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Corporate Spin-offs and Operational Performance

Evidence from Nordic Listed Companies

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ABSTRACT:

This study examines whether corporate spin-offs improve the operational performance of Nordic listed companies. The study focuses on listed companies in Finland, Sweden, Norway, and Denmark, and aims to contribute to the existing research on the effects of spin-offs in the Nordic markets. The empirical analysis is based on a sample consisting of 113 spin-off transactions that took place between 2004 and 2022. Operating performance is measured by return on assets, and post-spin-off changes are assessed using panel regression models with firm-fixed and year-fixed effects. In addition, an event-time analysis is conducted to examine whether the effects on performance appear gradually before and after the transaction. The results do not suggest that spin-offs lead to statistically significant improvements in operating performance. The post-spin-off effect is statistically insignificant in all regression models. The event-time analysis also shows that companies' operating performance is relatively strong even before the spin-off, whereas no significant improvements are observed after the event. Furthermore, leverage is found to be negatively correlated with operational performance, while firm size is found to be positively correlated with profitability.

KEYWORDS: Corporate spin-offs, Operational performance, Corporate restructuring, Firm performance, Agency theory, Nordic listed companies

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Abbreviations

M&A = Mergers and acquisitions

ROA = Return on assets

IPO = Initial public offering

ROE = Return on equity

1 Introduction

Corporate restructuring has attracted considerable attention in finance research over the past few decades. According to existing academic studies, the popularity of spin-off arrangements as a corporate restructuring strategy has grown significantly, particularly since the early 2000s. The increase in the use of spin-offs has led studies to explore their different aspects and implications, which has resulted in several different areas of research, such as market reactions, managerial incentives, and initial returns.

Public perception often simplifies spin-offs as value-enhancing transactions that are primarily motivated by management decisions to optimize the corporate structure. However, this approach does not take into account the different factors underlying spin-off transactions and their varying outcomes. Previous studies typically highlight the short-term positive market reactions associated with spin-off announcements, which are related to improved managerial focus, reduced agency costs, and better valuation transparency. In many cases, companies have used spin-offs to separate non-core operations and improve strategic focus. Recently, companies across various industries have increasingly used spin-offs as part of broader restructuring strategies, making these transactions important for both investors and corporate decision-making.

Although spin-offs are generally viewed positively, the empirical evidence regarding their effects on firms' operational performance remains unclear. Previous studies have highlighted inconsistencies and complexity in the long-term value effects of spin-off firms. These conflicting results may be partly due to methodological differences as well as varying market conditions. In addition, industry-specific characteristics and firm-specific factors may influence spin-off outcomes. The ambiguous results emphasize the need for further research and offer an opportunity to identify the conditions under which spin-offs generate sustainable shareholder value.

Based on these research gaps, this thesis examines the operational performance of Nordic listed companies surrounding spin-off transactions. By applying reliable statistical

methods and analyzing comprehensive data, this study aims to deepen the understanding of whether firms experience improvements in operational performance following spin-off transactions and what factors influence the success of these transactions.

1.1 Purpose of the study

The purpose of this study is to examine the development of the operational performance of Nordic listed companies before and after a spin-off. The study investigates whether the companies' operational efficiency changes after a spin-off compared to the period before the transaction. Operational performance is examined specifically from the perspective of profitability, using return on Assets (ROA) as a metric. In addition, the study analyzes how firm-specific factors, such as firm size and debt, are related to post-spin-off performance. The study is based on firm-year panel data, which examines the internal development of firms around the time of the spin-off.

There are several factors underlying this study. First, although spin-off companies have been widely studied from the perspective of shareholder value and stock market reactions, considerably less attention has focused on their effects on firms' operating performance, especially in the Nordic markets. Previous studies have focused primarily on the U.S. market, which means that the results do not necessarily fully reflect the characteristics of Nordic listed companies and their corporate structures. Second, previous studies have reported conflicting results regarding the effects of spin-off arrangements on firm performance over time. Some studies suggest that spin-off arrangements improve strategic focus and operational efficiency. Other studies find that the benefits may decline over time or depend on firm-specific and industry-related factors. This creates a need for further research on how firms perform following spin-off arrangements. Third, spin-offs are significant corporate restructuring decisions that can alter companies' organizational structures and strategic focus. Therefore, examining the operational performance associated with spin-off transactions can provide investors, corporate executives, and

decision-makers with valuable insights into the long-term consequences of corporate transactions.

1.2 Contribution to the prevailing literature

This thesis responds to the above-mentioned motivations and contributes to the existing literature on spin-off transactions in three key ways. First, it provides an updated view of the operational performance of Nordic listed companies in the context of spin-off transactions. Previous research has focused primarily on the effects on shareholder value and stock market reactions, particularly in the U.S. market. Less attention has been paid to the operational consequences of corporate spin-offs in the Nordic markets.

Second, this thesis contributes to the literature by examining whether companies' operational performance changes following spin-off transactions. Previous studies have reported conflicting results regarding the long-term benefits of spin-offs, particularly in relation to operational efficiency and profitability. The aim of this study is to provide further insight into these issues by analyzing firm-level performance before and after spin-off events using accounting-based performance measures.

Third, the Nordic countries offer an interesting context for studying spin-off firms because their market structures, ownership concentration, and governance systems differ from those of large markets. Therefore, this study provides additional insight into how spin-offs affect firms operating in the Nordic institutional environment.

1.3 Structure of the study

The structure of this thesis is as follows. The first chapter introduces the topic and purpose of the study as well as its proposed contribution to existing research. The second chapter provides the theoretical background by examining corporate restructuring and

discussing the main theories related to spin-off transactions. These include agency theory, signaling theory, and corporate diversification and focusing. Chapter three presents a comprehensive literature review with a particular focus on spin-offs and their performance effects. This forms the basis for the research hypotheses developed in this study, which are presented in the same chapter. Chapter 4 describes the data and methodology applied in the empirical analysis. It presents the sample selection process, variable definitions, and the empirical models used to examine the relationship between spin-offs and operational performance. Chapter 5 presents the empirical results of the study. Descriptive statistics and correlation analysis are reported, followed by the main regression results and event-time analysis examining performance around the spin-off transactions. Chapter 6 discusses the findings in relation to previous literature and theoretical expectations. Finally, Chapter 7 concludes the study by summarizing the main findings, discussing their practical implications, evaluating the limitations of the study, suggesting directions for future research, and answering the research question.

2 Theoretical background

This chapter provides an overview of the theoretical background relevant to this study. It begins by discussing corporate restructuring, with a particular focus on spin-off arrangements and how they differ from other corporate transactions. In addition, the motives and processes behind spin-off arrangements are examined to better understand their potential effects on companies' operational performance. Furthermore, this chapter discusses potential mechanisms through which spin-offs may affect corporate efficiency, strategic focus, and resource allocation. Finally, this chapter presents key financial theories that support the analysis of spin-offs and their effects on corporate performance. These include agency theory, signaling theory, and the corporate focus hypothesis, which together form a theoretical framework for examining the effects of spin-off transactions on firm performance.

2.1 Corporate restructuring

Corporate restructuring refers to actions taken by a company to change its organization, operations, or financial structure in order to improve efficiency, focus, or the overall value of the company. These measures include acquisitions, mergers, divestitures, and various types of ownership restructuring. Usually, the main purpose of corporate restructuring is to improve strategic alignment, optimize capital allocation, and respond to changes in the competitive environment. According to a study by Berger and Ofek (1995), restructuring has become more common among companies seeking to strengthen their competitiveness and create shareholder value.

There are many types of corporate restructuring, depending on the company's objectives and the amount of ownership or control being transferred in the process. The most common forms are mergers and acquisitions (M&A), which are mainly growth-oriented transactions, and divestitures, which involve the sale or separation of certain business units. The objective of mergers and acquisitions is usually to expand business operations

or achieve synergies. On the other hand, divestitures are often motivated by the need to improve business efficiency or release capital tied up in activities that are not part of the core business (John et al., 1992).

2.1.1 Types of divestitures

According to Brealey et al. (2020, p. 874), a spin-off occurs when a parent company distributes the shares of a subsidiary to its current shareholders on a pro rata basis, creating an independent and separately listed company. Spin-offs do not raise new capital, but they are often motivated by strategic considerations. The motives behind spin-offs may include differences in corporate cultures, opportunities to exploit growth potential, and increased focus on core business activities. In addition, spin-offs may improve managerial incentives and provide investors with the opportunity to invest in a more focused business entity (Cusatis et al., 1993).

As a result of the transaction, the spun-off company becomes an independently operating entity with its own management and strategic focus. The separation may improve the parent company's strategic focus and operational efficiency by reducing organizational complexity and allowing management to concentrate more effectively on core business activities (Daley et al., 1997). Desai and Jain (1999) argue that spin-offs may improve transparency and market valuation by separating business operations with different characteristics. The decision to implement a spin-off is often influenced by several factors, including corporate strategy, operational efficiency, governance structures, shareholder value creation, and prevailing market conditions.

A sell-off refers to the direct sale of assets, such as a subsidiary or business unit, to another company in exchange for cash. Unlike spin-offs, this type of divestment generates a cash flow and does not involve the issuance of new shares. It can therefore be used, among other things, to strengthen the parent company's balance sheet, reduce debt, or finance new investments. A sell-off usually results in a loss of control over the business

and may be motivated by a desire to divest non-core activities or allocate resources more efficiently. Brealey et al. (2020, p. 876) also mention that announcements of asset sales are generally viewed positively by investors, as on average, assets are used more productively after a sale. Similar evidence has also been documented in empirical research on divestitures (John and Ofek, 1995).

According to Brealey et al. (2020, p. 875), equity carve-out differs slightly from the methods presented earlier. Equity carve-out involves selling a minority ownership stake in a subsidiary to outside investors through an initial public offering (IPO). In an equity carve-out, the parent company retains a majority control of the subsidiary, which is typically 80%. In this case, the subsidiary can continue to be consolidated in the parent company's financial reporting and is not taxed as a separate company (Brealey et al., 2020, p. 875). Unlike spin-off arrangements, carve-outs generate cash and create a public market value for the subsidiary (Schipper and Smith, 1986). According to Brealey et al. (2020, p. 875) they also differ from spin-offs in that equity carve-outs may not necessarily reassure investors who are concerned about a lack of focus, but they do enable the parent company to determine executive compensation based on performance (Vijh, 1999). Evidence provided by Nanda (1991) indicates that this structure combines the strategic advantages of a carve-out with the financial advantages of raising capital.

According to Cumming and Mallie (1999) a split-off is another form of partial separation in which the parent company's current shareholders are offered the opportunity to exchange their shares in the parent company for shares in the subsidiary. This transaction results in a reduction in the number of outstanding shares of the parent company and offers an alternative to the pro rata distribution used in spin-offs. Split-offs are typically used to achieve a clearer separation between the parent company and the subsidiary, often in situations where the company seeks to reduce ownership overlap between the two entities (Cumming and Mallie, 1999).

2.1.2 Motives for corporate restructuring

According to Bowman and Singh (1993), the motives for corporate restructuring are diverse and depend on both strategic and economic considerations. Companies usually restructure to improve operational efficiency, strengthen their financial position, and enhance their long-term competitiveness (Markides, 1995). The overall goal is to create shareholder value, although the specific reasons vary from transaction to transaction. These include, for example, the restructuring of a company's resources or business portfolio (Comment and Jarrel, 1995).

From a strategic perspective, restructuring allows companies to focus on their core business and divest operations that no longer align with their priorities. The results of a study by Rajan et al. (2000) suggest that diversified companies often suffer from inefficiency due to the dispersion of management attention and the misallocation of resources. Divesting non-core businesses helps companies sharpen their strategic focus and allocate resources more efficiently. These actions also improve management accountability by aligning the company's structure with its strategic priorities (Aron, 1991).

Financial reasons are the most common motives for corporate restructuring. Lang et al. (1995) suggest that companies may sell their assets to raise cash when they suffer from liquidity problems or declining profitability. However, the choice of restructuring type depends on company-specific factors and motives. Frank and Harden (2001) argue that companies suffering from a lack of cash benefit more from equity carve-outs, as an IPO provides immediate cash. Restructuring can also be an important part of bankruptcy proceedings, because it allows companies to sell assets, cut costs, and raise funds to support the restructuring. Another key motive is to improve the stability of a company's earnings. By selling business units with unstable or unpredictable earnings, companies can achieve more stable profitability and reduce their exposure to cyclical industries.

Thirdly, companies restructure to strengthen their balance sheets, for example by reducing debt. Asset sales and equity carve-outs can improve financial flexibility and reduce

financial risk (Frank & Harden, 2001). Based on Rajan et al's (2000) research, it can be concluded that restructuring may be used to unlock value within a diversified organization when management believes that separate entities could be valued more highly by the market than the combined firm. This hypothesis is based on the idea that investors can better assess the performance and potential of separate businesses when they are separated from each other.

From a governance perspective, restructuring can mitigate agency problems and enhance managerial accountability. Companies can increase transparency and lead management to greater market discipline by creating independent units or listing subsidiaries on public markets (Hollowell, 2010). According to the study, improved visibility can encourage more effective decision-making and better alignment of management incentives with shareholder interests.

Market and regulatory factors can also influence restructuring decisions. Companies may restructure in response to changing market conditions or investor sentiment. Corporate restructuring may initially cause disruptions due to changes in personnel and a temporary decline in efficiency. Although these beliefs are true, research by McKendrick et al. (2009) shows that these effects may be overestimated. Corporate restructurings can help parent companies adapt to their environment and thus reduce obsolescence resulting from a combination of organizational inertia and environmental drift. The authors state that although innovation may decline in the short term, in the long term, companies that have made divestitures perform better than those that have not. In addition, divestitures may be necessary for regulatory reasons. For example, competition authorities may intervene to prevent monopolistic behavior or to ensure fair market practices.

Finally, poor performance is often an operational reason for restructuring. If business units or subsidiaries consistently fail to meet financial or strategic expectations, companies may decide to divest or close them (Rajan et al., 2000). According to their paper, when divisions differ greatly in terms of size or investment opportunities, internal capital

markets tend to allocate funds from divisions with high opportunities to those with weaker ones. With corporate restructurings, companies can prevent value depreciation and focus resources on more productive areas. Such decisions may improve overall efficiency and strengthen the focus on results in the remaining business units.

2.2 Agency theory

Agency theory is one of the most influential theoretical frameworks in corporate finance. The theory was developed by Jensen and Meckling (1976), who define it as an arrangement in which one party delegates decision-making to another party. In companies, shareholders typically act as principals, while managers act as agents responsible for managing the company on their behalf. Agency problems arise when the managers' interests differ from the shareholders' interests.

According to the authors, agency theory is based on the assumption that individuals act rationally and seek to maximize their own utility. For this reason, managers may not always make decisions that maximize shareholder value. Instead, they may pursue goals that increase their own personal benefit, such as higher compensation. Jensen and Meckling suggest that these conflicts of interest result in agency costs that reduce the company’s total value.

Jensen and Meckling identify three components of agency costs. The first component consists of monitoring costs, which arise from the monitoring and oversight of management’s actions. The second component is bonding costs, which result from contracts and incentives designed to align the interests of management and shareholders. The third component is the residual loss, which refers to the remaining decline in shareholder welfare. This is due to management decisions that differ from value maximization despite oversight and incentive systems.

Agency theory is closely linked to the separation of ownership and control in companies. In large companies, shareholders do not participate in management, with the result that decision-making is transferred to professional managers. This separation can increase information asymmetry between managers and shareholders, as managers often have a better understanding of the company's operations. The theory also suggests that ownership structure affects the degree of agency problems. When managers hold a significant stake in the company, their interests align more closely with the interests of shareholders. In these situations, managers have stronger incentives to improve the company's performance and maximize shareholder value, as their personal wealth is directly tied to the company's success. On the contrary, a smaller ownership stake can weaken these incentives and increase the possibility that managers will prioritize their personal goals over the interests of shareholders.

From the perspective of agency theory, spin-off arrangements can reduce agency problems and improve organizational efficiency. First, separating business units can increase transparency and management accountability. As an independent unit, a spin-off company's performance can be measured more accurately, which can improve the efficiency of management decision-making.

Second, spin-offs can improve the alignment of management and shareholder incentives. Independent companies can often create compensation structures linked to the financial and operational performance of the spun-off unit. This can encourage managers to focus more strongly on value creation and operational efficiency. Furthermore, spin-offs can reduce the inefficiencies associated with diversified corporate structures. In large diversified corporations, managers may allocate resources inefficiently across different business units. This can weaken operational performance and reduce the company's value. Following a spin-off, both the parent company and the new independent company can benefit from a clearer strategic focus and more efficient allocation of resources.

In general, agency theory provides an important theoretical foundation for understanding the motives and effects of spin-offs. According to the theory, corporate restructuring can improve a company's performance by reducing conflicts of interest between managers and shareholders and lowering agency costs. Thus, agency theory is relevant for analyzing the impact of spin-offs on the operating performance of parent companies.

2.3 Signaling theory and information asymmetry

Signaling theory is an important theoretical framework in corporate finance from the perspective of spin-offs. The theory was originally developed by Spence (1973), and later Ross (1977) and other researchers applied it extensively to financial markets. Signaling theory focuses on situations where there is information asymmetry between different parties. Typically, a company's management has more information than outside investors. Because investors do not have as much information, uncertainty may arise regarding the company's quality and future performance.

Information asymmetry can undermine market efficiency, as it may be difficult for investors to accurately assess a company's quality and value. This problem is particularly relevant in diversified companies and large conglomerates, where it may be difficult for investors to assess the profitability of individual business segments. As a result, the market may undervalue the company because the true value of its business units is not fully apparent to outside investors. This phenomenon is commonly referred to as the conglomerate discount.

According to signaling theory, a company's actions can signal information to external stakeholders. Managers can use financial or strategic decisions to provide insider information about the company's future performance and quality. Investors interpret these actions and adjust their expectations regarding the company's value and future

performance. The theory assumes that signals are meaningful, which means that credible signals help reduce information asymmetry between management and investors.

In financial markets, signaling theory is applied to corporate decisions. These include changes in dividends, capital structure decisions, and corporate restructuring. Positive signals may strengthen investor confidence and increase firm value. In contrast, negative signals may increase uncertainty and weaken market perceptions. Signaling theory is relevant in the context of corporate restructuring and spin-off transactions. In the context of signaling theory, a spin-off can signal management's confidence in the future of both the parent company and the spun-off unit. Managers are generally assumed to have better information about a specific business segment. Thus, a spin-off may signal that management believes the market is undervaluing the company in its current corporate structure.

On the other hand, it can be difficult for investors to assess the value of an organization's individual business units. A spin-off can therefore serve as a signal that management is seeking to improve transparency and reveal the intrinsic value of the business units. By creating independent companies, investors can better evaluate each company separately. This can reduce information asymmetry and improve market value.

Furthermore, spin-offs can be a sign of stronger strategic focus. After the separation, both companies can focus on their core businesses and strategic goals. Investors may interpret this as a sign that management is trying to improve operational efficiency and long-term profitability. Thus, spin-off announcements are often well-received by the market, as investors view the transaction as a sign of future value creation and improved corporate performance.

Signaling theory also emphasizes the importance of management credibility. Investors must believe that the company's actions reflect accurate information about its future. Spin-offs are considered relatively credible signals because they involve high costs and

commitments. Companies are unlikely to pursue these types of transactions unless management expects the benefits of the spin-off to exceed the associated costs.

In general, signaling theory and information asymmetry theory provide important frameworks for understanding how corporate restructuring decisions affect investors' beliefs and market expectations. In the context of spin-off arrangements, these theories suggest that spin-off transactions can reduce information asymmetry and improve transparency. In addition, they can be used to provide positive information about future operational performance and corporate value. Thus, these theories offer meaningful perspectives for examining how spin-off arrangements affect operational performance and transparency surrounding spin-off transactions.

2.4 Corporate diversification and focusing

The next theoretical framework to be presented is the corporate focus hypothesis. According to Daley et al. (1997), companies can improve their performance and create shareholder value by focusing on their core business rather than operating in multiple business areas. Furthermore, according to the theory, focused firms are often more efficient and easier to manage than highly diversified firms. Previous literature has shown that diversification can increase organizational complexity and undermine operational efficiency. This is particularly evident when companies operate in unrelated industries.

Diversified companies may experience inefficiencies that undermine the overall firm performance. As the number of business segments increases, management decision-making and resource allocation can become more difficult. Managers may not have sufficient expertise in all business areas, which can undermine strategic and operational efficiency. Furthermore, diversified companies may allocate resources inefficiently across different divisions. As a result, profitable divisions may subsidize underperforming business units. These inefficiencies can negatively impact overall profitability and operational performance.

The corporate focus hypothesis suggests that firms may improve performance by reducing diversification and increasing strategic focus. In other words, management focuses on activities in which the company has the strongest expertise and competitive advantages. According to the hypothesis, divesting business units that are not part of the core business can improve strategic clarity and management focus. As a result, companies can achieve stronger operating performance and better profitability after strengthening their focus.

The corporate focus hypothesis is relevant in the context of spin-off companies. According to this hypothesis, spin-offs can create value by enabling companies to divest themselves of non-core activities and focus more directly on their core business. Daley et al. (1997) argue that divesting non-core business activities can enable managers to focus their attention on areas where they are best suited to manage.

Previous studies have also distinguished between spin-offs that increase focus and those that do not. Daley et al. (1997) define cross-industry spin-offs as transactions where the parent company and the spin-off unit operate in different two-digit SIC industry classifications. These transactions are considered to increase focus because they separate business operations that are not related to each other. In contrast, spin-offs within the same industry are considered to increase a company's focus less.

Empirical evidence generally supports the corporate focus hypothesis. Daley et al. (1997) found that cross-industry spin-off firms are associated with improvements in operating performance and positive market reactions. Spin-offs within the same industry are not associated with similar improvements. The study measures operating performance using the return on assets, which is defined as the ratio of operating profit to total assets. The results show that improvements in performance are primarily observed in the parent company following the spin-off. This supports the argument that companies benefit from a stronger focus and elimination of non-core activities.

The corporate focus hypothesis also suggests that focused companies can achieve more efficient resource allocation and better management accountability. Following a spin-off, both the parent company and the new independent unit can operate with clearer strategic objectives and more transparent organizational structures. This can strengthen management discipline and improve operational decision-making. In addition, focused companies can respond more effectively to changes in the competitive environment. In addition, consolidating a company's operations can reduce information asymmetry and improve transparency for investors. Diversified companies are often more difficult to evaluate, because it can be more difficult to assess the profitability and future potential of individual business segments. A spin-off allows for the separate analysis of the parent company and the spun-off unit, which can improve valuation efficiency and reduce the conglomerate discount.

Overall, the corporate focus hypothesis provides an important theoretical explanation for why firms undertake spin-off arrangements and how these transactions can improve operating performance. The hypothesis suggests that reducing diversification and increasing focus can improve management efficiency, resource allocation, and profitability. Thus, the corporate focus hypothesis is highly relevant when examining the impact of spin-off arrangements on the operational performance surrounding spin-off transactions.

3 Literature review and hypothesis development

This chapter reviews the existing literature on spin-offs, with a particular focus on operational performance. The academic literature on spin-offs has evolved greatly over the past few decades. Researchers have examined both the motives behind spin-offs and their effects on firm performance and shareholder value. Previous studies have focused particularly on the relationship between corporate restructuring and firm performance. Several theoretical perspectives have been used to explain why companies perform spin-off transactions and how these transactions may affect corporate performance. These include, for example, agency theory, signaling theory, and corporate focus theory. Furthermore, previous studies have found that spin-off arrangements can improve transparency, management focus, and resource allocation. This is particularly evident in companies operating in multiple business areas.

3.1 Existing literature

Daley et al. (1997) examine whether spin-offs create shareholder value by increasing corporate focus. More specifically, they compare cross-industry spin-offs with spin-offs within the same industry. In addition, the study examines whether the benefits result from improved business performance or synergy benefits resulting from reduced inefficient cross-subsidization. The authors examine abnormal stock returns around spin-off announcements. In addition, they analyze changes in operational performance using return on assets. The authors compare performance before and after the spin-off and adjust the results for industry, size, and the company's prior performance. The sample consists of 85 corporate spin-offs that took place between 1975 and 1991. Of the final sample, 60 are classified as cross-industry spin-offs and 25 as spin-offs within the same industry. The results of the study show that significant value creation occurs only in cross-industry spin-off arrangements. The average excess return for cross-industry spin-off arrangements during the reporting period is 4.3%. Intra-industry spin-off arrangements yield insignificant abnormal returns. Furthermore, the authors find a significant

improvement in operating performance following cross-industry spin-offs, whereas no similar improvements are observed in intra-industry cases.

A study by Chemmanur and Yan (2004) provides a theoretical explanation for why corporate spin-offs create value and improve a company's performance. The study focuses on corporate governance aspects and examines how spin-off arrangements increase managerial discipline and add value through acquisitions. The authors argue that in diversified firms, there may be divisions whose managers possess different levels of managerial ability. Spin-offs expose weaker divisions to increased market discipline and takeover pressure.

The authors construct a model that includes multiple divisions, current executives, potential rival executives, shareholders, and division managers. The results suggest that spin-offs create value by increasing the probability of takeover threats and improving managerial discipline. The study shows that spin-offs can improve performance by encouraging current managers to work harder or to hand over management to more capable leaders. The results suggest that spin-offs create value by increasing takeover pressure and strengthening managerial discipline. As a result, spin-offs are predicted to generate positive announcement effects and improve long-term operational performance. The model also predicts that larger subsidiaries and companies with more managerial inefficiency should experience stronger positive market reactions when announcing a spin-off. Furthermore, long-term value improvements are expected, particularly when spin-offs lead to successful acquisitions or stronger management discipline.

Johnson et al. (1996) examine whether corporate spin-offs improve investment incentives and operating performance. The study focuses on spin-offs where the parent company or the spin-off company has not merged with another company within three years of the transaction. The authors analyze abnormal stock returns surrounding spin-off announcements using a market-based event study. They examine changes in a company's operating performance and investment behavior before and after a spin-off. They

calculate financial ratios for the three-year period before and after the spin-off. The sample consists of 104 spin-off announcements from 1975 to 1988. The results show that spin-off arrangements generate significant shareholder value. The average abnormal announcement return for the entire sample is 3.96%. In addition, a subsample of companies that became independent after the spin-off showed a significant abnormal return of 2.06%. An accounting analysis shows that the combined firms' growth in real assets and cash flow margins improves significantly after the spin-off. The operating results and investment activities of the parent companies improve, while the growth in real assets of the spin-off companies is also significantly higher after the spin-off.

Choi et al. (2025) examine how managerial focus affects investment efficiency following corporate spin-offs. More specifically, the study investigates whether parent companies maintain efficient investment behavior following spin-off arrangements, depending on whether the management structures of the parent company and the spin-off companies remain separate or overlap. The study employs an empirical research model based on panel regression analysis and investment sensitivity models. The study controls for firm-fixed and year-fixed effects to account for unobserved heterogeneity and time trends. The final sample includes 106 spin-offs with overlapping management structures and 137 spin-offs with distinct management structures between 1985 and 2016. The key findings show that investment efficiency remains strong following spin-off arrangements when the parent company and the spin-off company have separate management structures. In contrast, for parent companies with overlapping management structures, investment sensitivity declines significantly following a spin-off. The results suggest that overlapping management structures weaken management focus and can lead to inefficient capital allocation. The study also shows that the decline in investment efficiency is stronger when the parent company and the spin-off firm operate in different industries or are geographically distant from one another.

Oliveira et al. (2023) examine the impact of parent companies on the establishment of corporate spin-offs and their post-spin-off performance. The study focuses on how

parent companies influence spin-off firms through motives, transferred resources, and post-spin-off performance. The results show that the two most important factors motivating the establishment of spin-off companies are the parent company's business portfolio consolidation and shareholder value maximization. The study also notes that spin-off companies face several significant challenges after their establishment, such as aggressive market competition and the efficient allocation of resources. Furthermore, regarding transferred resources, the results show that parent companies provide spin-off companies with both tangible and intangible resources. The authors conclude that these transferred resources strengthen the spin-off company's ability to succeed and compete after becoming independent. Finally, the study also shows that the performance of spin-off firms does not generally decline after separation from the parent company.

Desai and Jain (1999) examine whether increased corporate focus explains the positive stock market performance associated with spin-off arrangements. The study examines both the short-term announcement effects and the long-term stock market as well as operating performance following spin-off arrangements. In particular, the authors compare spin-off arrangements that increase corporate focus with those that do not. The study finds that operating performance improves in firms that have begun to focus their operations. Operating cash flow relative to assets improves significantly following spin-off arrangements, suggesting that such arrangements increase operational efficiency. The authors conclude that focusing on core business areas reduces inefficiency and improves management efficiency. In contrast, in spin-offs that do not increase corporate focus, there is no significant improvement in operating performance. The analysis suggests that these transactions are often driven by the divestiture of underperforming subsidiaries rather than strategic refocusing. Overall, the study finds that an increase in corporate focus is an important explanation for the value creation associated with corporate restructuring. Evidence shows that companies that focus on their core business achieve better long-term stock market performance and stronger operating results following a corporate restructuring.

Bhana's (2004) study examines whether corporate spin-offs improve operational performance and stock market performance among companies listed on the Johannesburg Stock Exchange. The study focuses on both parent companies and spin-off subsidiaries. In addition, the study examines whether related spin-off companies perform better than unrelated spin-off companies following divestiture. The study employs an empirical research model based on an analysis of accounting performance and an analysis of long-term stock market performance. Operating performance is assessed by comparing the firm's performance before and after the spin-off. The results strongly support the hypothesis that both parent companies and spun-off subsidiaries improve their performance following the spin-off. According to the study, the improvements are particularly significant for spun-off subsidiaries. The study finds statistically significant increases in return on assets, market-to-book ratio, and revenue growth. The study also finds that related spin-offs perform better than unrelated spin-offs following divestiture. The operating performance and shareholder value of related subsidiaries improve significantly. Bhana argues that related divisions suffer from greater agency and coordination costs in diversified firms. This means that they benefit more from turning into independent entities, as this makes their managerial accountability and strategic focus clearer.

3.2 Hypothesis development

Previous research has found mixed results regarding the impact of spin-offs on a company's performance. Many studies find improvements in operational efficiency and profitability following spin-off arrangements. Other studies suggest that the effects may depend on firm-specific characteristics, industry similarity, managerial structures, and market conditions. For this reason, the operational implications of corporate spin-offs remain an important topic in the research literature on corporate restructuring.

One of the most common theories behind corporate spin-offs is agency theory. According to this theory, agency conflicts may arise between management and shareholders in diversified companies. Management may seek to expand, engage in excessive

diversification, or make inefficient investments. These actions may increase the size of the company without necessarily maximizing shareholder value. In diversified organizations, management oversight can become more difficult, and resource allocation can become less efficient, which can weaken operating performance. On the other hand, the corporate focus hypothesis argues that companies can benefit by focusing on their core business rather than maintaining broadly diversified structures. This allows a company to improve management efficiency, resource allocation, and operational decision-making.

Previous empirical studies provide support for these arguments. Daley et al. (1997) find that operational performance improves significantly following cross-industry spin-offs, suggesting that increased corporate focus may enhance efficiency. Similarly, Johnson et al. (1996) report improvements in firms' operating performance and investment behavior following spin-off transactions. Desai and Jain (1999) also show that firms' operating performance improves when they increase their focus through spin-off transactions. In addition, Bhana (2004) finds significant improvements in return on assets and revenue growth following spin-off transactions. Several studies also emphasize the importance of managerial discipline and strategic focus in explaining the improvement in performance following spin-off transactions. Chemmanur and Yan (2004) argue that spin-off arrangements can improve managerial discipline by exposing weaker divisions to greater market pressure and the takeover threat. Choi et al. (2025), on the other hand, suggest that management focus plays a key role in maintaining investment efficiency following spin-off transactions.

Although previous literature often highlights the positive effects of spin-off transactions, the empirical evidence remains mixed. Some studies suggest that the business benefits of spin-off arrangements may only become apparent over time, while others indicate that restructuring costs and organizational changes may offset any potential efficiency gains. Moreover, the majority of the existing literature has focused primarily on stock

market reactions to spin-off announcements, while less attention has been paid to operational performance, particularly in the context of Nordic markets.

Therefore, this study complements the existing literature by examining whether spin-off transactions improve the operational performance of Nordic listed companies, using panel regression analysis and accounting-based performance measures. Based on the theoretical framework and existing literature, the first hypothesis is formulated as follows:

H1: Firms experience improved operational performance following a spin-off transaction.

In addition to spin-off effects, a company's capital structure can also affect its operating results. According to previous research, high debt levels can increase financial risk and financing costs, which can reduce profitability. Companies with high levels of debt may face greater pressure to meet their financial obligations, which can limit their ability to invest or develop their operations. Excessive debt can reduce a company's financial flexibility and increase the likelihood of financial difficulties. Consequently, firms with higher debt levels may suffer from weaker operational performance compared to firms with lower debt levels. Previous empirical literature has often shown a negative relationship between leverage and profitability metrics, such as ROA. Based on these arguments, the second hypothesis is stated as follows:

H2: Higher leverage is negatively associated with operational performance.

Firm size can also affect its operational performance. Larger companies can benefit from economies of scale and stronger market positions. In addition, they can operate more efficiently and have easier access to financial and managerial resources. On the other hand, larger companies may also have more diversified sources of revenue and a stronger bargaining position, which can contribute to improved profitability and business

stability. Previous literature has often found a positive relationship between company size and profitability metrics. Larger firms may also be better prepared to manage restructuring processes, such as spin-offs, as they often have stronger financial capacity and resources to effectively implement strategic changes. Therefore, the third hypothesis is formulated as follows:

H3: Larger firms exhibit stronger operational performance.

4 Data and methodology

This chapter presents the data and methodology used in the study. First, the sample selection process and data collection methods are discussed. Next, the variables used in the study are presented and defined. Finally, the empirical methods and regression models applied in the analysis are presented.

4.1 Data and variables

The data used in this study were collected from the Refinitiv Workspace database and include publicly listed companies in the Nordic countries, such as Finland, Sweden, Norway, and Denmark. The sample includes spin-off transactions completed between 2004 and 2022. Financial data are collected for the period 2002–2024 in order to examine firm performance before and after the transaction. A relatively long period was chosen for the study to maximize data availability. It also allows for an analysis of operating performance both before and after the spin-off. In this way, operational performance can be examined under various market conditions and economic cycles.

The sample originally included 143 spin-off transactions identified in the Refinitiv database. However, the sample was refined by removing duplicate observations as well as transactions that did not meet the characteristics of spin-off transactions. Companies with insufficient financial data were also excluded from the sample. To ensure the reliability of the study, the spin-offs were manually verified using the companies' investor relations websites, annual reports, and financial news. Spin-offs that could not be reliably verified were excluded from the final sample. The final sample consisted of 113 spin-offs, which are presented by country and year in Table 1.

Table 1. Spin-off transactions by country and year

Year	Spin-off transactions	Finland	Sweden	Denmark	Norway
2004	9	3	4	1	1
2005	7	2	4	0	1
2006	8	0	6	0	2
2007	13	0	6	0	7
2008	5	1	2	0	2
2009	0	0	0	0	0
2010	4	0	4	0	0
2011	7	1	2	2	2
2012	4	0	4	0	0
2013	7	2	3	0	2
2014	4	0	2	0	2
2015	6	2	3	0	1
2016	10	0	6	2	2
2017	5	0	4	0	1
2018	5	0	3	1	1
2019	3	1	1	0	1
2020	6	0	4	0	2
2021	4	0	3	0	1
2022	6	2	3	0	1
Total	113	14	64	6	29

Table 1 shows that Swedish companies accounted for 64 transactions, which corresponds to more than half of the total sample. During the period examined, there were 29 Norwegian spin-offs, while Finland and Denmark accounted for 14 and 6 transactions, respectively. The results show that spin-off activity in the Nordic countries has varied considerably from year to year. The highest number of transactions was recorded in 2007, when 13 spin-offs were executed. In contrast, no spin-off transactions were observed in 2009, which is largely explained by the financial crisis. This trend may indicate that spin-off activity is influenced by general economic conditions and market sentiment. During times of economic uncertainty, companies may postpone restructuring due to weakened investor confidence and less favorable market valuations. The distribution of spin-off activity also appears to be unequal between countries. Sweden has traditionally had a

more active M&A environment and a larger number of publicly listed industrial companies, which may contribute to the higher frequency of spin-off transactions. Overall, the table shows that spin-off transactions occur in various market environments, even though their number appears to fluctuate over time depending on the general economic situation.

This study uses return on assets as the dependent variable, calculated by dividing operating profit (EBIT) by total assets. ROA is an accounting-based profitability measure commonly used in finance research and has been widely applied in studies examining operating performance following corporate restructuring (Daley et al., 1997). Higher ROA values indicate stronger operational performance, while lower values signal weaker efficiency. According to Heikinmatti et al. (2017, p. 67), a company's efficiency is considered good when ROA exceeds 10%. When comparing different industries and markets, it is important to remember that ROA values may vary due to industry-specific and market-specific characteristics. Equation 1 shows the ROA formula used in the study.

$$ROA = \frac{EBIT}{Total\ assets} \tag{1}$$

In addition to ROA, the study uses several independent and control variables. A post-spin-off dummy variable (POST) is used to examine whether companies' operational performance changes after a spin-off transaction. The variable takes a value of one in the years following the spin-off and zero otherwise, following the approach applied in studies examining post-restructuring performance (Johnson et al., 1996). Leverage is included as a control variable and is measured as the ratio of total debt to total assets, as shown in Equation 2. Higher leverage may negatively affect operational performance because of increased financing costs and financial risk.

$$Leverage = \frac{Total\ debt}{Total\ assets} \tag{2}$$

Finally, firm size is also included as a control variable and is measured as the natural logarithm of total assets. Larger firms may benefit from economies of scale, stronger market positions, and more efficient resource allocation (Choi et al., 2025).

$$Size = \ln(Total\ assets) \tag{3}$$

To examine the impact of spin-off transactions on operational performance in more detail, the study also uses dummy variables for the comparison year. These variables allow for an analysis of operational performance before, during, and after the spin-off event in comparison to the transaction year.

4.2 Empirical methodology

This study examines whether spin-off arrangements lead to changes in the operational performance of Nordic listed companies. To analyze these effects, the study uses panel data regression analysis. Panel data combines both cross-sectional and time-series dimensions, which allows for the analysis of multiple companies over several years. This approach is particularly useful for this study, because it allows for the analysis of changes in firms' performance before and after the spin-off arrangement.

The empirical analysis is conducted using fixed-effects panel regressions that incorporate both firm-specific and year-specific fixed effects. A similar empirical approach is applied by Choi et al. (2025), who examine post-spin-off outcomes using panel regression models with firm-specific and time-specific controls. The fixed-effects method is commonly used in corporate finance research because it makes it possible to account for differences between firms that are not easily observable. Different firms may have characteristics that remain relatively constant over time. These may include, for example, organizational structure, corporate culture, or industry-specific characteristics. Firm-specific fixed effects capture these characteristics that remain constant over time and reduce the risk of results being biased due to omitted variables.

In addition to firm fixed effects, the regression models also include year fixed effects. Year-specific fixed effects account for trends affecting the whole market that may affect firms simultaneously, such as economic cycles and financial crises. The use of year-specific fixed effects improves the reliability of regression estimates by separating the effects of spin-offs from general market trends. Since the sample period covers multiple economic environments, including the global financial crisis and the COVID-19 pandemic, controlling for year-specific effects is particularly important in this study.

The baseline regression model used in the analysis is presented as follows:

$$ROA_{it} = \alpha + \beta_1 POST_{it} + \beta_2 LEVERAGE_{it} + \beta_3 SIZE_{it} + \mu_i + \lambda_t + \epsilon_{it}, \qquad (4)$$

Where,

μ_i represents firm fixed effects

λ_t represents year fixed effects

ϵ_{it} is the error term

The coefficient of the POST variable measures whether there are changes in a company's operating performance after a spin-off transaction. In addition, the study uses leverage and firm size as control variables to account for differences in companies' financial structures and sizes. The study also employs event-time analysis, which uses relative-year dummy variables. This allows for a more detailed analysis of changes in operational performance around spin-off transactions. This approach allows for an analysis of operational performance before, during, and after the spin-off transaction relative to the year of the event. The year prior to the spin-off transaction is used as the reference category in the analysis. The use of relative year dummy variables provides additional information on whether potential performance effects occur gradually over time or are temporary.

The empirical analysis is conducted using EViews statistical software. The regression models are estimated using the panel least squares with fixed effects specifications. In addition, prior to the regression analysis, descriptive statistics and correlation analysis are performed to examine the characteristics of the sample and the relationships between the most important variables. Finally, observations with extremely high or low ROA values were removed from the final sample to reduce the impact of outliers on the regression estimates. Removing extreme observations improves the reliability and robustness of the empirical analysis, because it limits the impact of abnormal firm-year observations and potential data errors.

5 Empirical findings

This chapter presents the empirical results of the study. First, descriptive statistics and correlation analysis are presented. This provides an overview of the characteristics of the firms in the sample and the relationships between the key variables. Second, the most important regression results are discussed to determine whether operating performance changes as a result of spin-off transactions. Finally, an event-time analysis is conducted to examine in more detail the development of operating performance before and after the spin-off event.

The purpose of this empirical analysis is to determine whether Nordic companies experience significant changes in their operating performance following spin-off arrangements. In addition, the analysis aims to determine whether any effects on performance emerge gradually over time.

5.1 Descriptive statistics

Table 2 presents the descriptive statistics of the main variables used in the empirical analysis. It shows the mean, median, standard deviation, minimum, and maximum values for the dependent and control variables. The descriptive statistics are based on 565 firm-year observations collected from 113 Nordic companies included in the final sample.

Table 2. Descriptive statistics

	ROA	Leverage	Size
Mean	0.042669	0.245462	15.046480
median	0.058344	0.216705	15.069322
Std.dev	0.140351	0.194529	2.575221
Min	-0.802712	0.001335	8.277666
Max	0.346749	0.738850	20.030571

The table shows that the mean ROA is 0.043. This indicates that the companies in the sample generated an average return on assets of approximately 4.3 % during the period under review. The median ROA, on the other hand, is slightly higher at 0.058. This suggests that the distribution of ROA is negatively skewed and that a small number of companies reported particularly weak operating results. The standard deviation of ROA is 0.140, indicating that there is moderate variation in the operational performance of the companies in the sample.

The lowest ROA value is -0.803, indicating that some companies incurred significant operating losses during the period under review. In contrast, the highest ROA value is 0.347, suggesting that there is considerable variation in the companies' profitability. These findings highlight the heterogeneity of the sample and indicate that the companies' ability to yield returns on their assets varies significantly.

Second, Table 2 shows that the average debt ratio is 0.245. This means that, on average, debt accounts for approximately 24.5 % of total assets. The median debt ratio is 0.217, which is slightly lower than the average. This suggests that a small number of companies have relatively high levels of debt. Overall, the results indicate that the leverage of the companies in the sample is at a reasonable level.

The average size of firms, measured as the natural logarithm of total assets, is 15.046, while the median value is 15.069. The relatively small difference between the mean and the median suggests that firm size is distributed quite evenly across the sample. However, the standard deviation of 2.575 and the wide range between the minimum and maximum values indicate considerable variation in company size. This is to be expected, as the sample includes companies operating in different industries and across the Nordic countries.

In general, the descriptive statistics indicate that there is variation in the sample in terms of both firms' performance and characteristics. Such variation is desirable in panel regression analysis, because it makes it possible to examine differences between firms and over time in operational results. The relationships between variables are examined in more detail using the correlation analysis presented in the following section.

5.2 Correlation analysis

Table 3 presents the Pearson correlation coefficients between the variables used in the empirical analysis. The purpose of the correlation analysis is to examine the relationships between the variables and identify any potential multicollinearity issues before performing the regression analysis.

Table 3. Correlation matrix

Variable	1	2	3
ROA	1		
Leverage	-0.029328	1	
Size	-0.217741	-0.185277	1

Table 3 presents the Pearson correlation coefficients between the dependent variable and the independent variables used in the empirical analysis, which are debt leverage and firm size. Correlation coefficients describe the direction and strength of the linear relationship between variables, and their values range from –1 to 1. Positive values indicate that the variables change in the same direction, while negative values suggest an inverse relationship. Coefficients close to zero indicate a weaker linear relationship, while larger absolute values indicate a stronger relationship. The diagonal entries are equal to one, because each variable is perfectly correlated with itself.

The results show that the correlations between the independent variables are relatively weak. The correlation between debt and firm size is -0.185, indicating a weak negative relationship between these two variables. Similarly, ROA has a weak negative correlation with both leverage (-0.029) and firm size (-0.218).

The strongest absolute correlation is observed between ROA and firm size. However, the magnitude of the correlation remains low and well below generally accepted thresholds for multicollinearity. Overall, the results suggest that multicollinearity is unlikely to affect the reliability of the regression estimates. The low correlation coefficients also indicate that the independent variables capture different dimensions of firm characteristics. Thus, the variables can be included simultaneously in the regression models without causing significant statistical concerns.

5.3 Main regression analysis

Table 4 presents the main regression results of the study. The analysis is conducted using a fixed-effects panel regression model that includes both firm-specific and year-specific fixed effects. The objective is to determine whether spin-offs are associated with changes in firms' operating performance, as measured by the return on assets. Firm leverage and size have been included as control variables to account for differences in financial structure and firm characteristics.

Table 4. Main regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.535587	0.392615	-6.458197	0.0000
POST	-0.011052	0.027162	-0.406882	0.6844
LEVERAGE	-0.031319	0.002462	-12.72144	0.0000
SIZE	0.171385	0.026098	6.567031	0.0000

Effects Specification
Cross-section fixed (dummy variables) Period fixed (dummy variables)

R-squared	0.767823	Mean dependent var	0.007586
Adjusted R-squared	0.688928	S.D. dependent var	0.336189
S.E. of regression	0.187506	Akaike info criterion	-0.294111
Sum squared resid	10.86392	Schwarz criterion	0.734799
Log likelihood	167.0280	Hannan-Quinn criter.	0.112756
F-statistic	9.732195	Durbin-Watson stat	2.636141
Prob(F-statistic)	0.000000		

Table 4 presents the coefficient estimates, standard deviations, t-statistics, and p-values obtained from the fixed-effects panel regression model. The coefficient estimates describe the direction and magnitude of the relationship between each independent variable and firms' operating performance measured by return on assets. Statistical significance is assessed based on the reported p-value, while the model's statistical information provides insight into the regression model's overall explanatory power and fit. The analysis includes both firm-fixed and year-fixed effects to control for unobserved heterogeneity across firms and common time effects.

The regression results show that the coefficient for the POST variable is negative (-0.011) but statistically insignificant (p = 0.684). This suggests that, on average, there is no statistically significant difference in companies' operating performance following a spin-off transaction. Thus, the results do not support the first hypothesis, which posits that operating performance improves following a spin-off transaction.

Although the estimated coefficient is negative, its magnitude is relatively small and economically insignificant. This means that the average change in profitability following a spin-off is close to zero, once company-specific and time-related factors are taken into account. In other words, the results suggest that spin-off arrangements do not automatically lead to improved operational performance.

One possible explanation is that it may take time for the benefits of spin-offs to materialize. Although the rationale for spin-offs is often based on improved management focus and reduced agency costs, these benefits may emerge gradually rather than immediately following the restructuring. In addition, restructuring processes are often associated with transition costs and temporary inefficiencies, which may cancel out any short-term benefits.

In terms of control variables, leverage has a statistically significant negative relationship with ROA (coefficient = -0.031, $p < 0.001$). This result suggests that firms with higher debt levels generally generate lower returns on assets. The result is consistent with the view that increased debt can lead to higher financing costs and reduced operational flexibility, which ultimately weakens profitability.

On the other hand, firm size has a positive and statistically significant relationship with ROA (coefficient = 0.171, $p < 0.001$). This suggests that larger firms tend to exhibit stronger operational performance than smaller firms. One possible explanation is that larger firms may benefit from economies of scale and stronger market positions. In addition, they may allocate their resources more efficiently.

Overall, the results suggest that the operating results of Nordic companies do not improve significantly immediately following spin-off transactions. However, the significant effects of leverage and firm size indicate that firm-specific characteristics remain important determinants of profitability.

5.4 Event-time analysis

To determine whether changes in operating performance occur progressively surrounding the spin-off transaction or immediately after the event, an event-time analysis is conducted. Unlike the main regression model, which describes the average effect after the spin-off, in this model the observations are divided into different time periods relative to the transaction year. This enables a more detailed review of whether changes in results appear before or after the spin-off. Table 5 presents the results of the event-time regression model. The omitted period serves as the reference category against which the reported coefficients are interpreted.

Table 5. Event-time regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.699801	0.396045	-6.816909	0.0000
RY_M2	0.093934	0.031766	2.957057	0.0033
RY_0	0.031161	0.031152	1.000302	0.3180
RY_P1	-0.000209	0.035153	-0.005938	0.9953
RY_P2	0.021220	0.040326	0.526217	0.5991
LEVERAGE	-0.030470	0.002461	-12.38009	0.0000
SIZE	0.179915	0.026175	6.873608	0.0000

Effects Specification
Cross-section fixed (dummy variables) Period fixed (dummy variables)

R-squared	0.775098	Mean dependent var	0.007586
Adjusted R-squared	0.695721	S.D. dependent var	0.336189
S.E. of regression	0.185447	Akaike info criterion	-0.311489
Sum squared resid	10.52351	Schwarz criterion	0.746541
Log likelihood	173.6339	Hannan-Quinn criter.	0.106894
F-statistic	9.764742	Durbin-Watson stat	2.615216
Prob(F-statistic)	0.000000		

Table 5 reports the results of the event-time fixed-effects regression analysis examining changes in firms' operational performance relative to the spin-off transaction year. The relative-year dummy variables capture performance in the periods prior to and after the event and allow for the identification of effects preceding and following the spin-off transaction. The reported coefficients indicate the estimated difference in return on assets relative to the excluded reference period, while standard errors, t-statistics, and p-values are used to assess statistical significance. As in the main regression model, firm-fixed and year-fixed effects are included to control for unobserved firm characteristics and common time-related factors.

The results show that only the coefficient for the two-year period preceding the spin-off (RY_M2) is statistically significant. The coefficient is positive (0.094) and significant at the one percent significance level ($p = 0.003$). This suggests that the companies' operating results were already better than during the comparison period prior to the spin-off.
In contrast, there are no statistically significant changes in operating results during or after the transaction year. The coefficient for the spin-off year itself (RY_0) is positive but not significant ($p = 0.318$), while both post-spin-off periods remain insignificant. The coefficient for the year following the transaction (RY_P1) is effectively zero ($p = 0.995$), and the coefficient for the two years following the spin-off (RY_P2) is also statistically insignificant ($p = 0.599$).

These results suggest that operating performance does not improve following a spin-off transaction. Instead, it appears that firms already have relatively strong operating performance prior to implementing the restructuring. One possible interpretation is that firms conduct spin-off transactions based on their strong market position rather than using them as a way to improve weak performance.

The results thus provide further evidence against Hypothesis 1 and suggest that operational performance does not improve gradually following the transaction. It should also be noted that performance is examined only two years after the transaction, and the effects of the restructuring may take longer to materialize. However, the results are partly consistent with the arguments regarding restructuring presented in the prior literature, suggesting that spin-off arrangements may be implemented when firms are already performing well.

Overall, the event-time analysis confirms the conclusions of the main regression model and shows that Nordic spin-off arrangements do not appear to lead to systematic improvements in operating results following the arrangement.

6 Discussion

The purpose of this study was to investigate whether corporate spin-off transactions improve the operating performance of Nordic parent companies. Operating performance was measured using the return on assets, and the analysis was conducted using fixed-effects panel regression models that accounted for debt and firm size. The main results of the regression analysis indicate that spin-off transactions do not lead to statistically significant improvements in operating results. In other words, the coefficient of the post-spin-off indicator remains insignificant after controlling for firm-specific and year-specific effects. These results suggest that spin-off transactions alone do not necessarily improve a company's operational efficiency or profitability.

The findings of this study challenge the claim that corporate restructuring leads to efficiency gains through more focused management and simplified organizational structures. In existing literature, spin-offs are often associated with a stronger strategic focus and lower agency costs. The results of this study suggest that these benefits may not materialize in the short term or may be more limited than is often assumed. One possible explanation is that executing spin-offs involves significant implementation costs and organizational changes. Separating business units may improve strategic clarity in the long term, but the transition process itself may temporarily reduce operational efficiency. Companies often need to reform management structures, reallocate resources, and adapt governance mechanisms after a spin-off. These measures may take several years to implement.

Event-time analysis provides additional insight into the timing of performance effects. Interestingly, operational performance appears to be stronger prior to the completion of a spin-off transaction, whereas no statistically significant improvements are observed after the transaction. This suggests that firms do not necessarily carry out spin-off transactions in response to weak operational performance. Instead, firms may decide to undertake spin-off transactions while their performance is relatively strong and the business environment is favorable. Another interpretation relates to managerial timing.

Firms with a stronger operating position may have greater financial flexibility and lower implementation risk. This may simplify the implementation of restructuring decisions. Consequently, spin-off arrangements may reflect proactive strategic decisions rather than corrective measures aimed at improving profitability.

The control variables also provide significant insights. The negative relationship between leverage and ROA suggests that higher debt levels are associated with weaker operating performance. This result supports the traditional economic view that increased financial obligations reduce flexibility and may reduce profitability. In contrast, firm size has a positive relationship with ROA, indicating that large firms benefit from economies of scale and more efficient allocation of resources. Overall, the results suggest that a firm's characteristics are more significant determinants of operational performance than the spin-off transaction itself.

The results of this study differ partly from previous studies that have examined corporate spin-offs and operating performance. Several previous studies have reported positive effects on performance following spin-off arrangements. For example, Johnson et al. (1996) find that both operational performance and investment efficiency improved following spin-off arrangements. Similarly, Bhana (2004) reports statistically significant improvements in profitability and business performance following corporate restructuring. Desai and Jain (1999) also conclude that companies that focused more strongly on their core business achieved better long-term results. The results of this study do not provide similar evidence for Nordic firms. Although the estimated post-spin-off effect is negative, the coefficient is statistically insignificant. Therefore, the results do not provide evidence that spin-off arrangements systematically improve operational performance.

However, the findings are consistent with more recent research literature, which highlights that the results of spin-offs depend on the implementation characteristics and management decisions. Choi et al. (2025) argue that the performance of spin-off companies is strongly influenced by management priorities and governance structures.

Similarly, Oliveira et al. (2023) suggest that a post-spin-off performance depends on resource allocation and activities following the spin-off rather than the restructuring itself. Differences between this study and the prior literature may also result from methodological choices. Previous studies often examine stock market reactions or broader performance indicators, whereas this study focuses on accounting-based operating performance. Furthermore, this study examines Nordic listed companies operating in different environments compared to existing samples. Overall, the results suggest that the effects of spin-offs may be more dependent on context than previous literature suggests.

7 Conclusion

The purpose of this study was to determine whether corporate spin-offs improve the operating performance of parent companies in the Nordic countries. More specifically, the study examined whether changes occur in firms' operating performance following spin-off transactions and whether these effects emerge gradually over time. Operating performance was measured using return on assets, and the empirical analysis was conducted using panel regression models that incorporated firm-fixed and year-fixed effects. The empirical analysis was based on a sample of 113 spin-off transactions conducted between 2004 and 2022 in Finland, Sweden, Norway, and Denmark. Financial data was collected from the Refinitiv Workspace database and complemented by manual verification using company reports and public sources to improve data reliability.

The results of the study provide no evidence that spin-off arrangements lead to statistically significant improvements in operating performance. The main regression analysis shows that the post-spin-off indicator variable remains statistically insignificant when leverage and firm size are taken into account. This suggests that, on average, spin-off arrangements do not systematically improve the operational performance of Nordic parent companies as measured by ROA. Event-time analysis provides additional insight into the timing of performance changes following a spin-off. The results indicate that operating performance seems to be relatively strong even before the spin-off transaction, whereas no significant improvements are observed during or after the spin-off year. These results suggest that companies may engage in spin-offs during periods of strong operating performance rather than as a corrective measure aimed at improving weak performance.

The results therefore do not support the hypothesis that spin-off arrangements improve operational performance following the separation. Furthermore, the results do not indicate that improvements in performance occur gradually over a two-year period following the restructuring. Instead, the results suggest that firm-specific characteristics remain a more significant factor in explaining operating performance than the restructuring itself.

Among the control variables, leverage was found to have a significant negative association with operating performance, whereas firm size had a positive effect on profitability. These findings suggest that capital structure and firm size remain important determinants of firm performance even during organizational restructuring.

From a theoretical perspective, this study contributes to the literature on corporate spin-offs by providing evidence from the Nordic market and focusing on accounting-based operational performance rather than stock market reactions. Although previous literature has often reported positive outcomes following spin-off transactions, the results of this study suggest that such effects are not necessarily universal. They may depend on the market environment, the characteristics of the implementation, and the measurement methods. From a practical perspective, the results suggest that managers and investors should not assume that spin-off transactions automatically improve operational efficiency. Although spin-offs can provide benefits, for example, through greater management focus and improved resource allocation, these benefits do not necessarily translate into measurable improvements in operational performance in the short term.

Even though this study contributes to the literature on corporate spin-offs using data from Nordic listed companies, several limitations should be considered when interpreting the results. First, operational performance is measured by return on assets. Although ROA is one of the most commonly used accounting-based metrics in the literature on corporate performance, relying on a single indicator may limit the ability to capture a firm's performance. It focuses on profitability relative to total assets and reflects operational efficiency, but it does not fully capture certain aspects of the firm's performance. These include, for example, stock market expectations and the creation of shareholder value. Previous studies examining spin-off transactions have often combined accounting-based indicators with market-based measures, such as abnormal stock returns. Therefore, in future studies, the analysis could be expanded by utilizing other accounting metrics, such as return on equity (ROE) and operating profit margin, together with market-based measures.

Second, the study focuses only on publicly traded companies operating in the Nordic countries. While this approach helps to understand the performance of spin-off firms in similar environments, it also limits the applicability of the results. The Nordic markets are characterized by developed financial systems, concentrated ownership structures, and strong governance practices. As a result, the observed results may differ from those found in larger or institutionally different markets, such as the United States or emerging markets. Future studies could expand the geographical coverage and investigate whether institutional differences affect the outcomes of spin-offs.

Third, the size of the final sample is still limited, although it is comparable with the existing literature. The original sample was reduced by removing duplicate observations, transactions that did not meet the spin-off criteria, and observations with incomplete financial data. These measures improved data quality and reduced the impact of outliers but also reduced the number of available observations. This may affect statistical significance. Consequently, some economically significant relationships may go unobserved due to the limited sample size. In addition, this study examines the average impact of spin-off transactions across all firms and industries. However, the effects of spin-off transactions on operational performance may vary depending on transaction-specific characteristics. According to previous research, industry similarity, subsidiary size, and transaction motives, for example, can affect results. Due to data limitations, these characteristics have not been included in the empirical models. Future research could investigate whether certain types of spin-offs have a stronger impact on performance than others.

Furthermore, the empirical analysis is based on panel regression models with fixed effects. Although it accounts for unobserved firm-specific characteristics and time-varying effects, it does not completely eliminate all potential sources of endogeneity. Firms that decide to pursue spin-offs may systematically differ from firms that do not undertake this type of restructuring. Thus, it cannot be completely ruled out that unobserved

strategic or management-related factors influence both the decision to spin off and subsequent operating performance. Future studies could consider more advanced identification methods. These could include difference-in-differences methods, matched samples, or instrumental variable techniques to strengthen the interpretation of causal relationships.

Finally, it is worth noting that event-time analysis only captures relatively short-term performance trends. Although the chosen time frame allows for an examination of the immediate consequences of a transaction, the full benefits of a restructuring may not become apparent until the longer term. Spin-off transactions often require major changes within the parent company before measurable improvements in performance begin to appear. Therefore, future studies could extend the observation period and examine the longer-term operating performance of companies following spin-off transactions. Despite these limitations, the study provides valuable evidence on the relationship between corporate spin-offs and the operating results of Nordic companies. It also provides a foundation for future research examining the long-term consequences of corporate restructuring.

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