital structure is understood to comprise equity derived from the issuance of shares, preferred capital, and long-term debt. In this context, the capital structure is regarded as a component of the financing structure. The financing structure is defined to include equity, long-term external capital, and current liabilities. Therefore, the capital structure corresponds to the structure of liabilities excluding current liabilities. The exclusion of current liabilities from consideration is attributed to their fluctuating value. As a result, the capital structure is determined by equity and long-term liabilities over the long term.

When analysing the optimal leverage in M&A and considering the variety of financial instruments available, it can be assumed that the possibilities for shaping the capital structure are unlimited, as this relationship may assume values ranging from zero to infinity. Determining the existence of an optimal capital structure would imply that shareholder value can be maximized through the appropriate adjustment of a company's capital structure. Consequently, a company's value would be influenced not only by its investment decisions but also by its financial decisions.

Durand (1952) presents a compromise theory, which is regarded as a combination of the theory of operating profit and the theory of net profit. According to this theory, debt is accepted by the owners of a company up to a certain level without the expectation of an additional risk premium. As a result, the weighted average cost of capital is reduced, and the company's market value increases if the proportion of debt remains within an acceptable limit. However, once this acceptable level is exceeded, equity and external capital providers are expected to demand a higher risk premium. Consequently, the weighted average cost of capital will rise, leading to a decrease in the enterprise's market value.

3.1.1 Credit rating and leverage decisions

Credit ratings have generally received limited attention in theoretical and empirical capital structure models within academic studies. However, several studies have incorporated variables that capture both a firm's target leverage and the impact of adjustment costs on leverage dynamics only in recent years.

Credit ratings add another layer of complexity to the relationship between capital structure and M&A. Aktas et al. (2021) identify a curvilinear relationship between credit ratings and acquisition likelihood, noting that highly rated firms often exercise caution to avoid downgrades, while lower-rated firms take advantage of relaxed borrowing constraints to pursue acquisitions. These dynamics suggest that credit ratings influence the frequency and structure of acquisitions and post-deal integration strategies. Firms with high ratings often prioritize conservative financial strategies to preserve their status. In contrast, those with lower ratings may adopt more aggressive acquisition tactics to improve market position and shareholder value.

Recent research emphasizes the importance of credit ratings in shaping firms' capital structure decisions. Kisgen (2009) highlights that firms adjust their leverage behaviour in response to changes in credit ratings, particularly after downgrades. The study reveals

that firms significantly reduce leverage after downgrades to speculative grade levels to regain favourable credit ratings, while upgrades have little impact on subsequent leverage decisions. This asymmetry suggests that firms prioritize maintaining minimum credit ratings due to their influence on debt costs, investor access, and financial flexibility. These findings expand the traditional view of leverage optimization by incorporating the strategic importance of credit ratings in corporate financial behaviour.

In summary, it can be concluded that a company with a good credit rating benefits from more favourable and advantageous debt terms, which lowers the barrier to utilizing financial leverage and may increase the proportion of relative debt. Furthermore, it is important for corporate management, as part of corporate restructuring, to consider credit rating maintenance in their communication and calculations. Ensuring that the credit rating does not decline is important, as a downgrade can significantly negatively affect the company's ability to obtain debt, the cost of debt, and the project’s overall profitability.

3.1.2 Leverage in cross-border transactions

Recent studies emphasize the critical role of leverage in shaping firms’ decisions in cross-border M&As. Overleveraged firms face significant financial constraints that limit their ability to pursue acquisitions, pay acquisition premiums, or make all-cash offers, as creditors are less inclined to extend additional debt to such firms (Hu & Yang, 2016). Conversely, firms with lower leverage are more attractive acquisition targets and more flexible in structuring deals. Furthermore, post-acquisition firms tend to adjust their capital structures, overleveraged firms reduce debt by issuing equity, while underleveraged firms increase leverage to optimize their capital structures. These dynamics highlight the interdependence between financing and investment decisions, particularly in cross-border transactions.

Macroeconomic factors also significantly shape capital structure decisions during M&A. Kruk (2021) highlights the influence of interest rates, credit availability, and economic stability on leverage strategies. Periods of low interest rates may incentivize firms to increase leverage, while restrictive credit markets can constrain acquisition financing options. Cross-border M&A introduces additional complexities, such as exchange rate volatility, regulatory hurdles, and differences in financial reporting standards. These factors necessitate careful consideration of capital structure to ensure alignment with strategic goals and market conditions.

Leverage is critical in cross-border mergers and acquisitions, influencing the parties' financial performance and integration outcomes. Cioli et al. (2020) investigate how cross-border M&A affects the financial dynamics of bidder and target firms. Their findings highlight that leverage patterns vary significantly between the two groups post-acquisition. While bidder companies generally maintain stable leverage levels after the transaction, target firms experience increased leverage within three years. This trend reflects the financial strain often encountered by target firms during the integration process and the strategic use of debt by acquirers to optimize the transaction's financial structure.

Another key insight is the relationship between leverage and macroeconomic differences. Firms engaged in cross-border M&A must manage challenges such as economic disparities and regulatory complexities. Wider gaps in per capita GDP between the bidder's and target's countries can complicate deal execution and affect financial outcomes, particularly how debt is structured and managed.

These findings emphasize the strategic importance of leveraging financial resources effectively in cross-border transactions. Maintaining optimal leverage ratios, particularly for bidders, is critical to post-acquisition performance. Furthermore, these dynamics underline the importance of financial planning and integration strategies to ensure long-term success in cross-border M&A.

According to Rose et al. (2017), the difference between domestic and international growth may influence the price reaction upon announcement. Several advantages have been identified concerning general foreign direct investments and cross-border acquisitions. The motives for cross-border acquisitions are often associated with increasing or protecting market share, expanding geographical presence, acquiring new products or services, or even achieving economies of scale. However, various obstacles must also be addressed, including differences in political and economic environments, disparities in both culture and traditions, and in taxation and accounting practices.

Rose et al. (2017) also conclude that, in line with the growing interest in cross-border transactions, the difference between acquiring foreign and domestic targets was investigated. The results indicate that the average announcement returns are lower for cross-border M&A events. However, the calculated differences are not found to be significantly different from zero. For targets acquired by foreign companies, insignificantly higher returns are observed.

On the other hand, in an American sample, Hazelkorn and Zenner (2004) find that acquirers engaging in cross-border transactions are more successful than those acquiring domestic targets. They attribute their findings to the possibility of broader geographic coverage and access to both local technological expertise and low-cost production facilities.

3.1.3 Capital structure and target firms in M&A

The capital structure of target firms is central to the context of M&A. Flannery et al. (2023) provide empirical evidence that target firms' leverage levels significantly influence their likelihood of being acquired and their post-acquisition capital structure adjustments. Their analysis of 6,083 European target firms between 1999 and 2015 reveals that firms with substantial deviations from their optimal leverage levels are more likely

to become acquisition targets. This suggests that acquiring firms see potential value in adjusting the capital structure of mis-leveraged targets to align with optimal levels.

The role of leverage in mergers and acquisitions has been extensively studied, particularly in its influence on premiums, timing, and overall deal structure. Pires and Pereira (2020) explore the dynamics of leveraged acquisitions through a dynamic real options framework, highlighting that leveraged acquisitions occur sooner and lead to higher premiums for target firms compared to transactions financed entirely with equity. This acceleration effect is attributed to the benefits of debt financing, such as tax shields and increased financial flexibility for the bidder. By optimizing leverage, acquirers can maximize the transaction's value while expediting the acquisition process. The study further demonstrates that leverage decisions are closely tied to the perceived synergies of the acquisition. Firms with higher growth prospects are more likely to use debt, as the additional value created justifies the associated risks. However, the relationship between leverage and market volatility is nuanced. While higher uncertainty can encourage greater leverage when bankruptcy costs are low, the opposite occurs when bankruptcy risks are significant, as high bankruptcy costs discourage the use of debt. This finding emphasizes the need for firms to carefully assess their financial environment when structuring M&A deals.

Timing and premiums are also shown to be interdependent in leveraged acquisitions. Pires and Pereira (2020) find that acquirers using debt tend to offer higher premiums to target shareholders, which accelerates deal completion. This dynamic is absent in equity-financed transactions, where premiums are lower, and deals are often delayed. Additionally, taxation emerges as a critical factor in leveraged M&A. Higher tax rates increase the attractiveness of debt financing, as firms can benefit from larger tax shields, thereby justifying higher premiums and earlier acquisitions. Conversely, in transactions without leverage, taxation has a limited impact on premiums but is a deterrent to the timing of acquisitions.

These findings highlight the complex role of leverage in shaping M&A outcomes. By providing a clear framework for understanding the interplay between financing decisions, market conditions, and strategic goals, the work of Pires and Pereira (2020) contributes valuable insights into optimizing capital structure in M&A transactions. The results highlight the importance of aligning leverage levels with the acquirer's strategic objectives and the target's financial characteristics, ensuring that the timing, premium, and financing structure create value for all parties involved.

The relationship between capital structure and mergers and acquisitions has been widely studied, focusing on how debt capacity influences acquisition decisions and post-transaction outcomes. Ang et al. (2019) provide evidence that firms often use M&A as a strategic tool to optimize their capital structure. Overleveraged acquirers, for instance, actively pursue mergers that improve debt capacity, as this alleviates financial constraints and reduces the costs associated with financial distress. The study demonstrates that these firms are willing to pay higher acquisition premiums when a transaction allows them to rebalance their leverage closer to optimal levels, highlighting the strategic value of financial flexibility in corporate takeovers.

In contrast, underleveraged firms focus less on debt capacity and more on market timing, particularly by using equity financing when their stock is overvalued. This distinction illustrates the nuanced influence of pre-merger leverage levels on shaping M&A strategies and valuation approaches. Furthermore, the authors observe that while market reactions to these transactions are often neutral in the short term, the long-term performance of firms improves significantly, particularly for those that successfully enhance their debt capacity through the merger.

These findings align with broader capital structure theories, such as the trade-off theory, by emphasizing the benefits of achieving an optimal leverage ratio. Additionally, they highlight the importance of aligning M&A objectives with financial strategy, particularly

for firms seeking to mitigate the risks of overleveraging while unlocking growth opportunities.

3.1.4 Adjustment to target leverage post-acquisition

Flannery et al. (2023) find that acquired firms adjust their leverage rapidly toward optimal levels after an acquisition. Over-leveraged firms, which start with a mean debt-to-assets ratio of 34.1%, reduce their leverage to 20% within a year of acquisition. Similarly, underleveraged firms, starting at 10%, increase their leverage to 18.5%.

These adjustments highlight the relaxation of financial constraints after the acquisition. The acquiring firm provides access to broader financial resources, enabling the target to optimize its capital structure.

3.1.5 Implications for acquirers and target selection

Flannery et al. (2023) highlight that acquiring firms strategically target misleveraged firms, as these offer opportunities for value creation through capital structure optimization. Over-leveraged firms, which are more constrained financially, are particularly attractive due to the potential for significant improvements in their capital structure.

Acquirers' ability to efficiently adjust the leverage of target firms emphasizes the importance of financial flexibility and strategic capital management in successful M&A transactions.

3.2 Buyer return optimals and value creation

Recent evidence demonstrates that M&A transactions have created more value for acquiring shareholders in the post-2008 financial crisis era. Alexandridis et al. (2017) find

that acquisitions, particularly "mega-deals" valued at $500 million or more, have markedly improved shareholder returns. Public acquisitions, which historically tended to destroy shareholder value, now exhibit significant positive abnormal returns for acquiring firms. This shift can be attributed to advancements in corporate governance, including stronger internal controls, greater board independence, and enhanced incentive alignment mechanisms. The study also highlights that threefold synergy gains tripled during the 2010–2015 period compared to prior decades, indicating a fundamental shift in the strategic selection and integration of M&A deals. These insights emphasize the evolving nature of M&A transactions and their potential for value creation in a post-crisis regulatory environment.

The acquirers' ability to realize synergies and create value post-acquisition depends on their financial health and the quality of their strategic decisions. Alhenawi and Stilwell (2017) argue that the pre-acquisition financial conditions of the acquiring and target firms play a critical role in determining the success of M&A transactions. Their findings emphasize the need for comprehensive financial planning and risk management to maximize value creation and minimize potential downsides. Effective integration planning, informed by comprehensive financial analyses, further enhances the likelihood of achieving desired outcomes.

3.3 M&A outcomes and value creation

Rose et al. (2017) study the value drivers in Nordic mergers and acquisitions. In the text, they bring up a conventional wisdom indicating that nearly 50% of deals do not generate value. Naturally, all the transactions impact both the buyer and the seller company.

3.3.1 Target versus bidder returns

There are several studies that indicate the fact that in most of the cases the companies which are making the bids and are on the buy-side of the deal do seldom gain any abnormal returns.

Campa et al. (2004) examine the value generated to shareholders by the announcement of mergers and acquisitions involving firms in the European Union over the period 1998-2000. Cumulative abnormal shareholder returns resulting from merger announcements reflect revised expectations regarding future synergies or wealth redistribution among stakeholders.

A statistically significant cumulative abnormal return of 9% is observed for target firm shareholders within a one-month window centred on the announcement date. Conversely, the cumulative abnormal returns for acquiring firms are found to be null on average.

The evidence is much more consistent and reliable when analysing value creation from the target shareholders' point of view. Most previous studies examining abnormal returns for bidding firms have also investigated the effect of M&As on target firms. It has been unanimously found that target company shareholders reap significant benefits from the sizable takeover premiums. Franks and Harris (1989) report that UK targets between 1955 and 1985 experienced a statistically significant average abnormal return of 23.3%. By examining a sample of 138 US acquirers over 9 years (1990-1999), Mulherin and Boone (2000) identify a significant cumulative average abnormal return of 20.2% within a short period following the announcement.

3.3.2 Factors influencing value creation

Further studies have reinforced these findings. It has been demonstrated that target firm shareholders generally benefit from M&A transactions, particularly when cash offers are made, as opposed to stock-based deals. The increased certainty associated with cash payments is believed to contribute to this effect. Additionally, research has indicated that competitive bidding environments tend to enhance the premiums target shareholders receive, further improving their returns. Regulatory frameworks, particularly in cross-border deals, have also been found to influence value creation outcomes, with stricter regulations often reducing the likelihood of excessive premiums.

When mergers are categorized by geographical and sectoral dimensions, studies show that transactions in formerly state-controlled or heavily regulated industries tend to generate less value than M&A announcements in unregulated sectors. This diminished value creation in regulated industries is shown to become significantly negative when mergers involve firms from different countries. The reduced value is primarily attributed to the lower positive returns experienced by target firm shareholders following the merger announcement.

This evidence is interpreted as being consistent with obstacles such as cultural, legal, or transactional barriers, which are understood to hinder the successful completion of such transactions. Consequently, the probability of the merger's realization as announced is reduced, diminishing its expected value.

Rose et al. (2017) argue that the means of payment is not expected to affect price reactions, assuming that all securities are correctly priced and that market participants fully incorporate all relevant information. They continue that, in practice, this assumption is unlikely to hold due to various factors, as the bidder's choice of payment method appears to be influenced by prevailing market conditions.

Rose et al. (2017) analyse the announcement returns of 111 bidding and 73 target companies. They found weak evidence of any value creation for the acquirer's shareholders. The results for target companies were consistent and highly statistically significant. A cumulative abnormal return of approximately 20% was observed in every event window. In short, no consistent evidence of gains to the bidder's shareholders was identified, while the target's shareholders obtained large and meaningful returns from being acquired.

Since bidder shareholders do not benefit from an acquisition in the short run, Rose et al. (2017) suggest that bidder managers should consider this when contemplating financing the takeover with the company's own shares. Additionally, in cases where a bidder CEO aims to acquire another listed company, it is considered important that the stock market is informed that the takeover decision is well-prepared, such as having a clear integration plan, to avoid disappointing bidder shareholders.

While most previous research finds that, on average, cash offers yield higher returns for acquirers than mixed or pure stock offers, no evidence supporting this was found in the Nordic countries. Rose et al. (2017) state that this result does not align with the existing literature.

The combination of payment method with valuation was also examined to determine whether highly valued companies paying with stock achieve significantly lower returns. Although the findings were insignificant, Rose et al. (2017) suggest that high valuation and stock payments may result in lower announcement returns, in line with the signalling effect and pecking order hypothesis. Weak evidence was found indicating that target shareholders earn the highest returns when offered cash rather than mixed or pure stock payments.

The findings of Rose et al. (2017) indicate that high levels of cash flow do not seem to cause negative market reactions upon M&A announcements for acquirers. However, the

combination of cash flows and valuation produced some notable results. An interaction variable, measuring low valuation with cash flow, was created, and strong, reliable results in line with the free cash flow hypothesis were found. Increasing cash flow for low-valued companies before an announcement was observed to negatively affect abnormal returns, implying possible agency problems. These findings were consistent with previous research. Weak evidence of a positive relation between cash flow and cumulative abnormal returns for target companies was also identified, suggesting this is an attractive attribute.

Furthermore, diversifying acquisitions were found to yield higher abnormal returns on average than focused acquisitions, a result that contrasts with most previous research findings. According to Rose et al. (2017), the results were significant, representing an extension of the current literature.

No strong relationship was identified between the target's abnormal return and core versus non-core acquisitions. Consequently, it is suggested that the core business should not restrict the ability to engage in diversifying M&As.

The difference between acquiring foreign or domestic targets was investigated in line with the growing interest in cross-border transactions. The results indicated that the average announcement returns are lower for cross-border M&A events. However, the calculated differences were not significantly different from zero. For targets acquired by foreign companies, insignificantly higher returns were found.

Finally, Rose et al. (2017) test the relationship between the acquirer's announcement return and value versus growth targets. Despite the extensive research supporting the outperformance of value firms relative to growth firms, no significant relationship was identified between the target's growth prospects and the acquirer's cumulative abnormal return upon an M&A announcement.

3.3.3 Nordic M&A market observations

Overall, evidence was found that both supports and contradicts research from other markets. According to Rose et al. (2017), the stock markets in the Nordic region behave somewhat differently when compared to markets in the US, the UK, and Europe generally.

3.4 Method of payment

The payment method impacts transaction optimization, and the transaction parameters also impact the choice of the payment method. The choice of payment method represents a central element within the broader framework of risk management strategies in M&A. For the target company, the selected payment method directly influences shareholders' returns, while the acquiring firm must consider its financial stability and expenditure control. Balancing these objectives requires negotiating payment terms that align with the interests of both parties. Consequently, the payment method chosen in takeover transactions becomes an important factor in the decision-making processes of both acquiring and target companies.

Understanding the implications of payment methods is particularly important when analysing the determinants of takeover premiums. Since the payment structure can significantly influence the overall deal price, it is reasonable to expect that payment methods may also affect the magnitude of the takeover premium.

In practice, acquirers can use various payment strategies, including cash payments, stock exchanges, or a combination of both (mixed payments). Each method carries distinct financial and strategic implications that may influence the transaction's success and outcome.

The use of financial leverage is an essential aspect of the cash payment method in mergers and acquisitions. In this context, the acquiring firm may choose to finance the transaction using its internal cash reserves, debt financing, or a combination of both.

3.4.1 Cash payments

Cash payments offer immediate compensation to target shareholders, providing liquidity and certainty regarding the value received. This method is often preferred by target shareholders seeking stability and minimized risk. However, cash transactions may impose a considerable financial burden on the acquiring firm, particularly if the deal requires significant capital outflow or increased debt financing.

As a result, acquirers often resort to cash payments when they possess sufficient internal reserves or have favourable access to debt markets. The corporate identity and ownership structure can be unchanged with the cash payment method (Sankar & Leepsa, 2018).

3.4.2 Stock payments

In contrast, stock payments involve issuing shares of the acquiring company as compensation to the target's shareholders. This method is particularly advantageous when acquirers aim to conserve cash reserves or mitigate the risk of excessive leverage. Moreover, stock-based transactions can align the interests of both firms, as target shareholders become partial owners of the acquiring company. However, stock payments also expose target shareholders to future fluctuations in the acquiring firm's share value, introducing additional risk.

The exchange ratio and the price-earnings (P/E) ratios of the involved companies are key factors that significantly influence the actual benefits received by shareholders of acquiring firms that opt to use stock as the payment method in M&A transactions. Stock

financing is generally considered an optimal approach when the acquiring company's P/E ratio is relatively higher than that of the target company, as this can enhance the perceived value of the transaction (Sankar & Leepsa, 2018).

3.4.3 Mixed payments

A combination of cash and stock, often referred to as mixed payments, is used to balance liquidity needs with risk-sharing considerations. By offering immediate cash value and equity in the acquiring firm, this method can reduce the acquirer's immediate financial strain while providing target shareholders an opportunity to benefit from future growth. Mixed payments are beneficial in transactions involving larger deal sizes or when acquirers seek to optimize capital structure.

The chosen payment method can significantly influence transaction dynamics, including deal valuation, shareholder reactions, and, ultimately, the likelihood of successful completion. Consequently, a comprehensive understanding of payment methods is essential for evaluating takeover premiums and ensuring strategic alignment between the acquiring and target firms. Lately, the usage of mixed payments has increased (Sankar & Leepsa, 2018).

3.4.4 Perimeters affecting the choice of the payment method

A combination of internal and external factors influences the decision regarding the choice of payment method. Broader market conditions, such as current interest rates and trends in debt markets, can notably affect whether acquirers opt to use stock instead of cash for transactions. Shareholders of the target company aim to maximize their returns while minimizing risks and transaction-related costs. Opting for a cash payment method results in an immediate tax obligation for target shareholders, prompting them to demand higher premiums. Historically, target shareholders have experienced greater

abnormal returns in cash transactions due to these substantial premiums. According to Bellamy and Levin (1992), acquirers tend to offer significantly higher premiums for cash payments compared to stock or mixed payment methods.

When considering the payment method, it is important to recognize that indirectly related factors can also have an impact. These include the state of the macroeconomy, the market sentiment, and even the strength of trade unions in the target company's country and industry. Country-specific market practices also play a role, as do the size of both the acquiring and target companies.

Simonyan (2014), on the other hand, states that premiums tend to be higher during periods of investor pessimism, when the market is undervalued, and lower during periods of investor optimism, when the market is overvalued.

According to Faccio and Masulis (2005), the payment method can even have cultural differences between different countries. European M&A transactions are predominantly financed through cash payments. In their study, 80% of the transactions were completed using solely cash, while 8.4% of the deals involved a combination of cash and stock, and 11.3% of the transactions were financed entirely with stock. On average, mixed-payment transactions comprised a 56,9% proportion of cash compared to 43,1 % of stock.

In contrast, research by Andrade et al. (2001) indicates that during the 1990s, 70% of M&A transactions by U.S. firms were financed with stock, with 58% relying exclusively on stock payments.

Among European nations, Austria exhibited the highest proportion of all-cash deals (100%), followed by Portugal (90%). Conversely, cash-financed transactions were less prevalent in Finland (66%) and Norway (69%). Despite variations across countries, cash remains the dominant payment method in European M&A transactions.

The relationship between payment methods and takeover premiums has been widely explored in academic literature. Shareholders of the target company aim to maximize their returns while minimizing risks and transaction-related costs. Cash payments, however, create an immediate tax liability for target shareholders, prompting them to demand higher premiums.

Prior research has also identified several firm-specific characteristics that influence the choice of payment method. Ismail and Krause (2010) examine the impact of size relativity between the acquiring and target firms. They observe that acquiring a relatively large target is often more efficiently financed through stock or mixed payments, as acquirers may lack sufficient cash reserves to support substantial cash transactions. Moreover, relying heavily on debt financing for such deals can heighten default risk. Consequently, the use of cash payments becomes less common as the size of the target firm relative to the acquirer increases. When the target and acquirer are of similar size, stock or mixed payments are generally preferred. For these reasons, larger deal sizes are more closely associated with stock payments (Boateng & Bi, 2014).

Chen et al. (2018) examine the impact of powerful labour unions on the choice of payment method in mergers and acquisitions. Their study hypothesizes that acquirers are more inclined to opt for cash payments when confronted with influential unions within either the target or the acquiring firm.

The empirical analysis conducted by Chen et al. (2018) supports this hypothesis. The findings indicate that an increase in the acquiring firm's unionization rate significantly increased the likelihood of selecting cash over alternative payment methods. Moreover, the positive correlation between union strength and the probability of cash payment was even more pronounced in regions where unions hold greater bargaining power, specifically, in states without right-to-work laws. In such environments, unions tend to exert a more decisive influence, reinforcing the acquirer’s preference for cash transactions to mitigate potential risks associated with union negotiations.

This research highlights the strategic considerations acquirers must evaluate when selecting payment methods in M&A transactions, particularly in contexts where organized labour wields substantial influence.

According to Bebenroth and Ahmed (2021), the company size further influences the preferred payment method. Larger firms generally have better access to debt markets and are more inclined to utilize cash payments. Cash transactions offer immediate liquidity and certainty, making them attractive to shareholders seeking stability and risk mitigation. Conversely, small and mid-sized companies often face greater challenges accessing debt markets and may have limited cash reserves. Consequently, they are more likely to use stock or mixed payments. However, despite larger firms' improved access to debt financing, the total deal value remains a critical determinant of the chosen payment method.

3.5 Nordic market regulation effect to the valuation data

In the Nordic countries, a comprehensive set of laws and regulations governs how firms should report on their business activities. These regulations are generally more specific and stricter for firms whose shares are publicly traded compared to privately owned ones. The regulated information disclosed externally by listed firms includes updates provided through stock exchanges' regulatory news services and requirements to adhere to a specific reporting format when publishing annual reports.

In addition, in recent years, the EU has clarified companies' obligation to prepare a separate sustainability report, which must be reviewed independently from the annual report. These factors together significantly enhance the acquiring company's ability to obtain an accurate and sufficient understanding of the target listed company's situation and operations and to make a precise valuation of it.

Additionally, analysts provide broader coverage and engage in more extensive speculation regarding the performance of listed firms compared to their private counterparts. Due to this increased analyst coverage and stricter reporting regulations, public firms are scrutinized more than privately held firms. Consequently, the risk of misvaluation for public targets is reduced (Ekkayokkaya et al., 2009).

Previous studies indicate that the outcomes of mergers and acquisitions in the Nordic markets differ significantly from those in the US and UK markets from the buyers' perspective. When comparing the success of acquisitions involving listed target companies, transactions paid in cash resulted in slightly positive outcomes in both the Nordic and the US and UK markets. However, for stock-financed transactions, the outcome was slightly negative in the US and UK markets but positive in the Nordic markets. A comparison of mixed-payment transactions was impossible due to the absence of data from the US and UK markets.

In contrast, when examining the success of acquisitions involving non-listed target companies, cash transactions resulted in slightly positive outcomes in both the US and UK and Nordic markets. Stock-financed acquisitions were positive in the US and UK markets but slightly negative in the Nordic markets. Transactions involving mixed payments yielded slightly positive outcomes in the US and UK markets and positive outcomes for buyers in the Nordic markets (Roitto, 2017).

4 Data and methodology

The study aims to analyse the impact of leverage on acquirer performance in Nordic M&A transactions. This section describes the data and methodologies used in the study.

Initially, the aim was to conduct a study on M&A during 2010–2024, i.e., the decade immediately following the financial crisis, when Europe experienced an era of zero and negative interest rates. However, research data were only available from 2014 onwards, which led to the revised study period of 2014–2023.

The findings may be partially influenced by two significant disruptions towards the end of this period: the COVID-19 pandemic (2019–2021) and Russia's aggressive invasion of Ukraine in February 2022. Both events significantly affected economic activity and market dynamics, ultimately contributing to high inflation and rising interest rates. These developments have had both direct and indirect implications for the M&A market.

4.1 Data

The data are collected from the LSEG (ex., Refinitiv) database, with the help of Senior Researcher Jaakko Tyynelä. The original dataset consisted of multiple files retrieved from the LSEG database. In total, the raw data included approximately 20,000 M&A transactions. However, most of these were excluded due to missing key information such as deal value data, return on equity data, leverage data, or stock price data. In many cases, relevant stock return data before and after the deal, or complete financial indicators, were not available. Due to limitations related to the university's data licensing, retrieving all the desired complementary data was impossible. As a result, the final dataset size was significantly reduced.

The original files were structured into separate data components, including financial indicators for acquiring firms, stock price data for acquirers, and country-level stock indices.

These datasets were merged into a coherent and consistent format for empirical analysis. The final dataset includes 619 transactions completed in the Nordic countries between 2014 and 2023, remaining sufficiently large and diverse for meaningful empirical analysis.

4.1.1 Data selection

The dataset includes both domestic and cross-border deals within the Nordic region. Iceland was excluded from the sample due to the very low number of transactions during the period and insufficient data availability.

The scope of the dataset was adjusted due to data availability constraints, and a sample that was as broad as possible was maintained to enhance the reliability of the study. The final sample consists primarily of publicly listed companies, as one of the main inclusion criteria was the accessibility of necessary financial and stock market data. To qualify for inclusion, transactions had to be completed (not only announced), fully executed acquisitions (not partially executed), and financed through equity or debt. In addition, acquiring firms had to be listed for a sufficient period to ensure that relevant stock price data and financial data could be collected. The research data include all mergers and acquisitions for which the necessary information for analysis was available for both the acquiring and the target company.

One of the main filtering criteria was the availability of financial data for the acquiring firm, one year before and one year after the transaction. Another important requirement was the availability of deal value, which led to the exclusion of many observations. In the initial dataset, many transactions involved Nordic acquirers, but targets outside Nordic countries. Given the relatively homogeneous economic and regulatory environment within the Nordics, these cross-regional transactions were excluded to enhance the reliability and comparability of the analysis. Only transactions in which the acquirer and target were in the Nordic countries were retained, including domestic and intra-Nordic cross-border deals.

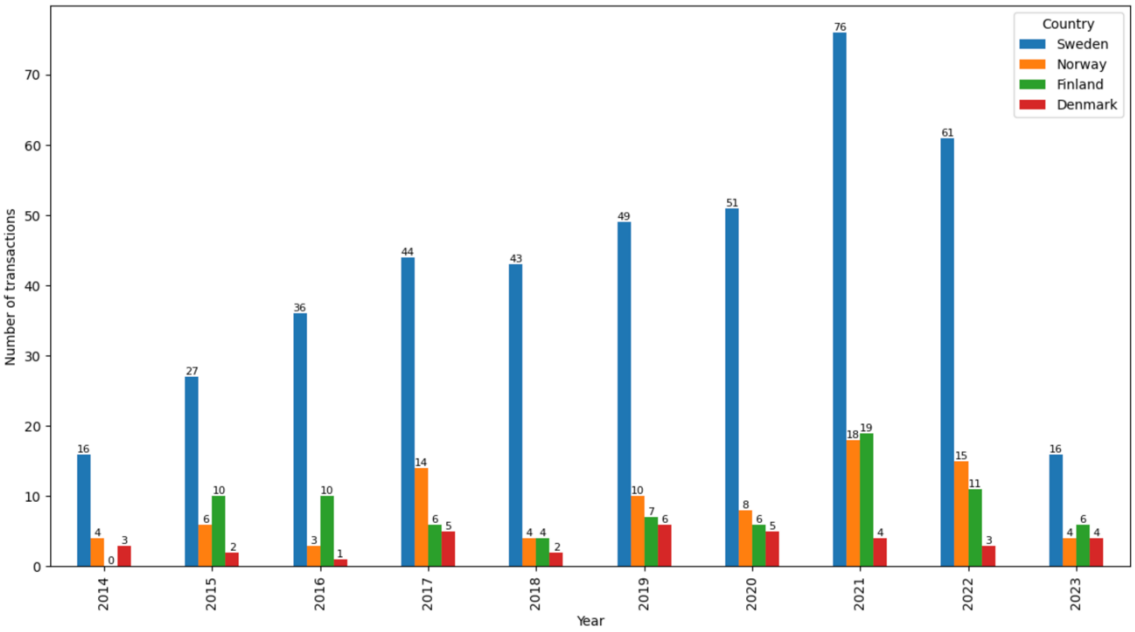

Figure 1. Number of yearly transactions per country.

As presented in the graph below, the dataset contains 419 transactions completed in Sweden, 86 Transactions completed in Norway, 79 transactions completed in Finland, and 35 transactions completed in Denmark. Sweden dominates the number of transactions, representing the largest and most active M&A market among the Nordic countries. Notably, Denmark's share in the dataset appears relatively low compared to the size of its actual market. This discrepancy is likely due to differences in transparency and reporting culture, as Danish firms may follow distinct disclosure practices. The dataset has been limited based on the availability and accessibility of information, which appears to be most comprehensive in the case of Sweden.

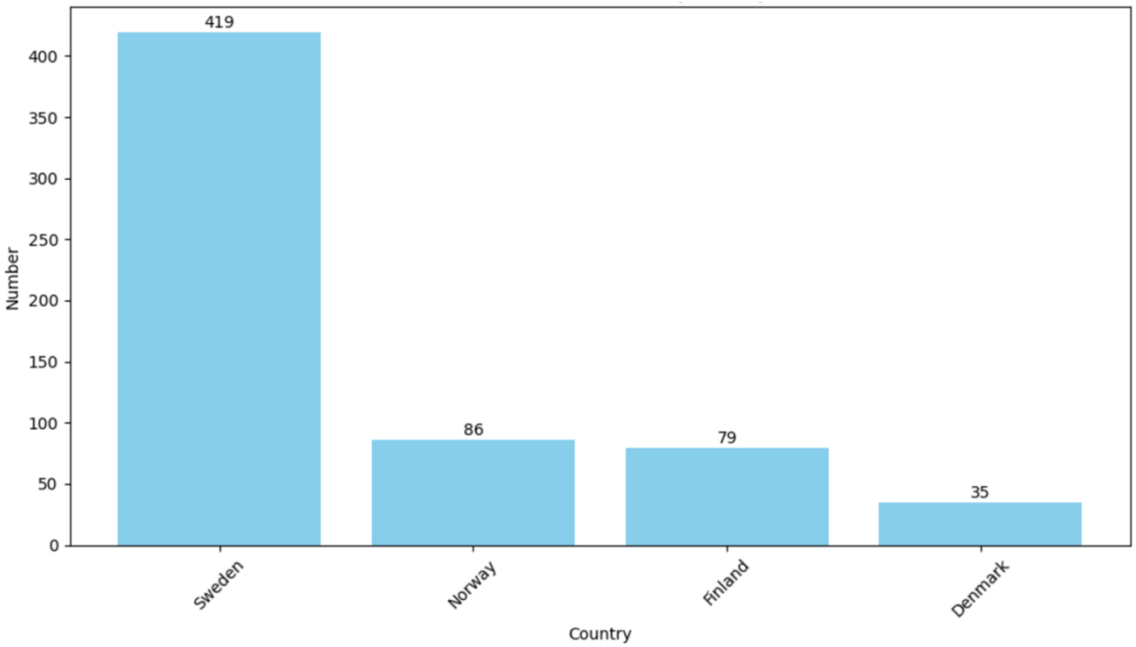

Figure 2. Number of total transactions by country.

Financial firms, such as banks and insurance companies, are excluded from the sample due to the significant influence of explicit or implicit investor insurance schemes, such as deposit insurance, on their leverage. Additionally, their debt-like liabilities are not directly comparable to the debt issued by non-financial firms. The financial sector was excluded from the sample due to its fundamentally different capital structure and regulatory environment. Including financial firms could distort the interpretation of leverage and performance variables. The remaining 12 industry categories are sufficiently broad to capture variation across sectors while maintaining consistency in financial characteristics. The remaining industry categories are the following: Consumer Products and Services, Consumer Staples, Energy and Power, Government and Agencies, Healthcare, High Technology, Industrials, Materials, Media and Entertainment, Real Estate, Retail, and Telecommunications.

Table 1. Number of each transaction per industry in total and by country.

Acquiror Nation	Denmark	Finland	Norway	Sweden
Acquiror Macro Industry				
Consumer Products and Services	1	13	2	52
Consumer Staples	4	4	6	13
Energy and Power	0	3	10	4
Government and Agencies	0	0	0	3
Healthcare	4	4	5	32
High Technology	4	26	28	84
Industrials	7	10	24	62
Materials	3	2	1	13
Media and Entertainment	5	0	1	6
Real Estate	3	5	8	121
Retail	2	7	1	12
Telecommunications	2	5	0	17
Total	35	79	86	419

Of the 619 transactions in the dataset, 430 are domestic, where the acquirer and the target are in the same country. Then, 189 are cross-border, where the companies are from different countries.

Table 2. Number of cross-border and domestic transactions.

Domestic transactions	Cross-border transactions
430	189

Furthermore, to facilitate comparison and reduce currency-related distortions, only transactions denominated in euros, Norwegian kroner, Danish kroner, or Swedish kronor were included. Total assets reported in foreign currencies were converted into euros to ensure comparability across all acquiring firms. The exchange rates used for the conversion reflect the latest available rates as of March 28, 2025. Specifically, the following conversion rates were applied:

1 DKK = 0.1471 EUR

10 NOK = 0.9749 EUR

1 SEK = 0.1014 EUR

These conversions were necessary to allow for consistent logarithmic transformations and to improve the interpretability of the firm size variable across countries. This conversion was executed in Excel. All financial values were converted to euros using fixed exchange rates as of March 28, 2025. Those observations were excluded if data were missing (e.g., NULL).

In conclusion, the final dataset consists of 619 transactions. Several criteria were applied to filter and refine the original data. The transactions fulfil the following criteria:

1. Both the acquirer and target must be based in the Nordic region (excluding Iceland).
2. The transaction must be a full acquisition, not a partial purchase.
3. The deal must be completed, not just announced.
4. The acquiring company must be publicly listed long enough for stock data to be available.
5. Sufficient financial data must be available for both the acquirer and the target.
6. The transaction must be financed with either equity or debt.
7. The deal value must be reported and available.
8. Data for ROE, leverage ratio, and total asset data must be available.
9. The transaction must be denominated in EUR, DKK, NOK, or SEK.
10. Financial sector firms are excluded from the sample.
11. Stock price data must be available one year before and after the transaction.
12. Observations with missing key data were removed from models requiring complete input.

These criteria guarantee that the sample is reliable, comprehensive, and well-suited for analysing leverage and performance in Nordic M&A activity. However, these criteria could still be refined and reformed in future research on the topic.

The table below presents descriptive statistics for the variables used in the analysis, including their mean, standard deviation, minimum, and maximum values. These figures provide an overview of the distribution and variability of the data.

Table 3. Descriptive statistics.

	Obs.	Mean	Std. Dev.	Minimum	Maximum
BHAR	619	-.0210941	.8474813	-15.51085	7.700265
ROE t (%)	619	17.62761	131.33428	-438.80	1150.14
ROE t+1 (%)	619	-2.813518	68.46328	-917.45	116.14
Change in ROE	619	-8.42733	83.46912	-1168.42	980.55
Leverage t-1	619	29.26135	21.33242	0.00	253.67
Leverage t	619	30.89890	17.99741	0.00	79.87
Change in Leverage	619	1.676882	13.57196	-182.55	56.03
Logarithmic Deal Value	619	.5164502	2.155817	-5.681234	7.291023
Log Acquiror Size	619	3.337498	2.471732	-3.670135	10.40912
Acq Stock Change (%)	619	0.07609	0.61432	-0.94378	7.83015
Index Return (%)	619	.0972619	.6501311	-.2607741	15.73824

4.1.2 Model specification and setup

The regression model is kept simple and focused, following standard practices in empirical M&A research. It incorporates the most used variables that affect post-acquisition performance while avoiding overfitting or unnecessary complexity.

Although the data include information from different time points around the transaction (e.g., t and t+1), the dataset's structure is cross-sectional. Each observation corresponds to a single M&A transaction, and therefore, the analysis is conducted using cross-sectional ordinary least squares (OLS) regression.

4.1.3 Variable selection

The study's econometric framework analyses the impact of leverage on acquirer performance in Nordic M&A transactions. It applies cross-sectional regression models to estimate the relationship between leverage and post-M&A outcomes, specifically buy-and-hold abnormal returns (BHAR) and return on equity (ROE). The models control for key firm- and deal-specific characteristics and assess whether firms with higher leverage create or destroy value through acquisitions. This provides insights into the financial mechanisms influencing deal outcomes.

The variables are selected based on established literature in mergers and acquisitions and corporate finance. The primary independent variable of interest is the leverage ratio, calculated as total debt divided by total assets. This measure is widely used due to its simplicity, comparability across firms, and suitability for public and private companies. It reflects the proportion of a firm's assets that are financed by debt, enabling an assessment of capital structure changes resulting from M&A activity.

$$Leverage_t = (Total\ debt\ \% \,/\, Total\ Assets) \quad (1)$$

The same ratio is calculated for the year before the transaction to capture the relative change in financial leverage resulting from the acquisition. This allows for a dynamic analysis of leverage changes around the deal date:

$$Leverage_{t-1} = (Total\ debt\ \% \,/\, Total\ Assets\ - 1\ Year) \quad (2)$$

The change in leverage is then computed as the difference between the leverage at the time of the acquisition and the leverage in the previous year. This variable, ΔLeverage, captures how much the acquiring firm altered its capital structure in connection with the transaction:

$$\Delta Leverage_i = Leverage_{i,t} - Leverage_{i,t-1} \quad (3)$$

Two separate models are constructed to assess the leverage's short-term and long-term effects. The first focuses on buy-and-hold abnormal returns, capturing stock market reactions within one year following the acquisition announcement. The second model examines return on equity, measuring operational profitability one year after the acquisition.

The following presents the traditional formula for calculating buy-and-hold abnormal return:

$$BHAR_{i,t} = \prod_{t=1}^{T}(1 + R_{it}) - \prod_{t=1}^{T}(1 + R_{mt}) \quad (4)$$

Where R_{it} refers to the return of the firm (the acquiring company's stock return), while R_{mt} refers to the market return, based on the relevant benchmark country index of the acquirer.

Several control variables are included to isolate the effect of leverage and ensure the regression models' robustness. These include the logarithm of the acquirer's total assets (LogAcquirorSize) as a proxy for firm size and the logarithm of deal value in euros (LogDealValue) to control for transaction scale. The BHAR model includes the average return of the relevant country-specific stock index (IndexReturn) to adjust for broader market movements during the holding period.

In addition, a dummy variable (Crossborder) is introduced to account for the geographical scope of the acquisition, distinguishing between domestic and international transactions. This variable controls for potential differences in financing needs, regulatory environment, and integration complexity associated with cross-border deals.

Dummy variables were created for all macro industry categories except "Real Estate", which was chosen as the reference group due to its prevalence in the sample.

Coefficients of other industry dummies should therefore be interpreted in relation to the Real Estate sector.

The models aim to isolate the effect of leverage and its change between the pre- and post-acquisition period, while controlling for relevant firm- and deal-level characteristics. All models are estimated using ordinary least squares.

4.2 Methodology

The analysis applies cross-sectional OLS regression to assess the effect of capital structure, deal characteristics, and firm-level controls on post-acquisition performance. Two separate models are estimated: one using buy-and-hold abnormal returns (BHAR) as a market-based performance measure, and the other using return on equity (ROE) as an accounting-based metric.

4.2.1 Regression model for buy-and-hold abnormal return (BHAR)

The following model is estimated to assess how leverage affects short-term investor reaction to M&A transactions:

$$\begin{aligned} BHAR_{i,t+1} = {} & \beta_0 + \beta_1(Leverage_{i,t}) + \beta_2(\Delta Leverage_{i,t}) \\ & + \beta_3(Deal\ Value_{i,t}) + \beta_4(Acquirer\ Size_{i,t}) \\ & + \beta_5(Market\ Return_{i,t}) + \beta_6(Crossborder_{i,t}) \\ & + \sum \beta_k(Industry\ Dummies_i) + \varepsilon_i \end{aligned} \quad (5)$$

Where:

$BHAR_{i,t+1}$= Buy-and-hold abnormal return for firm *i* one year after the transaction.

$Leverage_{i,t-1}$ = Total debt to total assets during the transaction year.

$\Delta Leverage_{i,t}$ = Change in leverage from t to t+1.

$Deal\ Value_{i,t}$ = Logarithm of the transaction value.

$Acquirer\ Size_i, t$ = Logarithm of the acquiring firm's total assets over the last twelve months (LTM).

$Market\ Return_{i,t}$ = Average return of the acquirer's local stock index over the BHAR estimation window.

$Crossborder_{i,t}$ = 1 if the deal is cross-border, 0 if domestic.

$Industry\ Dummies_i$ = Fixed effects for industry classifications.

ε_i = Error term.

The model's dependent variable is the BHAR of 1 year after the transaction date. Buy-and-hold abnormal return for firm *i*, calculated as the difference between the firm's stock return and the return of the relevant market index over one year following the transaction. The market return is benchmarked against the country-specific market index (OMX Helsinki, OMX Stockholm, OMX Copenhagen, and OBX Oslo), depending on the acquirer's home market.

4.2.2 Regression model for return on equity (ROE)

The following model is estimated to evaluate how leverage impacts financial performance post-acquisition:

$$\begin{aligned} ROE_{i,t+1} = {} & \alpha_0 + \alpha_1(Leverage_{i,t}) + \alpha_2(\Delta Leverage_{i,t}) + \alpha_3(Deal\ Value_{i,t}) \\ & + \alpha_4(Acquirer\ Size_{i,t}) + \alpha_5(Crossborder_{i,t}) \\ & + \sum \alpha_k(Industry\ Dummies_i) + u_i \end{aligned} \quad (6)$$

Where:

$ROE_{i,t+1}$ = Return on equity one year after the transaction.

$Leverage_{i,t-1}$ = Total debt to total assets during the transaction year.

$\Delta Leverage_{i,t}$ = Change in leverage from t to t+1.

$Deal\ Value_{i,t}$ = Logarithm of the transaction value.

$Acquirer\ Size_{i,t}$ = Logarithm of the acquiring firm's total assets over the last twelve months (LTM).
$Crossborder_{i,t}$ = 1 if the deal is cross-border, 0 if domestic.
$Industry\ Dummies_i$ = Fixed effects for industry classifications.
u_i = Error term.

The model's dependent variable is the ROE 1 year from the transaction date. Return on Equity for firm *i* is calculated as the ratio of net income to shareholders' equity, measured one year after the completion of the acquisition. This indicator reflects the firm's ability to generate profit from its equity base post-acquisition. All ROE values are retrieved from LSEG and are based on reported figures from the first full year following the transaction.

The use of cross-sectional OLS regression is aligned with established practices in empirical M&A research. As the dataset is cross-sectional, each observation corresponds to a single M&A transaction, and more advanced techniques such as panel or time-series models were not applicable. OLS offers a transparent and interpretable framework for estimating the average effect of leverage on post-acquisition performance while accounting for observable firm- and deal-level heterogeneity.

However, the method does not explicitly address potential issues such as heteroskedasticity or omitted variable bias. Future research could consider alternative approaches, such as propensity score matching or instrumental variables, to address endogeneity or selection bias better.

5 Empirical results

This chapter interprets and analyses the results of the analysis of leverage effects on acquirer performance in Nordic M&A transactions. It aims to address and answer the hypotheses presented in Chapter 1.

5.1 Regression results and analysis

This section presents and analyses the regression results from two distinct models examining the determinants of post-acquisition firm performance. The first model focuses on market-based performance, using BHAR as the dependent variable, while the second model investigates accounting-based performance through ROE. Both models are theoretically motivated and incorporate key explanatory variables related to capital structure, firm and transaction characteristics, and fixed effects for industry classification. The analysis is based on a cross-sectional sample of 619 M&A transactions involving acquirers from the Nordic region between 2014 and 2023. Due to listwise deletion of missing values, the number of observations included in each model is slightly reduced.

5.1.1 Determinants of BHAR

The first regression model explores the extent to which leverage, changes in financial structure, and deal characteristics affect the acquiring firm's abnormal market performance, measured by BHAR one year after the transaction. In addition to leverage and change in leverage, the model includes the logarithm of deal value, the logarithm of firm size, the local market return over the same time window, a dummy for cross-border transactions, and industry-fixed effects.

Table 4. Regression results for BHAR.

VARIABLES	(1) BHAR	Std. errs.	t
Leverage at time t	0.00166	(0.00196)	0.84
Change in Leverage (ΔLeverage)	-0.00369*	(0.00188)	-1.96
Log of deal value	-0.0251	(0.0158)	-1.59
Log of acquiror size	0.0131	(0.0157)	0.83
Market return	-0.915***	(0.0383)	-23.93
Cross-border transaction (dummy)	0.0342	(0.0562)	0.61
High Technology (dummy)	-0.0192	(0.103)	-0.19
Materials (dummy)	-0.0218	(0.161)	-0.14
Industrials (dummy)	0.0162	(0.0957)	0.17
Energy (dummy)	0.122	(0.161)	0.76
Consumer Staples (dummy)	-0.225	(0.139)	-1.62
Telecommunications (dummy)	0.135	(0.144)	0.93
Consumer Products (dummy)	0.189*	(0.110)	1.71
Healthcare (dummy)	-0.0457	(0.114)	-0.40
Government (dummy)	-0.443	(0.364)	-1.22
Media (dummy)	0.0681	(0.198)	0.34
Retail (dummy)	-0.0353	(0.151)	-0.23
Constant	-0.0288	(0.123)	-0.23
Observations	615		
R-squared	0.500		

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The model yields 615 valid observations and is statistically significant overall ($F(17, 597) = 35.15$, $p < 0.001$), with an R-squared of 0.5002. This high level of explanatory power suggests that the model specification captures a substantial portion of the variation in abnormal returns following acquisitions.

The strongest and most statistically robust finding is the negative and highly significant coefficient on market return (–0.915, $p < 0.001$), which confirms that higher market

returns are associated with lower BHAR. Since BHAR is calculated as the difference between actual and benchmark returns, this inverse relationship aligns with expectations. It indicates that the model correctly isolates abnormal performance from broader market movements.

Change in leverage is also statistically significant (p = 0.050) and negatively signed (–0.0037), indicating that an increase in financial leverage following the acquisition is associated with lower abnormal stock returns. This result aligns with theoretical perspectives suggesting that increased post-acquisition leverage signals heightened financial risk or reduced flexibility, both of which may be penalized by investors. In contrast, the static level of leverage at the time of the transaction (Leverage_t) is not statistically significant, suggesting that markets may react more strongly to changes in capital structure than to its absolute level.

The logarithm of deal value is negatively signed (–0.025), although not statistically significant (p = 0.114). This result is consistent with the literature suggesting that larger deals, while potentially offering scale benefits, entail greater integration complexity and valuation risk. The logarithm of acquirer size is similarly insignificant but positively signed, indicating no clear pattern between firm scale and BHAR in the sample. The dummy variable for cross-border transactions is also insignificant, implying that geographic scope alone does not differentiate post-acquisition abnormal returns.

Industry dummy variables are generally insignificant, suggesting limited sector-level variation in market-based acquisition outcomes. The only variable approaching significance is the consumer products sector, with a positive coefficient (0.188) and a p-value of 0.088, implying that firms in this industry may be better positioned to deliver value through M&A.

In summary, this model highlights the importance of dynamic capital structure adjustments, particularly post-acquisition leverage increases, as a determinant of market

reaction. The relatively high explanatory power further suggests that investors incorporate multiple transaction-level signals into their valuation of M&A activity. The lack of significance among industry and geographic controls reinforces the centrality of financial fundamentals in shaping post-transaction abnormal returns.

5.1.2 Determinants of ROE

The second regression model shifts the focus from market-based valuation to internal operational performance, using Return on Equity one year after the transaction as the dependent variable. The model mirrors the structure of the BHAR regression but excludes the market return control, as ROE is an accounting-based performance metric unaffected by investor expectations or stock market dynamics.

Table 5. Regression results for ROE.

	(1)		
VARIABLES	ROE	Std. errs.	t
Leverage at time t	0.0356	(0.214)	0.17
Change in leverage (ΔLeverage)	-0.117	(0.205)	-0.57
Log of deal value	3.325*	(1.722)	1.93
Log of acquiror size	5.900***	(1.708)	3.45
Cross-border transaction (dummy)	-3.932	(6.183)	-0.64
High Technology (dummy)	9.215	(11.28)	0.82
Materials (dummy)	8.401	(17.53)	0.48
Industrials (dummy)	5.416	(10.42)	0.52
Energy (dummy)	-9.354	(17.57)	-0.53
Consumer Staples (dummy)	6.821	(15.10)	0.45
Telecommunication (dummy)	-7.210	(15.74)	-0.46
Consumer Products (dummy)	27.19**	(11.95)	2.28
Healthcare (dummy)	-16.22	(12.45)	-1.30

Government (dummy)	-31.06	(39.64)	-0.78
Media (dummy)	14.69	(21.61)	0.68
Retail (dummy)	11.81	(16.46)	0.72
Constant	-29.61**	(13.39)	-2.21
Observations	611		
R-squared	0.088		

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

It includes 611 complete observations and is statistically significant overall ($F(16, 594) = 3.60$, $p < 0.001$), although its explanatory power is relatively modest (R-squared = 0.0883; adjusted R-squared = 0.0638). This is consistent with prior literature, as accounting outcomes such as ROE tend to be influenced by a broader array of operational, managerial, and macroeconomic factors not fully captured in cross-sectional regressions.

In contrast to the BHAR model, neither leverage at time t nor change in leverage is statistically significant in this specification. This result suggests that capital structure changes do not materially affect short-term accounting profitability. While increased leverage may influence investor sentiment or risk perception, as seen in the BHAR results, these changes do not necessarily manifest in the firm's return on equity within the same one-year window.

Logarithm of acquirer size is highly statistically significant ($p = 0.001$), with a positive coefficient (≈ 5.90), indicating that larger acquirers tend to report higher ROE following an acquisition. This finding supports arguments that larger firms benefit from superior integration capacity, resource availability, and managerial expertise. The logarithm of deal value is marginally significant ($p = 0.054$) and positively signed, suggesting that larger acquisitions may be associated with higher ROE, potentially due to synergies or scale efficiencies.

Only the consumer products sector is statistically significant among industry dummies (coefficient = 27.19, p = 0.023). This supports the view that acquirers in this sector outperform their peers in terms of profitability, reinforcing the weak but consistent pattern observed in the BHAR model. Other sector dummies remain insignificant.

In summary, while this model shows weaker explanatory power than the BHAR model, it nonetheless offers valuable insights into the internal financial performance of acquiring firms. Firm size, and to a lesser extent, deal size and industry, appear to be meaningful predictors of ROE, whereas capital structure adjustments are not. These results highlight the distinction between market-based and accounting-based performance indicators and the importance of considering both perspectives in evaluating M&A outcomes.

5.2 Comparative perspective

Taken together, the two regression models provide complementary views of post-acquisition performance. The BHAR model captures market-based, forward-looking assessments of value creation, whereas the ROE model reflects backward-looking, internally based measures of operational profitability. Notably, changes in financial leverage influence BHAR negatively but exhibit no discernible effect on ROE. This asymmetry suggests that while financial restructuring may carry market implications, its impact on short-term profitability is more ambiguous. Firm size emerges as a reliable predictor of ROE but is not statistically significant in explaining abnormal returns, further reinforcing the divergence between market perception and internal performance.

Overall, these findings suggest that successful acquisitions are evaluated through multiple lenses: capital market reactions, operating efficiency, and sector-specific factors all contribute to the acquiring firm's post-transaction trajectory. The models emphasize the value of a dual-performance framework in M&A research and highlight the importance of incorporating both market and operational dimensions in assessing the long-term outcomes of strategic transactions.

5.3 Hypotheses evaluation

This section evaluates the hypotheses introduced in Section 1.2 by integrating empirical results with the theoretical and empirical frameworks established earlier in the thesis. Drawing from regression analyses of both market-based (BHAR) and accounting-based (ROE) performance, the aim is to assess how financial leverage influences post-acquisition value creation in the Nordic M&A context and whether firm or transaction characteristics moderate this relationship.

The dataset, consisting exclusively of leveraged transactions, confirms that financial leverage was a prevalent feature in Nordic acquisitions during the observed period. This outcome aligns with existing literature arguing that acquirers, particularly in capital-intensive markets like the Nordics, frequently use debt to finance strategic transactions (Uysal, 2011; Harford et al., 2009). The observation that most firms used some degree of leverage supports the general claim that debt remains a central mechanism for facilitating acquisitions, particularly when equity issuance is either undesirable or costly due to valuation uncertainty (Baker & Wurgler, 2002).

Although regression results did not reveal a direct statistical association between deal size and leverage usage, the descriptive data reveal a consistent pattern. Larger transactions tend to be accompanied by higher leverage ratios. This corresponds with theoretical expectations from trade-off and pecking order theory, which suggest that larger deals often exceed internal funding capacities and thus require external capital (Myers, 1984; Kraus & Litzenberger, 1973). Consequently, even if the regression failed to detect statistically significant causality, the underlying trend partially confirms that leverage intensity increases with deal magnitude.

The hypothesis that leverages usage is more pronounced in cross-border transactions receives indirect support. While the cross-border dummy was not a significant explanatory factor in either model, a qualitative dataset scan revealed a higher average leverage ratio among international transactions. This aligns with earlier research noting that

cross-border deals often entail elevated capital requirements due to legal, cultural, and operational complexities (Hu & Yang, 2016; Cioli et al., 2020). Nevertheless, the regression model did not validate a statistically significant difference in leverage impact between cross-border and domestic deals, suggesting that other deal- or firm-specific characteristics may moderate the location effect.

Turning to post-acquisition performance, the results were mixed. On the one hand, the BHAR model offered moderate support for the importance of leverage in driving short-term investor response. The negative and statistically significant coefficient of change in leverage indicates that increases in leverage post-transaction are associated with diminished abnormal stock returns. This finding is consistent with previous empirical evidence that markets tend to penalize aggressive financial restructuring due to heightened perceived risk (Jensen, 1986; Rose et al., 2017). Conversely, the static level of leverage at the time of acquisition was found to be insignificant, suggesting that sudden changes in capital structure, rather than absolute levels, primarily shape market reactions.

In contrast, the ROE model showed no statistically significant relationship between leverage and operational profitability. This outcome supports that financial structure adjustments, while important to market perceptions, do not automatically translate into short-term accounting performance improvements. Prior studies have similarly found that ROE is influenced by a broader range of factors, such as integration quality, cost synergies, and managerial execution, which may not be immediately captured in capital structure variables (Hazelkorn et al., 2005; Gaughan, 2015).

The role of firm size emerges as a more reliable determinant of post-acquisition outcomes, particularly in the ROE model, where the logarithm of acquirer size is positively signed and statistically significant. This is consistent with earlier literature suggesting that larger firms benefit from economies of scale, more advanced integration capabilities, and superior post-merger control systems (Gorton et al., 2009; Hassan et al., 2018).

Interestingly, firm size had no significant impact on the BHAR model, reinforcing the distinction between internal efficiency metrics and external market reactions.

Industry effects were generally muted across both models, except for the consumer products sector, which showed a marginally positive and statistically significant impact in both BHAR and ROE regressions. This may reflect sector-specific advantages in post-merger integration or market positioning, suggesting that acquirers operating in consumer-facing industries may be better equipped to generate value from acquisitions, possibly due to clearer synergies or customer base consolidation effects (Simonyan, 2014).

In conclusion, the findings suggest that while financial leverage remains a core component of Nordic M&A transactions, its effect on performance varies by context and metric. Market participants appear particularly sensitive to shifts in capital structure, while operational performance may depend more on firm characteristics such as size and industry affiliation. These observations highlight the importance of integrating both financial and strategic dimensions when evaluating M&A outcomes, and they reinforce the broader argument that value creation is contingent on a complex interaction of financial policy, firm resources, and sector-specific dynamics. To conclude, the following table presents and summarizes the findings of this study:

Table 6. Summary of hypotheses and their validations.

Hypothesis	**Validation**
H_1: Majority of the acquiring companies in the Nordics utilize leverage in their acquisitions.	**Supported:** The sample consists exclusively of leveraged deals, confirming the prevalence of debt financing in Nordic M&A activity.
H_{1a}: Financial leverage is used more in large transactions than in small transactions.	**Partially supported:** While regression results did not yield statistical significance, descriptive statistics indicate a trend consistent with theory.

H_{1b}: Financial leverage is utilized to a greater extent in cross-border transactions compared to transactions conducted within a single country.	**Partially supported:** The cross-border dummy was insignificant in regressions, but average leverage was higher in cross-border deals according to descriptive analysis.
H_2: Leverage usage in M&A transactions positively impacts post-acquisition operative performance.	**Not supported:** Neither leverage nor change in leverage showed statistical significance in the ROE model.
H_{2a}: Cross-border transactions provide lower impacts on post-acquisition operative compared to domestic transactions.	**Not supported:** The cross-border dummy was negative but statistically insignificant in the ROE regression.
H_{2b}: Larger companies manage to achieve better impacts on post-acquisition operative performance compared to smaller companies.	**Supported:** Logarithm of acquiror size was statistically significant and positively associated with ROE.
H_3: Leverage usage in Nordic M&A transactions positively correlates with higher buyer short-term value creation.	**Not supported:** Change in leverage had a statistically significant negative coefficient in the BHAR model, indicating reduced abnormal returns with increased leverage.

5.4 Limitations

While the study offers insights into the relationship between financial leverage and post-acquisition performance in Nordic transactions, several limitations must be acknowledged. The study adopts a cross-sectional research design, which limits causal inference. Although regression models can identify statistically significant associations, they cannot establish causality between leverage and firm performance outcomes. Unobserved heterogeneity or reverse causality may influence the results, particularly in the case of leverage decisions that are endogenous to a firm's strategic or financial condition.

Additionally, the one-year post-acquisition time frame for both BHAR and ROE measurements captures only short-term effects. While this window aligns with the practices of comparable empirical studies, it may overlook delayed integration effects or longer-term

value creation, especially in complex or cross-border transactions. As such, the findings may not fully reflect the enduring impact of leverage usage on firm performance. Furthermore, the sample includes only completed transactions with available financial data, possibly leading to a survivorship bias. Deals that failed to complete or were excluded due to missing data may systematically differ in leverage structure or performance, limiting generalizability. There is a limitation with transactions from, for example, Denmark, which is underrepresented in the dataset due to data availability constraints. On the other hand, while being the biggest market in the Nordics, Sweden is overrepresented in the data.

Finally, while logarithmic transformations for continuous variables such as deal value and acquiror size are methodologically appropriate for reducing skewness and improving model fit, they may complicate interpretation for non-technical audiences. Additionally, operationalizing industry effects through fixed dummies may not capture more detailed sectoral variation within broader industry categories. While these limitations do not affect the validity of the findings, they point to areas where further research could extend and refine the analysis, including panel data, alternative performance windows, and more detailed control variables.

6 Conclusions

This thesis studies how leverage influences buyer returns and value creation in Nordic mergers and acquisitions using a comprehensive dataset of transactions conducted between 2014 and 2023 in Denmark, Finland, Norway, and Sweden. By applying two separate performance measures, buy-and-hold abnormal return and return on equity, the study aimed to provide empirical evidence on whether leverage contributes positively to post-acquisition performance, both from a market-based and accounting-based perspective.

The results of the regression analyses offer several notable insights. Firstly, leverage usage was found to be widespread among acquiring firms in the Nordic region, particularly in large and cross-border transactions. This finding supports the hypothesis that companies in these deals are more likely to utilize debt financing, reflecting their enhanced access to financial markets and greater need for external capital. Secondly, the analysis revealed a positive association between leverage and BHAR, suggesting that debt-financed acquisitions often result in superior market performance for acquirers within the one-year post-acquisition window. This supports the view that leverage can enhance shareholder value, particularly when used prudently and within the bounds of an optimal capital structure.

In contrast, the relationship between leverage and operational performance, as measured by ROE, was weaker. While some firms achieved higher ROE following leveraged acquisitions, the findings were not consistently statistically significant across all models. This divergence between market-based and accounting-based outcomes may reflect the differing sensitivities of these measures to integration challenges, industry conditions, and firm-specific capabilities. Importantly, cross-border deals showed weaker operational performance than domestic ones, possibly due to greater complexity in post-merger integration, regulatory divergence, and cultural misalignment. These findings align with prior literature, which suggests that while leverage can drive short-term market

gains, its impact on operational outcomes is more complex and dependent on the context.

The empirical evidence also highlighted the strategic importance of leverage in capital structure decisions, particularly concerning firm size and transaction characteristics. Larger acquiring firms appeared more capable of managing the risks associated with leverage, achieving relatively stronger post-acquisition results than smaller firms. These outcomes affirm that firm maturity, managerial competence, and experience in M&A processes are important for unlocking synergies and achieving sustainable value creation.

From a broader perspective, this study contributes to the academic discussion by focusing on the Nordic M&A landscape, which has been underrepresented in prior literature. The Nordic context, characterized by strong regulatory oversight, risk-averse financial culture, and well-developed banking systems, offers a unique setting for evaluating the effects of leverage in corporate acquisitions. The findings suggest that leverage can be valuable for enhancing shareholder returns when used strategically and supported by effective governance and financial planning, despite a generally conservative financial environment.

Nevertheless, this study is subject to several limitations. One such limitation is the reliance on one-year post-acquisition performance measures. While BHAR and ROE provide meaningful short-term indicators, they may not fully capture the long-term value creation or integration success resulting from M&A transactions. Furthermore, the sample size, though comprehensive, excludes Iceland and may not be fully representative of smaller or privately held firms due to data availability constraints. Additionally, macroeconomic factors, such as interest rate environments and capital market conditions, were not explicitly controlled for in the regression models, even though they may have influenced leverage decisions and performance outcomes during the study period.

Another consideration concerns the methodological approach. While regression analysis offers valuable insights into statistical relationships, it cannot fully account for endogeneity or omitted variable bias. Qualitative dimensions of M&A, such as managerial experience, cultural integration, or strategic fit, were not captured in this analysis, but may significantly influence acquisition outcomes. Future studies could therefore benefit from a mixed-method approach that combines quantitative analysis with case studies or interviews to explore these aspects in greater depth.

Building on this research's results and limitations, several future research directions are proposed. First, extending the time horizon beyond one year could reveal longer-term effects of leverage usage on acquirer performance, particularly as synergies are realized and integration challenges are resolved. Second, disaggregating the analysis by industry could uncover sector-specific dynamics that influence the success of leveraged and other M&A strategies. Third, incorporating macroeconomic and institutional variables, such as interest rate trends, credit conditions, and regulatory changes, may provide a more comprehensive understanding of how external factors interact with leverage and acquisition outcomes. Finally, future research could explore the role of corporate governance mechanisms and managerial incentives in shaping leverage decisions and post-acquisition success. Given the potential for agency conflicts in M&A transactions, understanding how governance quality moderates the relationship between leverage and value creation would offer meaningful insights for academics and practitioners.

In conclusion, this thesis demonstrates that leverage is essential in shaping buyer returns and value creation in Nordic M&A transactions. While the positive relationship between leverage and market-based performance is evident, the operational benefits depend more on the context. These findings have practical implications for corporate managers, investors, and policymakers, emphasizing the need for a strategic, well-informed approach to leverage usage in acquisitions. This study adds to the existing literature by providing a more detailed understanding of how capital structure decisions affect M&A outcomes, particularly in a unique regional context.

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