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**Exploring the Financial Implications of Mergers
and Acquisitions within the Nordic Energy
Sector: An In-depth Analysis of Profitability
Dynamics**

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ABSTRACT :

This research delves into the financial implications of mergers and acquisitions (M&A) within the Nordic Energy Sector, undertaking a comprehensive analysis of the profitability dynamics associated with these strategic transactions. With an emphasis on understanding how M&A activities influence the financial performance of companies in the energy sector, this study employs rigorous methodologies to explore key indicators of profitability. By examining historical M&A cases, financial statements and an analysis of share prices of the mergers and takeovers, the research aims to uncover patterns, trends, and critical success factors that shape the economic landscape of the Nordic Energy Sector post-M&A. The findings from this investigation are poised to offer valuable insights for industry stakeholders, policymakers, and investors, contributing to a nuanced understanding of the financial intricacies inherent in M&A transactions within the context of the dynamic Nordic energy market.

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1 Introduction

The term "Nordic region" typically refers to a geographical and cultural grouping of countries in Northern Europe. The Nordic countries include Denmark, Finland, Iceland, Norway, and Sweden. These nations share historical, cultural, and linguistic ties, and they collaborate closely on various economic, social, and political fronts. The Nordic region is known for its high standard of living, social welfare systems, and a strong commitment to environmental sustainability (Nordic cooperation, 2023). The Nordic countries, while maintaining their individual sovereignties, have a tradition of close collaboration, both regionally and internationally, on matters ranging from economic policies to social welfare initiatives (Nordic Council of Ministers, 2023). Collectively, these nations have forged a reputation for high living standards, robust social welfare systems, and a commitment to sustainable development and environmental conservation (Nordic Co-operation, 2022).

Strategic business operations involving the amalgamation of two or more companies are referred to as mergers and acquisitions. While acquisitions involve one firm buying another, leading to a change in control, mergers involve the uniting of equals (Ross, Westerfield, & Jordan, 2018). These 2 terms have different types of mergers and acquisitions to their name which includes horizontal, vertical and conglomerate mergers along with friendly, hostile and asset acquisitions. According to Cumming, Jindal, Kumar, & Pandey (2023), For corporations, mergers and acquisitions (M&As) have been a key instrument for growth, restructuring, and diversification. Several parties are involved, including regulators (governments, securities market regulators, antitrust watchdogs, etc.), consultants (investment bankers and attorneys), purchasers (acquirers), sellers (targets), and advisors. Additionally, these transactions may involve companies in the same industry (horizontal mergers), companies in unrelated industries (conglomerate mergers), and companies at different phases of the production process (vertical mergers). These occurrences are examples of economically significant transactions that have the capacity to significantly increase or decrease value. Therefore, scholars from a variety of fields, particularly finance and accounting, have been drawn to this topic.

In terms of context of this study, Nordic region has been chosen as I believe that most of the energy companies are from this region. As of 2023 till to-date, there have been 1,057 M&A transactions with a value of USD167.9 billion around the world. The Nordic countries consist of seven countries, which consists of Denmark, Sweden, Finland, Iceland, Faroe Islands, Greenland and Aland (Thompson Financial, 2019). In the recent decade we can witness how Mergers and Acquisitions (M&A) affect the firms' profitability of companies in the Nordic Energy industry. Both robust and failing economies depend on mergers and acquisitions, which are frequently the main method through which businesses can give returns to their owners and investors (Sherman, 2010).

Mergers and acquisitions (M&A) can have varying effects on the profitability of firms in the Nordic Energy industry, depending on various factors such as the strategic fit of the merged entities, synergies achieved, integration processes, market conditions, and regulatory environment. Firstly, Synergies and Cost Reductions: Creating synergies through mergers and acquisitions is a common goal, particularly when it comes to cutting costs through economies of size and scope. Synergies are frequently a major motivator for M&A activity in the energy industry, with the goal of enhancing profitability by maximizing operational efficiencies and cutting costs, according to a PricewaterhouseCoopers (PwC) analysis on M&A trends in the sector (PwC, 2021).

Secondly, Market Power and Competitive Advantage: Additionally, M&A can strengthen a company's competitive edge and market dominance, which boosts profitability. Businesses can boost their position in the market and increase profitability by combining market share or purchasing complementary resources. There is evidence that M&A activity in the energy sector can result in enhanced market power and improved financial performance, according to a Journal of Corporate Finance study (Andriosopoulos et al., 2013).

Thirdly, Financial Performance: M&A can, nevertheless, have a wide range of effects on financial performance. According to Deloitte research, while many M&A deals in the energy sector boost financial performance, others could not provide the anticipated gains because of integration difficulties, cultural differences, or an overestimation of synergies (Deloitte, 2019).

Fourth would be the Regulatory Environment: The regulatory framework is another important factor in deciding how M&A in the energy sector will affect profitability. The viability and results of M&A transactions can be impacted by regulatory clearances, compliance standards, and alterations in governmental regulations. According to a McKinsey & Company report, overcoming regulatory obstacles successfully is crucial to maximizing M&A value in the energy sector (McKinsey & Company, 2018).

Lastly, Integration Challenges: Achieving the anticipated advantages of mergers and acquisitions requires the effective integration of combined businesses. Ineffective integration processes can cause value destruction, disruptions, and inefficiencies. In order to maximize profitability in the energy sector, a report from Bain & Company highlights the significance of successful post-merger integration methods (Bain & Company, 2020).

The Nordic region, renowned for its innovation, sustainability initiatives, and a robust energy sector, provides a compelling backdrop for exploring the ways in which M&A activities have positively influenced businesses. By analyzing prominent cases in this context, we are able to identify the various advantages that companies get from strategic consolidation. One such exemplar is the merger between Statoil and Hydro in 2007, forming StatoilHydro (now Equinor), a leading energy company based in Norway. This merger facilitated the integration of complementary strengths in oil and gas exploration, production, and renewable energy initiatives. By combining resources and expertise, the merged entity not only achieved operational efficiencies but also strengthened its position in the global energy market (Equinor, 2007).

This research will examine in detail the impact of profitability on businesses in the Nordic energy sector because of mergers and acquisitions over the previous twenty years in the parts that follow. The study aims to clarify the many transactions that have occurred in this area and thus have an impact on the energy cluster's operational environment in the Nordic region.

1.1 Purpose of the study

The main goal of this research project is to carefully ascertain the effects of mergers and acquisitions on the financial performance of businesses located in the Nordic area, particularly in the energy sector. This study, which focuses on publications published after 2000, seeks to

carefully examine and determine the complex effects that mergers and acquisitions have had on the profitability dynamics of Nordic energy companies. Acknowledging the dearth of thorough evidence in this field, both in terms of numbers and qualitative data, this study aims to close current knowledge gaps. This study aims to add significant knowledge to the body of current literature by illuminating the complexities of the relationship between mergers and acquisitions and profitability in the Nordic energy sector.

The goal of the study is to gain a thorough understanding of how M&A activity affects the financial performance of businesses involved in the Nordic energy industry. This entails looking at a number of financial indicators, including shareholder value, ROI, profitability, and revenue growth (PricewaterhouseCoopers, 2021). It looks for the precise elements causing the M&A effects on financial performance that are seen. This could include things like the synergies that come from merger, shifts in the dynamics of the market, the regulatory landscape, and the strategic alignment of the merging firms (Andriosopoulos et al., 2013). The study intends to evaluate the strategic decision-making processes of corporations operating in the Nordic energy sector by studying the results of M&A transactions (Deloitte, 2019). This entails assessing the reasons for M&A operations, the standards applied in choosing targets, and the anticipated vs actual results (McKinsey & Company, 2018). In order to determine the relative effects on financial performance, the study may compare organizations that have and have not engaged in M&A transactions (Bain & Company, 2020). This comparison method aids in separating the impact of mergers and acquisitions from other elements affecting financial performance. It seeks to offer information that can be useful to investors, industry players, and governments. Investment decisions, industry strategies, and regulatory regulations in the Nordic energy sector can all benefit from an understanding of how M&A affects financial performance.

In the same manner, this study can be used to analyze the impact that mergers and acquisitions create on companies, especially for the energy companies in the Nordic region. With comprehensive analysis on the impacts of profitability on energy companies through mergers and acquisitions in the Nordic region, I would be able to prove significant relationships between these variables and use the findings to tackle the negative impacts that's created on energy

companies in any of the Nordic countries. Hence, this research proposal not only focuses on contributing to academic literature but also the practical context in emerging markets.

1.2 Motivation

There was limited previous empirical research conducted for the impact that mergers and acquisitions create on profitability especially in the energy companies that is located in the Nordic region. According to Jokela, J. (2018), the thesis that he conducted studies on many factors that affect European financial companies when mergers and acquisitions transactions occur. One of those factors analyzed is the impact of profitability on companies and a conclusion is derived that the shareholders of the companies do not benefit from the mergers and acquisitions which creates value.

The motivation for this study is further underscored by the evolving landscape of the Nordic energy sector, characterized by increasing globalization, technological advancements, and a growing emphasis on sustainability. The energy industry, a cornerstone of economic development, faces unique challenges and opportunities, necessitating a nuanced understanding of the impacts of mergers and acquisitions on profitability. As companies in the Nordic region strive to navigate this dynamic environment, the strategic decisions surrounding mergers and acquisitions become crucial. The study aims to illuminate how these strategic transactions influence the financial well-being of energy companies in the Nordic context, providing valuable insights for industry stakeholders, policymakers, and investors. In the Nordic economy, the energy sector is essential to GDP growth, creation of employment, and general prosperity. Evaluating the financial effects of mergers and acquisitions in this industry might reveal information about larger economic trends, potential investments, and regulatory obstacles. Additionally, with global trends shaping the energy transition and the region's commitment to renewable energy, an examination of mergers and acquisitions becomes imperative for evaluating the sector's resilience and adaptability in the face of evolving energy paradigms.

The ultimate objective of merger and acquisition (M&A) transactions is frequently to create value for stakeholders and shareholders. The study tries to determine the variables driving

value creation or destruction and determine whether value creation objectives are reached by assessing the financial performance outcomes of M&A deals. Risks associated with M&A deals include those related to integration, cultural misunderstandings, legal obstacles, and financial instability. Companies may foresee and reduce these risks by knowing how M&A affects financial performance; this strengthens their resilience and long-term sustainability. The implications of mergers and acquisitions (M&A) on the energy industry are of great concern to policymakers and regulatory bodies, considering the sector's strategic significance for national energy security, environmental sustainability, and economic growth. The study's conclusions can help develop regulatory frameworks, policy discussions, and competition laws that support consumer welfare and market efficiency.

1.3 Possible contribution

Conducting a research proposal based on the impact on profitability that mergers and acquisitions created on the energy companies in the Nordic region is a very interesting and broad topic as this area has limited evidence to prove the impacts on the Nordic countries. By investigating a specific context like the Nordic energy sector, the study contributes to academic literature on M&A and financial performance within a distinct regional and industry context. It adds to the body of knowledge by providing empirical evidence and insights that can be generalized or compared with studies from other regions or industries. In the same manner this study has the potential to be extremely beneficial in several ways. First, the study aims to provide a thorough understanding of the complex relationships between strategic transactions and the financial performance of companies in this specific industry context by exploring the understudied area of mergers and acquisitions within the Nordic energy sector. Furthermore, a temporal assessment is made possible by the empirical study of papers published in 2000, which captures changing trends and patterns in the impact of mergers and acquisitions over the previous 30 years.

Furthermore, the study's conclusions might provide industry practitioners with useful information to help them make strategic decisions about mergers and acquisitions. Moreover, given the current emphasis on sustainable energy practices worldwide, the study can clarify how these kinds of strategic transactions relate to and influence the sustainability objectives of

the Nordic energy industry. In the end, this research should contribute more than just to academic discourse; it might also influence industry practices, policy, and future energy economics and strategic management research projects.

Thereby explaining further academicians and students would greatly benefit from this research as this would be additional knowledge in order to have a broader view of the factors affecting the energy companies in the Nordic countries. Also, firms and employees based in this Nordic region could also make use out of this as it would benefit them in order to be prepare themselves when such a situation arises or else find solutions beforehand to the factors that are been highlighted which will impact the industries in order to mitigate the impact on the firms. Shareholders of companies would also benefit from this as this is quite advantageous as they would also know the effect of mergers and acquisitions beforehand so that they know how to act accordingly.

2 Literature Review

Acquisitions and mergers (M&A) are strategic actions in which two or more businesses combine their operations or one company buys another, resulting in a significant shift in control (Ross, Westerfield, & Jordan, 2018). Acquisitions occur when one company buys another, resulting in a change in ownership and control, whereas mergers involve the integration of two businesses to create a new entity (Gaughan, 2010). Through a variety of financial strategies, such as mergers, acquisitions, consolidations, tender offers, asset purchases, and management acquisitions, these transactions entail the consolidation of businesses (Sherman & Hart, 2006). M&A essentially pertains to transactions involving the transfer or consolidation of ownership of companies, other business entities, or their operational units (Bruner, 2004). In order to achieve synergies and improve competitive positioning, two or more companies are combined into a single entity using a variety of financial and operational strategies (Weston & Weaver, 2001).

Mergers and acquisitions (M&A) offer several advantages to companies engaging in these strategic transactions. Firstly, M&A can provide access to new markets, customers, and distribution channels, facilitating geographic expansion and market diversification (Gaughan,

2010). Additionally, the consolidation of resources and complementary capabilities through M&A can lead to economies of scale, driving operational efficiencies and cost savings (Ross, Westerfield, & Jordan, 2018). M&A transactions also enable companies to achieve synergies, combining strengths to create a more formidable and competitive entity in the market (Sherman & Hart, 2006). Furthermore, M&A can accelerate innovation and research and development efforts by bringing together the intellectual capital of merged entities, fostering a culture of collaboration and knowledge sharing (Bruner, 2004). Strategic M&A can enhance financial performance, contributing to increased profitability and shareholder value (Weston & Weaver, 2001).

Companies can increase their market presence both domestically and abroad through mergers and acquisitions. A company can obtain instant access to new consumer segments or geographic regions by acquiring another company. A study conducted by Campa and Hernando (2006), discovered a favorable correlation between M&A activity and growing market share as well as market penetration. Purchasing a different business frequently gives access to exclusive technology or intellectual property. This can be especially helpful in sectors of the economy where a competitive advantage depends on innovation. For example, Disney's 2006 acquisition of Pixar gave it access to state-of-the-art animation technology, which improved its performance in the entertainment sector (Tse, 2008).

By integrating resources and eliminating duplication, mergers and acquisitions can result in economies of scale. Streamlining operations, combining facilities, and negotiating better prices with suppliers can all lead to cost reductions. M&A deals frequently result in large cost synergies, which boost profitability, according to research by Andrade et al. (2001).

Organizations can decrease their dependence on a particular product or market by diversifying their revenue streams through M&A activity. Companies can diversify their risk and build a more well-rounded portfolio by purchasing companies in other markets or fields. For instance, Facebook's 2014 acquisition of WhatsApp enabled it to expand its revenue streams outside social media (Bughin et al., 2015).

A company's competitive positioning can be strengthened by mergers and acquisitions, which combines resources and market share. This can help businesses fight rivals more successfully,

particularly in highly competitive industries. According to a Sirower (2001) study, gaining a competitive edge through market consolidation is a common driving force behind M&A deals. Overall, the advantages of mergers and acquisitions lie in their potential to drive growth, improve efficiency, and position companies for long-term success in dynamic and competitive business environments.

Amidst all the advantages these have some drawbacks too, firstly, cultural misalignment between the merging entities can result in organizational challenges, including employee resistance, communication breakdowns, a decline in overall morale (Cartwright & Cooper, 1996), difficulty in integrating and conflicts between cultures as well.

Secondly, financial risks may arise, as the process of integration can incur substantial costs, including those associated with combining systems, redundancies, and retraining (Gaughan, 2010). Significant financial risks can arise from M&A transactions, such as overpaying for the target business, underestimating integration expenses, and not achieving the anticipated synergies. Poor financial performance following the transaction is a major reason why many M&A deals fail to generate value for shareholders, according to research by Kaplan and Weisbach (1992).

Moreover, M&A transactions may face regulatory hurdles and antitrust concerns, leading to delays or even cancellations of the intended merger or acquisition (Baldwin, 2012). The post-transaction phase may witness strategic challenges in achieving the anticipated synergies, often due to operational inefficiencies and difficulties in harmonizing different corporate cultures (Hitt, Ireland, & Hoskisson, 2017). Although cultural integration is essential to the success of M&A deals, it is sometimes disregarded, which results in difficulties following the deal (Marks & Mirvis, 2011). Acquisitions and mergers must pass regulatory review and approval procedures, which can be expensive and time-consuming. In order to address concerns about market concentration and competition, corporations may be required by antitrust laws and regulations to divest particular assets or make concessions (Mitchell et al., 2004). Normal business operations may be interrupted by the M&A process, which could cause supplier worries, employee distraction, and consumer uncertainty. Careful preparation and execution are necessary to manage the shift while preserving business continuity (Pablo, 1994).

Furthermore, there is a possibility that the expected benefits, such as increased market share or cost savings, may not materialize, impacting the overall financial performance of the merged entity (King et al., 2004). These disadvantages underscore the importance of careful planning, due diligence, and strategic management in mitigating potential drawbacks associated with M&A activities.

Within the landscape of mergers and acquisitions (M&A), various strategic types emerge, each distinctive in its intent and execution. Horizontal mergers signify the consolidation of companies operating within the same industry and market, striving to attain economies of scale and bolster market share (Gaughan, 2010). In contrast, vertical mergers unfold when companies within the same supply chain or production process unite, streamlining operations and curtailing costs (Gaughan, 2010). Conglomerate mergers, on the other hand, witness companies from disparate industries forging alliances, often driven by a desire to diversify risks and venture into novel markets (Ross, Westerfield, & Jordan, 2018).

Shifting focus to acquisitions, friendly acquisitions transpire with the acquiescence and collaboration of the target company's management, facilitating a seamless integration process (Gaughan, 2010). In contrast, hostile acquisitions unfold when the acquiring entity pursues the target without its concurrence, frequently engendering resistance and potential conflicts (Ross, Westerfield, & Jordan, 2018). Asset acquisitions, a distinct type in the acquisition spectrum, involve the procurement of specific assets from a target company, allowing the acquirer to selectively purchase desired components rather than the entire entity (Gaughan, 2010). These diverse types of mergers and acquisitions underscore the multifaceted strategies that organizations employ to achieve their strategic objectives in the complex landscape of corporate consolidation. Now we'll be looking into all of these in detail.

2.1 Types of Mergers and Acquisitions

2.1.1 Conglomerate

A conglomerate is when two firms of entirely different industries come together. For example, a leading manufacturer of soft drink, merges with an athletic shoe manufacturing firm. There

are two variations in conglomerate mergers (Minority Business Development Agency, 2012). In the same manner a conglomerate involves companies from unrelated industries coming together, typically motivated by a strategic aim to diversify risks and enter new markets. In the context of corporate finance, Ross, Westerfield, and Jordan (2018) similarly characterize conglomerate mergers as transactions where organizations from different sectors amalgamate, seeking synergies beyond their core competencies. A real-life example of a conglomerate merger is the acquisition of the entertainment company Disney by the media conglomerate ABC in 1996 (Boudway, 2019). The 1999 merger of Exxon Corporation and Mobil Corporation, which resulted in the creation of ExxonMobil Corporation, is a significant actual example of a conglomerate merger in the energy sector. As a result of this merger, one of the biggest energy corporations in the world was formed, with activities including petroleum product manufacturing, distribution, marketing, and refining (Tanzer, 2000).

One type of conglomerate merger is a market extension merger, is when two businesses that are part of the same industry but operate in separate marketplaces combine to increase their market share. This usually happens when the two companies want to reach out to a bigger market that ensures a greater client base. One example of this type of merger is when RBC Centura acquired Eagle Bancshares Inc (Minority Business Development Agency, 2012). In the Nordic region, a noteworthy example of a market extension conglomerate merger is the 2020 purchase of Schibsted ASA by Sanoma, a Finnish firm (Sanoma, 2019). While Schibsted concentrated more on its core businesses in Norway and Sweden, this acquisition helped Sanoma to increase its market position in the Nordic region, particularly in the Finnish market (Schibsted, 2019). Three main reasons as to why this merger is advantageous are because of geographic expansion, market leadership and operational synergies. By acquiring Schibsted's Finnish operations, which included well-known online markets like Tori.fi and Oikotie.fi, Sanoma sought to strengthen its position in the Finnish media market (Sanoma, 2019). Through the expansion of its digital reach and improvement of its portfolio of online marketplaces and classifieds, the acquisition strengthened Sanoma's position as a leader in the Finnish media setting (Schibsted, 2019). It was anticipated that Sanoma's current operations will see considerable operational efficiencies as well as improved service offerings to advertisers and customers following the integration with Schibsted's Finnish operations (Sanoma, 2019). Thus,

Sanoma maintained its position as Finland's top digital service provider, especially in the online marketplace and classifieds industry (Reuters, 2020).

Secondly, the other type of conglomerate merger is a product extension merger, is when two companies are in the same industry and manufacture products in the same market as well. One of the good examples is Mobilink Telecom Inc been acquired by Broadcom (Minority Business Development Agency, 2012). Another good example of conglomerate merger is as this merger brings together entities operating in distinct industries, combining Disney's expertise in family entertainment with ABC's media broadcasting capabilities. Another notable instance is the merger of Fiat, an automotive company, with the luxury sports car manufacturer Ferrari, illustrating a conglomerate merger across different segments of the automotive industry (Nasser, 2019). These examples highlight how conglomerate mergers can facilitate cross-industry collaboration, fostering diversification and strategic expansion.

2.1.2 Vertical merger

According to Gaughan (2010), vertical mergers take place when businesses that are part of the same production process or supply chain combine, simplifying operations and cutting costs. Vertical mergers are defined as deals in which organizations integrate along the production or distribution chain by Ross, Westerfield, and Jordan (2018).

This strategic alignment can be divided into two main categories: forward vertical integration and backward vertical integration. Backward integration is the process of purchasing suppliers or companies involved in earlier phases of production (Gaughan, P. A, 2010). An automotive manufacturer purchasing a company that produces vital components such as engines or raw materials is an example of backward integration. On the other hand, forward integration happens when a company buys out distributors or companies that are in a later stage of the supply chain. For example, a beverage company might buy out a chain of retail stores in order to have direct control over product distribution and retailing. Furthermore, collaborative ownership arrangements are a feature of equity-link vertical mergers (Ross, S. A., Westerfield, R. W., & Jordan, B. D, 2018). This is exemplified by joint ventures, in which an electronics manufacturer partners with a software development company to integrate hardware and

software offerings. Although these integration strategies have potential drawbacks like antitrust scrutiny and operational complexities, they also offer benefits like improved supply chain control, cost reduction, and risk mitigation. Businesses considering vertical integration as a strategic move in their industry must grasp these subtleties (Gaughan, 2010).

The 2018 AT&T acquisition of Time Warner is a noteworthy example of a vertical merger in the real world (Liptak, 2018). A vertical merger occurred between the media and entertainment company Time Warner and the telecommunications giant AT&T. Through this integration, AT&T was able to streamline its operations and forge supply chain synergies by controlling both the distribution (telecoms infrastructure) and content creation (film studios, television networks). The 1999 merger of Exxon and Mobil serves as another example (Fishman, 1999). Two oil companies that were engaged in different phases of the production process—from exploration and extraction to refining and distribution—came together as a result of this vertical integration.

The German automaker Volkswagen AG's acquisition of the Swedish battery maker Northvolt AB is an iconic example of a forward vertical merger in the Nordic region. Leading international automaker Volkswagen AG purchased a 20% share in Northvolt AB, a Swedish battery manufacturing firm, in 2019. In order to improve supply chain management and guarantee a steady supply of batteries for its electric cars (EVs), Volkswagen executed this calculated strategic decision. By ensuring a steady and dependable supply of batteries, an essential component for EVs, Volkswagen sought to integrate its supply chain for electric vehicles (Volkswagen AG, 2019). Volkswagen would achieve cost efficiencies by reducing its dependency on outside suppliers and achieving greater economies of scale by making a direct investment in a battery plant (Northvolt AB, 2019). According to Bloomberg (2019), Volkswagen's direct access to Northvolt's cutting-edge battery technology and manufacturing methods gave it a strategic advantage in its ability to produce electric vehicles. By guaranteeing that it could satisfy the rising demand for electric vehicles, the investment helped Volkswagen position itself more competitively in the quickly expanding EV industry (Reuters, 2019).

In the Nordic region, one of the examples for backward vertical merger, is the purchase of the Norwegian aluminum manufacturer Sapa by the Norwegian energy business Norsk Hydro in

2017. In order to acquire more control over the manufacture of aluminum products, from raw materials to finished goods, Norsk Hydro sought to consolidate its supply chain by obtaining complete control over Sapa (Norsk Hydro, 2017). Significant operational synergies, such as cost savings, increased productivity, and expanded capacity for product development, were anticipated from the combination (Sapa, 2017). By enhancing its market presence and diversifying its product line in the downstream business, the purchase elevated Norsk Hydro to the position of global leader in the aluminum industry (Norsk Hydro, 2017).

Additionally, equity-link vertical mergers involve collaborative ownership arrangements, such as joint ventures where two companies pool resources to form a new entity. These integration strategies offer companies opportunities to enhance efficiency, control, and competitiveness across the supply chain, with potential benefits including cost reduction, supply chain control, and risk mitigation (Ross, Westerfield, & Jordan, 2018; Gaughan, 2010). An example of this type of integration could be the acquisition of the 10% equity stake in a Norwegian renewable energy firm called Scatec Solar ASA specializes in the development of solar power projects by Equinor ASA, a multinational energy business based in Norway, formerly known as Statoil. By exploring the renewable energy space, especially solar power, Equinor hoped to diversify its energy portfolio and enhance its already-existing oil and gas business (Equinor, 2018). As part of its plan to shift to more environmentally friendly energy sources and lessen its carbon footprint, Equinor invested in Scatec Solar (Scatec Solar, 2018). With Scatec Solar's experience and Equinor's financial stability and market reach, the equity investment offered chances for cooperation and synergies in the development of large-scale solar projects (Equinor, 2018). Through the investment, Equinor was able to expand its portfolio of renewable energy sources, strengthening its environmental credentials and keeping pace with global trends towards cleaner energy sources (Reuters, 2018). With strategic interests in the development of solar power, the equity-link merger established Equinor as a major player in the renewable energy market (Bloomberg, 2018). Together with Scatec Solar's project development skills and Equinor's resources, the cooperation sped up the deployment of renewable energy through joint efforts in solar power projects (Scatec Solar, 2018).

These examples illustrate how combining various phases of a product or service's lifecycle can lead to vertical mergers that improve efficiency and competitiveness.

2.1.3 Horizontal merger

According to different academics, a horizontal merger is the union of businesses that serve the same market and industry. According to Gaughan (2010), horizontal mergers are deals in which companies that are in comparable stages of production or service combine to gain economies of scale and a larger portion of the market. When businesses are directly competing with one another, horizontal mergers happen, according to Weston and Weaver (2001). Real-life examples of horizontal mergers include the merger of Exxon and Mobil in 1999 (Fishman, 1999), where two major oil companies operating in the same industry joined forces to consolidate their market presence. Another instance is the merger between pharmaceutical giants GlaxoWellcome and SmithKline Beecham in 2000 (BBC News, 2000), forming GlaxoSmithKline. This merger brought together two companies with similar product lines, contributing to the consolidation of their market share in the pharmaceutical industry.

Two key types of horizontal mergers delineate this integration strategy. First, backward vertical integration involves the acquisition of suppliers or entities engaged in earlier stages of production. For instance, an automotive manufacturer acquiring a company producing essential components, such as engines or raw materials, exemplifies this type. A prime example of this backward vertical integration merger is when Swedish electricity distribution company Ellevio purchased Fortum Distribution AB, Fortum's Swedish electricity distribution company in the year 2015. Ellevio was able to grow its client base and geographic reach in the Swedish energy distribution industry as a result of the acquisition (Ellevio, 2015). Ellevio improved its infrastructure capabilities and service dependability by acquiring Fortum's well-established distribution network (Ellevio, 2015). Ellevio was able to streamline processes, cut expenses, and boost efficiency because to the merger's large economies of scale (Fortum, 2015). Ellevio became one of the biggest companies in the Swedish power distribution industry as a result of the acquisition, which greatly boosted its market share (Reuters, 2015). Ellevio was able to increase its operational efficiency as a result of the merger by consolidating its operations and streamlining its procedures (Bloomberg, 2015). Ellevio improved the caliber and dependability

of its power distribution services to clients by integrating Fortum's distribution assets (Ellevio, 2015).

Conversely, forward horizontal integration occurs when a company acquires distributors or businesses in later stages of the supply chain. A classic example is a beverage company acquiring a chain of retail stores to directly control product distribution and retailing. In 2020, leading Danish international power corporation Ørsted (formerly DONG Energy) purchased SEAS-NVE, a major Danish energy cooperative, for its retail and distribution operations. By acquiring SEAS-NVE's retail customers, the merger enabled Ørsted to dramatically increase the size of its customer base in Denmark and strengthen its position in the Danish energy market (Ørsted, 2019). Ørsted sought to enhance its market share and fortify its competitive advantage in the energy industry by merging its customer portfolio and distribution assets with SEAS-NVE (SEAS-NVE, 2019). It was anticipated that the combination would result in operational benefits, such as increased economies of scale, streamlined processes, and better customer service efficiency (Ørsted, 2019). After acquiring SEAS-NVE's retail and distribution division, Ørsted expanded its clientele dramatically and established itself as a dominant force in the Danish power industry (Reuters, 2020). By utilizing SEAS-established NVE's retail operations and distribution network, the merger allowed Ørsted to provide its consumers with more competitive and complete energy services (Ørsted, 2020). The agreement strengthened Ørsted's position in the Danish market, enabling it to more successfully compete with other energy suppliers in the area (Bloomberg, 2020).

In addition to the above types of horizontal mergers, there is one more called the equity-link horizontal merger, which entails a business owning an ownership share in a different business, commonly a rival, that operates at the same supply chain step (Gaughan, 2017). A remarkable case of a horizontal equity-link merger in the Nordic energy industry is when Lundin Petroleum AB, a Swedish production and exploration business for oil and gas was acquired by Equinor ASA (formerly Statoil), an established multinational energy firm based in Norway. One of the most active oil and gas regions in the world, the North Sea, was the target of Equinor's acquisition of a sizable ownership holding in Lundin Petroleum (Equinor, 2016). Through the optimization of exploration and production efforts, the equity investment made possible cooperation prospects

between Equinor and Lundin in several upstream projects (Equinor, 2016). Through the transaction, Equinor's resource base was strengthened by gaining indirect access to Lundin's development projects and oil and gas reserves (Lundin Petroleum, 2016). Due to its ownership of Lundin Petroleum, Equinor was able to take advantage of Lundin's established record of successful exploration and gain more control over operations and strategy (Reuters, 2016). By utilizing the resources and experience of both businesses, the collaboration increased exploration and production efficiency (Equinor, 2016). Long-term production and reserve growth was aided by the investment, which also strengthened Equinor's growth prospects in the North Sea and broadened its resource base (Bloomberg, 2016).

2.1.4 Friendly acquisitions

Friendly acquisitions, defined by financial scholars, represent transactions wherein the acquiring company and the target company collaborate with mutual consent, fostering a smoother integration process. Gaughan (2010) characterizes friendly acquisitions as instances where the management of the target company is amenable to the acquisition, facilitating a cooperative approach to the merger. Ross, Westerfield, and Jordan (2018) similarly highlight the consensual nature of friendly acquisitions, wherein both parties work together to finalize the terms and conditions.

A real-life example of this friendly merger which occurred in 2009, Nuon, a Dutch energy firm, and Vattenfall, a Swedish global power corporation, amalgamated their activities in a cooperative and mutually agreed upon way. Given Nuon's significant regional presence, Vattenfall sought to increase its geographic reach into the Dutch market (Vattenfall, 2009). Significant synergies, including improved customer service and operational efficiencies, were anticipated from the transaction (Vattenfall, 2009). By acquiring substantial renewable energy and gas assets from Nuon, the merger helped Vattenfall to diversify its energy portfolio (Nuon, 2009). Vattenfall became one of the biggest energy firms in Northern Europe as a result of the merger, which greatly improved its market position there (Reuters, 2009).

Operational synergies benefitted the combined company, resulting in lower costs and more effective energy production and delivery (Bloomberg, 2009). Vattenfall's capacity for producing

renewable energy increased because of the merger, in line with its strategic focus on sustainable energy solutions (Nuon, 2009).

Improved market position, operational synergies, better efficiency, and an expanded client base are just a few of the benefits that usually result from a friendly merger.

2.1.5 Hostile acquisition

Hostile acquisitions, as defined by financial scholars, represent transactions in which the acquiring company pursues the target without the target's agreement, often leading to resistance and potential conflicts. Gaughan (2010) characterizes hostile acquisitions as instances where the target company's management opposes the acquisition, necessitating aggressive measures by the acquirer. Ross, Westerfield, and Jordan (2018) similarly describe hostile acquisitions as transactions marked by the lack of cooperation from the target, with the acquiring company resorting to direct approaches.

In the same manner examples of hostile acquisitions are prominent in corporate history. One notable instance is the hostile takeover bid by Kraft Foods for Cadbury in 2010 (BBC News, 2010). The management of Cadbury initially resisted the acquisition, viewing it as undervaluing the company. Another example is the attempted hostile takeover of pharmaceutical giant AstraZeneca by Pfizer in 2014 (The Guardian, 2014). AstraZeneca's management resisted the acquisition, arguing that it undervalued the company and could potentially harm its long-term prospects.

The 2020 bid by U.S.-based hedge fund Elliott Management Corporation to acquire control of the Finnish utility firm Fortum is a real-life illustration of a hostile takeover attempt in the Nordic energy markets. Elliott made attempts to influence Fortum's strategic decisions, especially those pertaining to its operations and investments in the energy industry. This involved advocating for adjustments that were more in line with Elliott's investment philosophies and financial goals (Reuters, 2020). Elliott promoted strategy changes that it thought would increase investor value to maximize shareholder value. This frequently entailed pushing for management changes, restructuring, or asset sales (Financial Times, 2020). There

were serious conflicts inside Fortum's management and board as a result of the hostile bid. Elliott's assertive strategies fostered a climate of ambiguity and disagreement on the company's future course (Reuters, 2020). Fortum was forced to reconsider its strategic intentions, particularly its investments in Uniper, a German energy business, as a result of Elliott's pressure. Elliott's advocacy for more lucrative endeavors and effective capital deployment contributed to this reevaluation (Financial Times, 2020). The market and media gave the hostile takeover attempt a lot of attention, which caused Fortum's stock price to fluctuate. In order to assess possible outcomes and their effects on Fortum's operations and financial health, investors kept a close eye on the situation (Bloomberg, 2020).

Although the outcomes of a hostile takeover might differ greatly, they frequently involve management changes, strategic direction changes, operational reorganizations, and effects on corporate culture and employee morale.

2.1.6 Asset acquisitions

Gaughan (2010) defines asset acquisitions as transactions where the acquiring company selectively purchases desired assets to meet strategic objectives. Ross, Westerfield, and Jordan (2018) further elaborate on this, emphasizing that asset acquisitions allow the acquirer to choose specific components of the target company's operations.

Examples include such as Google's acquisition of Motorola Mobility in 2012 (Google, 2012). In this case, Google strategically acquired specific assets, including Motorola's patent portfolio, to strengthen its position in the smartphone market. Another example is Facebook's acquisition of Oculus VR in 2014 (Facebook, 2014). This asset acquisition enabled Facebook to gain access to Oculus VR's cutting-edge virtual reality technology, aligning with Facebook's strategic goals in the tech industry.

Leading international infrastructure investment corporation Global Infrastructure Partners (GIP) purchased a 50% share in the Hornsea 1 offshore wind farm project in 2018 from Danish multinational power provider Ørsted. Given the expanding significance and profitability of the renewable energy sector, GIP sought to expand its investments in renewable energy assets. An important addition to its portfolio was the Hornsea 1 project, which is the largest offshore wind

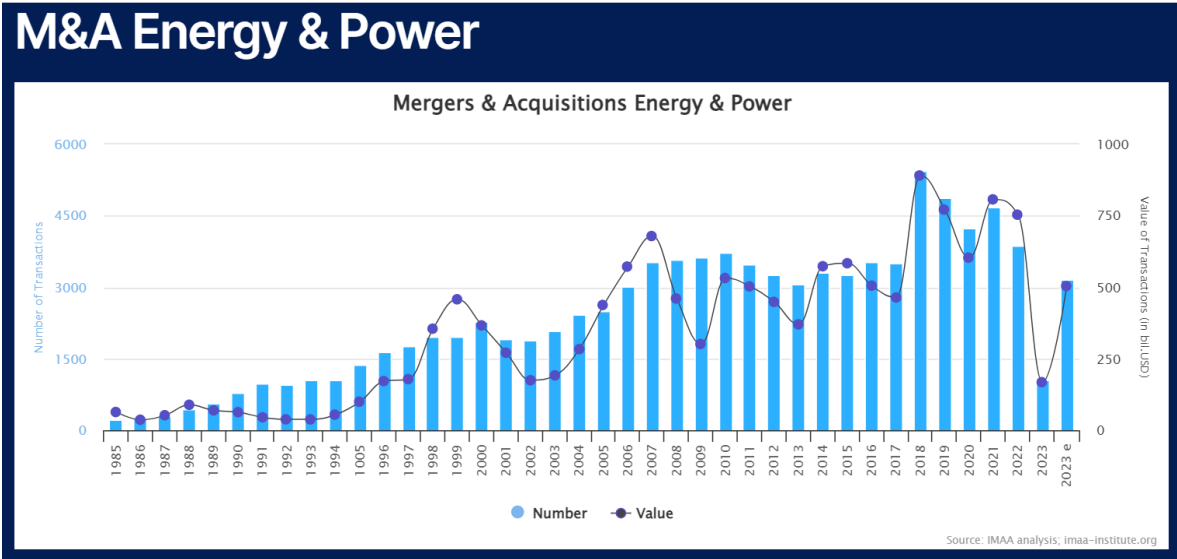
farm in the world (Ørsted, 2018). Ørsted was able to support its growth and expansion in the renewable energy industry by reinvesting the large funds it received from the sale of its 50% investment in Hornsea 1 into additional renewable energy projects (Financial Times, 2018). Through the agreement, Ørsted was able to maintain operational control and a sizable stake in the project's future earnings while sharing some of the financial risks related to such a big undertaking (Reuters, 2018). Ørsted's better financial situation allowed it to seek additional global investments in renewable energy projects. The proceeds from the sale helped Ørsted achieve its strategic objective of leading the world in renewable energy (Ørsted, 2018).

GIP regarded the acquisition as a calculated move into the renewable energy space, giving it a significant and well-known offshore wind energy asset (Bloomberg, 2018). The project's revenue and operational synergies benefited both companies. Hornsea 1's continued successful operation is ensured by the combination of Ørsted's offshore wind farm development competence and GIP's investment savvy (Reuters, 2018).

Increased financial strength, improved operational effectiveness, strategic realignment, and market expansion are possible outcomes of an asset acquisition.

2.2 Statistics and figures explaining M & A

2.2.1 In the Nordic region



Source: <https://imaa-institute.org/mergers-and-acquisitions-statistics/ma-statistics-by-industries/>

The above table illustrates the number of M&A transactions in the energy sector that have taken place from 1985 till 2023. In the year 2021, there has been 4,687 transactions which valued of USD 806.8 billion whereas in 2022, there have been 3,868 M&A transactions with a value of USD 753 billion worth. During the year 2023, the estimated number of transactions is 3,171 with a value of USD503.73 billion (Thompson Financial, 2019).

Early on, from 1993 to 2003, there was a moderate number of mergers and acquisitions (M&A) activity, with an annual average of about 1500 deals, mostly involving conventional energy assets. The opening up of the energy markets and the first moves toward privatization occurred during this time (Institute for Mergers, Acquisitions and Alliances, 2023). Between 2001 and 2010 there was a steady upsurge in M&A activity, with an average of 2500 to 3000 deals per year. The early phases of the renewable energy boom, supportive regulatory frameworks, and an increasing focus on energy efficiency were the drivers (Deloitte, 2023). During 2011 and 2020, there was a notable surge in mergers and acquisitions (M&A) activity, with an average of 3500 transactions annually. The fast growth of renewable energy projects, especially in the fields of wind and solar power, was primarily responsible for this spike. Major wind farm projects and a rise in foreign investor activity in the Nordic sector were among the noteworthy deals (Deloitte, 2023). Over the recent years, due to promises to carbon neutrality and sustainable energy targets, M&A activity remained high during this time. Over 4687 transactions were made in the industry in 2021 alone, demonstrating strong investor confidence and strategic industry consolidation (Deloitte, 2023).

The key drivers for these activities could be firstly due to the regulatory incentives imposed by the Nordic region's governments which set significant targets for renewable energy, and this has been a major factor in M&A activity. These targets set by the governments was supported by the policies implemented for the renewable energy, such as tax breaks, subsidies, and aggressive national carbon reduction objectives. Due to the favorable investment climate these policies fostered, both domestic and foreign players were drawn in (Institute for Mergers, Acquisitions and Alliances, 2023). Denmark and Sweden, for example, have set goals to attain 100% renewable electricity by 2030 and 2040, respectively (International Renewable Energy

Agency, 2023). The Nordic countries' regulatory framework has been quite favorable to investments in clean energy. M&A is in a favorable climate thanks to policies that support energy efficiency, grid modernization, and carbon pricing systems. As per the European Commission (2023) (Deloitte United States), the EU Emissions Trading System (ETS) has played a noteworthy role in encouraging investments in low-carbon technologies by placing a price on carbon emissions.

Secondly, it is the advancement in technology which caused renewable energy projects to be increasingly attractive and feasible due to advancements in energy generation and storage technologies. In order to obtain these technologies and incorporate them into their operations, businesses pursued M&A (Deloitte, 2023). Technological developments in wind, solar, and hydroelectric power have dramatically reduced the cost of producing renewable energy. Due to this, large-scale renewable energy projects are now more competitive when compared to conventional fossil fuels, drawing significant M&A investment. Technological advancements in energy storage technologies, solar panel efficacy, and turbine efficiency have been crucial (BloombergNEF, 2023) (Deloitte United States). It has become essential to create cutting-edge energy storage technologies, such as batteries and other storage systems. These technologies improve the dependability and attractiveness of intermittent renewable energy sources like solar and wind by better integrating them into the grid. Additionally, developments in smart grid technologies have made it possible to distribute and control energy more efficiently, increasing the viability of renewable energy projects (Deloitte, 2023).

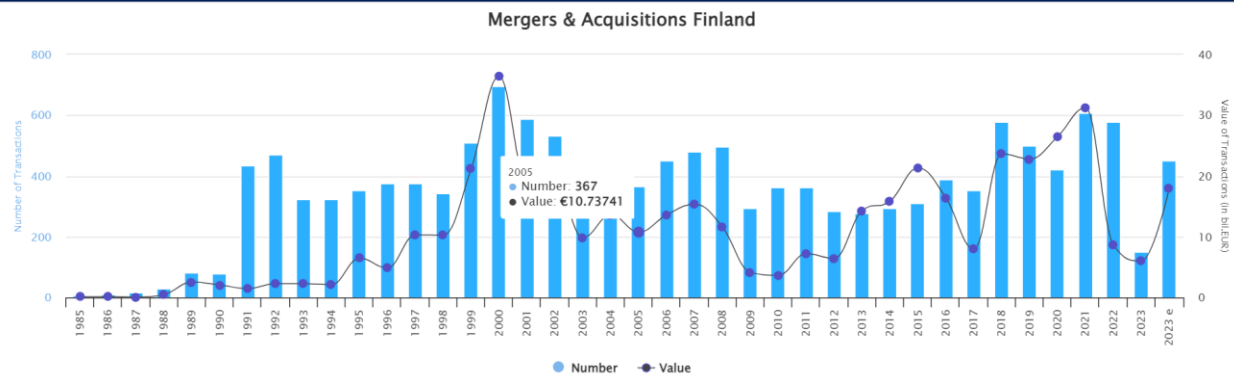
Lastly, market consolidation was a key reason for the increase in M&A activities over the years. Consolidation in the industry is a result of the requirement for scale and operational efficiency. Bigger companies intended to buy smaller ones in order to gain market share and reduce costs. (Institute for Acquisitions, Alliances, and Mergers, 2023). A major factor driving M&A activity has been achieving economies of scale. Larger energy corporations have looked to acquire other businesses in an effort to strengthen their position in the market, save expenses, and improve operational effectiveness. Scale can have a major impact on the cost structure and competitive advantage, as demonstrated by the wind and solar industries (Institute for Mergers, Acquisitions and Alliances, 2023). In addition to standard acquisitions, joint ventures

and strategic collaborations have become more common. Through these agreements, businesses can access new markets, share benefits and risks, and combine complementary talents. For instance, collaborations between regional Nordic businesses and global energy behemoths have been crucial in increasing the potential for renewable energy sources and exchanging technological expertise (Deloitte, 2023). Organizations have made attempts to enhance their market positions by pursuing both vertical and horizontal integration. In order to gain market share and lessen rivalry, companies may merge or buy out rivals in a process known as horizontal integration. In order to ensure stability and cost-efficiency in operations, vertical integration entails purchasing businesses throughout the supply chain to control additional stages of production and distribution (Institute for Mergers, Acquisitions and Alliances, 2023).

It is anticipated that M&A activity in the Nordic energy sector will continue to be robust due to the necessity for technological innovation, ongoing energy transition initiatives, and sustained regulatory support for renewable energy sources. A favorable environment for investments has been established by the ambitious targets for renewable energy and the accompanying regulatory frameworks. Developments in technology have reduced prices and made renewable energy projects more viable. Companies have been able to obtain economies of scale, save expenses, and improve their competitive positions as a result of market consolidation efforts. The Nordic region is now positioned as a leader in the global energy transformation as a result of these variables working together to drive significant M&A activity. Businesses will probably keep looking to make strategic acquisitions to strengthen their position in the market and accomplish sustainability objectives. (Deloitte, 2023; Institute for Mergers, Acquisitions and Alliances, 2023).

2.2.2 Mergers and Acquisitions in Finland

M&A Finland



Source: <https://imaa-institute.org/mergers-and-acquisitions-statistics/ma-statistics-by-industries/>

Finland has seen a significant volume of mergers and acquisitions (M&A) activity since 1985; 13,966 transactions totaling 454 billion EUR have been completed. Nonetheless, current patterns show that M&A activity in the nation is declining. There were 578 deals in 2022 compared to 607 in 2021, and the total value of those deals fell dramatically from 26 billion EUR to 8 billion EUR in the same period, a 69% decrease. Finland recorded 265 transactions as of the first seven months of 2023, totaling 9.6 billion EUR. Even though there were 363 deals in 2022 as opposed to 377 deals in the same period the year before, there was a notable 100% increase in value, rising from roughly 4.8 billion EUR. Anticipating ahead, it is projected* that there will be approximately 454 transactions in Finland by the end of 2023, with a combined value of 16.5 billion EUR. Even though this suggests that there were 21% fewer deals than the previous year, the total value is predicted to increase by 102% (IMAA, 2023).

Some of the key transactions of mergers and acquisitions that occurred in Finland during the years of 1993 and 2023, were the following; firstly, A leading player in the Nordic energy market, Fortum Corporation was founded in 1998 through the combination of Imatran Voima Oy (IVO) and Neste Oy. According to Fortum (2023), through this merger, Neste's oil refining and marketing businesses were linked with IVO's power generation and distribution capabilities. Also, according to Fortum (2023)'s article, the goal of this consolidation was to build a more comprehensive and competitive energy firm that could function well in a market

that was becoming increasingly liberalized. Fortum's rise to prominence in the Nordic energy industry improved its capacity to make investments in cutting-edge technology and broaden its market penetration.

Secondly, The German utility E.ON purchased a majority share in the Finnish power business Espoon Sähkö in 2001. This purchase was a component of E.ON's larger plan to increase its market share in the Nordics. Through the acquisition, E.ON was able to solidify its position in the Finnish energy market and improve service delivery and operational efficiency by utilizing Espoon Sähkö's pre-existing infrastructure and customer base (E.ON, 2001); (Nordic Energy Review, 2003).

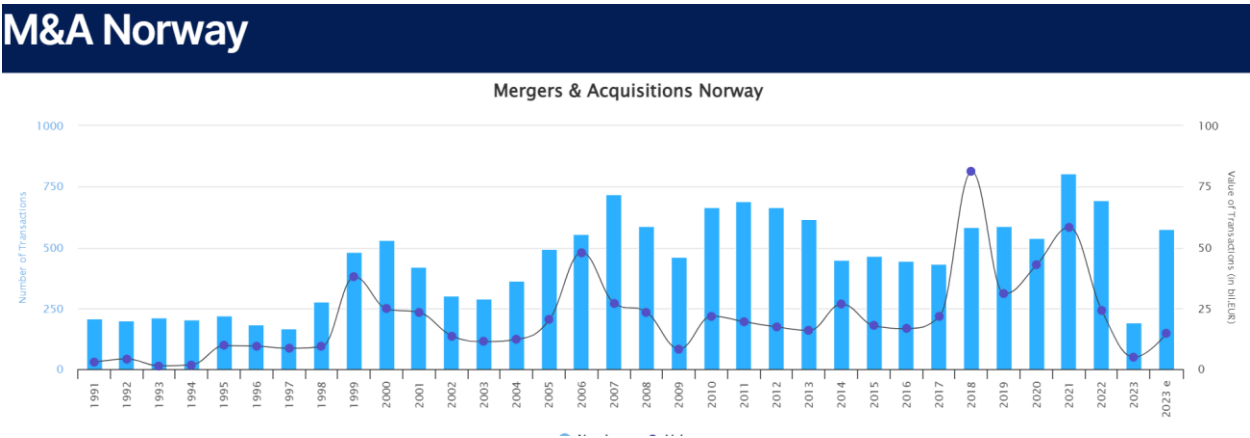
Thirdly, in 1996, the Finnish regional electricity firm Hämeen Sähkö was purchased by the Swedish energy corporation Vattenfall. Vattenfall made this step as part of their plan to increase their market share in the Nordic energy sector. Through the acquisition, Vattenfall expanded its customer base and resource base in Finland, which helped the company gain market share and strengthen its cross-border energy delivery capabilities (Vattenfall, 1996); (Nordic Energy Review, 2003).

Another iconic example would be when the Finnish retail and distribution of power activities of Vattenfall were purchased by the Finnish telecom company Elisa in 2002. As per Elisa (2002)'s article, Elisa made this transaction as part of their diversification plan to go into the energy industry. Through the acquisition, Elisa was able to provide bundled services, such as electricity and telecommunications, to Finnish clients by utilizing its infrastructure and customer service experience, based on Vattenfall (2002)'s article.

Finally, the merger between Kainuun Energia, a local energy provider, and Pohjolan Voima, a significant energy producer in Finland, that took place in the year 2000. The purpose of this merger was to improve the companies' capacity to invest in new energy projects and streamline operations (Pohjolan Voima, 2000). The merger produced a more powerful regional player with the ability to make larger investments in infrastructure upgrades and renewable energy initiatives (Kainuun Energia, 2000).

In view of Finland's adherence to EU regulations and dedication to renewable energy, the country's regulatory climate has been quite favorable to M&A activity. Companies have been encouraged to participate in mergers and acquisitions in order to strengthen their market positions and adhere to new laws by policies that support the use of renewable energy sources and the liberalization of the energy markets (European Commission, 2023; Finnish Energy, 2023). M&A activity has been boosted even further by the EU Emissions Trading System (ETS) and national initiatives targeted at lowering greenhouse gas emissions. In order to comply with strict environmental regulations, businesses strive to obtain cleaner technologies and more sustainable business models (European Commission, 2023). Technological developments in wind, solar, and biomass have increased the viability and affordability of renewable energy projects. In order to remain competitive in a market that is changing quickly, Finnish companies have sought acquisitions to incorporate new technologies into their operations (BloombergNEF, 2023; Nordic Investment Bank, 2023). M&A activity has also been fueled by the development of smart grids and energy storage solutions. These technologies are desirable acquisition targets because they improve the efficiency and dependability of energy systems. Gaining access to these technologies will enable businesses to integrate intermittent renewable energy sources more effectively by managing energy distribution and storage (Deloitte, 2023).

2.2.3 Mergers and Acquisitions in Norway



Norway has seen a remarkable number of M&A transactions since 1991, amounting to roughly 14,830 transactions with a total estimated value of 701 billion EUR. More specifically, the market saw roughly 694 announced deals in 2022, totaling over 24 billion EUR. Compared to

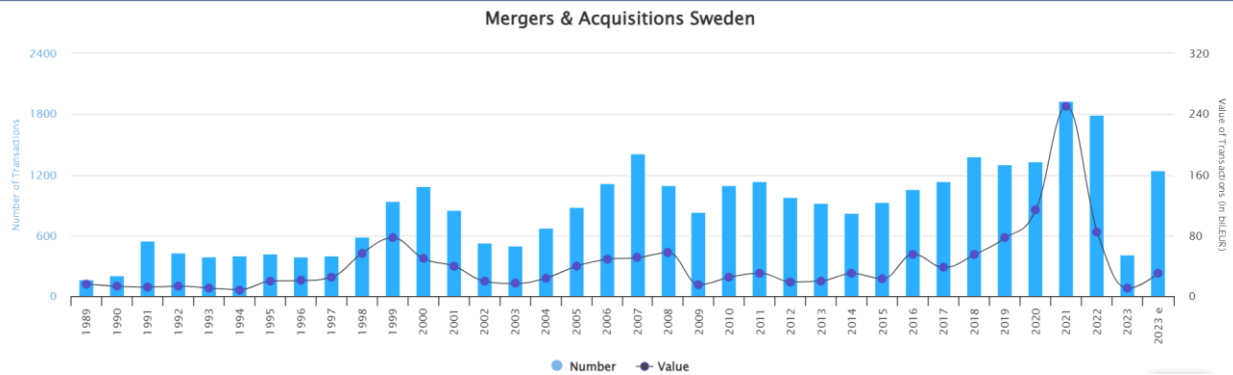
the previous year, when 806 deals totaling over 58.2 billion EUR were announced, this figure indicated a 14% decrease in the number of deals and a notable 59% decline in value. Between January and July of 2023, there was a noticeable 37% decline in the quantity of announced deals—roughly 320 deals as opposed to 442 deals during the same period the year prior. In 2023, the aggregate value of these transactions experienced a noteworthy reduction of approximately 44%, totaling 10.4 billion EUR, as opposed to the 18.6 billion EUR documented in the year prior. According to current projections*, there will be roughly 549 M&A transactions by the end of 2023, which represents a 21% decrease from the 694 transactions that occurred the year before. Furthermore, compared to the prior year, it is anticipated that the total value of these transactions will have drastically decreased by 26% to roughly 17.8 billion EUR by year's end to previous years 24.1 billion EUR. (IMAA, 2023).

One example of an acquisition that took place in Norway between Statkraft and E.ON Nordic. Statkraft is a significant state-owned energy corporation in Norway acquired two companies in two different years during the span of thirty years. The first expansion was in 2016, Statkraft strengthened its focus on renewable energy sources and further solidified its position in the region by purchasing E.ON's Nordic hydropower assets for €1.62 billion (Statkraft, 2018). Thereafter, Skagerak Energi is a major regional energy player that Statkraft purchased for approximately \$1.3 billion. With regard to hydropower and renewable energy sources in particular, this action improved Statkraft's standing in the Nordic energy market (Statkraft, 2018).

Another instance was, in order to increase its capabilities and market share, Aker Solutions, a significant participant in the Norwegian oil and gas industry, executed a number of acquisitions during this time. To improve its offshore drilling capabilities, Aker Solutions, for instance, bought Aker Drilling in 2010 (Aker Solutions, 2010). Previously known as Statoil, Equinor expanded its global footprint and diversified its energy portfolio by partnering with diverse companies and making acquisitions. Although not limited to the Nordic area, Equinor's operations have a big impact on the energy industry in Norway (Equinor, (n.d.)).

2.2.4 Mergers and acquisitions Sweden

M&A Sweden



Sweden has announced 30,435 M&A deals totaling more than 1.39 trillion euros since 1989. The nation saw 1,791 announced transactions in 2022, valued at 79.4 billion euros. In comparison, 2021 had a higher total value (212.8 billion EUR) but a lower number of deals (1,933). This shows a roughly 7% drop in the number of deals and a 63% drop in the total value. During the first seven months of 2023, there was a significant downturn in M&A activity, with a 35% drop in the number of announced deals and a 69% decrease in total value compared to the previous year. The number of deals decreased from 1,115 to 720, and the total value plummeted from 61.4 billion EUR to 19.3 billion EUR. By the end of 2023, projections* indicate around 1,234 deals with a total value of approximately 33.1 billion EUR. This forecast highlights a 31% decrease in the number of announced M&A deals and a substantial 58% decline in total value compared to the preceding year (IMAA, 2023).

The above stated figures depict how common mergers and acquisitions are in the Nordic region and it is understood that to a certain extent these M & A come from the energy industry, as mergers and acquisitions in the Nordic energy sector have been relatively common, driven by several factors. The region has witnessed a push towards renewable energy sources, technological advancements, and a desire for greater sustainability. Companies seek to position themselves strategically to navigate the evolving energy landscape.

One notable example is the acquisition of Vattenfall's lignite operations by EPH (Energetický a průmyslový holding) and PPF Investments in 2016. This transaction was part of Vattenfall's

strategic shift away from fossil fuels, and the deal was valued at approximately EUR 1.7 billion (Vattenfall, 2016).

Another significant development was the merger between Fortum and Uniper in 2018. Fortum, a Finnish energy company, acquired a majority stake in Uniper, a German energy company. This deal aimed to enhance Fortum's position in the European energy market and was valued at around EUR 3.8 billion (Fortum, 2018).

Therefore, based on above provided information which provides necessary proof that M & A do happen often between companies in the Nordic region and specifically in the energy industry I plan to undertake a comprehensive research initiative focused on mergers and acquisitions that have transpired over the years in the Nordic countries. The limited available evidence in this domain underscores the significance and potential novelty of such an investigation. The research aims to provide an in-depth analysis of M&A transactions within the Nordic region, offering valuable insights into strategic business activities and their implications.

2.3. The impact on profitability when M&A occurs

M&A (mergers and acquisitions) can have significant impacts on the associated companies' profitability. A number of variables, such as the firms' strategy alignment, how well the merger or acquisition is carried out, the state of the market, and the companies' financial standing, might affect the outcomes.

Two profitable M&A Case Studies in the Nordic Energy Area:

In 2020, the Finnish energy business Fortum successfully acquired the bulk of Uniper, a German energy company. Through strategic synergies and enhanced market presence, this acquisition helped Fortum improve its financial performance, diversify its energy portfolio, and solidify its position in the European energy market (Fortum, 2020).

In 2018, US-based Deepwater Wind was acquired by Danish renewable energy company Ørsted. Ørsted's offshore wind portfolio and presence in the US were greatly enlarged by this

acquisition, which boosted revenue and solidified Ørsted's leadership position in the offshore wind energy industry worldwide (Ørsted, 2018).

Two unsuccessful M&A scenarios in the Nordic Energy Region:

In 2009, the Swedish oil company Lundin Petroleum was targeted of an acquisition effort by Statoil, which is currently known as Equinor. Significant shareholder resistance and regulatory obstacles ultimately caused the merger to collapse. The unsuccessful acquisition put a burden on Statoil's finances and diverted management's attention from other important strategic objectives, which hurt the company's expansion and profitability (Reuters, 2009).

In 2009, Dutch energy business Nuon was purchased by the Swedish state-owned energy corporation Vattenfall for a sum of €10.3 billion. The deal received harsh criticism because of the exorbitant purchase price and Nuon's underwhelming financial performance after it was completed. Vattenfall suffered large write-downs and financial losses as a result, which had an effect on its profitability and position in the market (Bloomberg, 2013).

When a merger or acquisition is carried out, there may be a substantial and intricate influence on the acquiring company's profitability metrics. A number of profitability metrics, such as net profit margin, return on equity (ROE), return on assets (ROA), can be used to assess this impact.

Net profit margin is a crucial financial indicator that calculates the proportion of net income from total revenue. It is an essential measure of a business's profitability and effectiveness in controlling costs in relation to income.

Net Profit Margin is calculated as:

$$\text{Net Profit Margin} = \left(\frac{\text{Net Profit}}{\text{Total Revenue}} \right) \times 100$$

Where;

The net profit is the total earnings of a business after all costs, such as taxes and interest, have been subtracted from total revenue.

Total revenue is the complete amount of money received from sales or rendered services.

A company's ability to transform sales into actual profit can be determined by looking at its net profit margin. Better profitability and operational efficiency are indicated by a higher net profit margin, whereas lower margins are indicative of increased expenses or less effective sales (Garrison, Noreen, & Brewer, 2021). It is employed to contrast the profitability of businesses operating in the same sector. It aids in evaluating the long-term profitability trends of a business. It helps investors assess a company's profitability and make well-informed choices about their investments.

Return on equity (ROE) is a financial performance indicator that assesses a company's capacity to make money off of the equity held by its shareholders. It is a gauge of a company's financial viability and efficiency, showing how efficiently it makes use of its equity basis to generate value for investors.

Return on Equity is calculated as:

$$\text{ROE} = \left(\frac{\text{Net Income}}{\text{Shareholders' Equity}} \right) \times 100$$

Where;

Net Income is the amount of money a business makes after subtracting all costs, taxes, and expenses from its total income.

Shareholders' equity represents the remaining stake in the company's assets once all liabilities are deducted.

According to Ross, Westerfield, and Jordan (2019), return on equity (ROE) is a crucial indicator of profitability that demonstrates how well a business uses shareholder capital to produce earnings. Investors can use it to evaluate the financial results of businesses operating in the same sector. According to Brigham and Ehrhardt (2017), a higher return on equity (ROE) is indicative of effective management and a strong ability to create returns on shareholder investments. ROE is a metric used by investors to evaluate a company's stock attractiveness. Businesses assess financial plans and operational performance planning using return on equity (ROE). ROE is used as a comparison against past performance and peers in the industry.

Return on Assets (ROA) is a financial indicator that assesses a company's profitability in relation to its total assets. It shows how well a business uses its resources to turn a profit.

ROA is calculated as:

$$\text{ROA} = \left(\frac{\text{Net Income}}{\text{Total Assets}} \right) \times 100$$

Where;

Net Income is the amount of money a business makes after subtracting all costs, taxes, and expenses from its total income.

Total assets is the total of all the company's assets, both current and non-current.

ROA demonstrates how well a business uses its resources to generate profits (Ross, Westerfield, & Jordan, 2019).

The profitability measure offers valuable information about a company's capacity to generate profits from its asset investments (Brigham & Ehrhardt, 2017). According to Berk and DeMarzo (2020), investors can find more efficient organizations by using return on assets (ROA) to analyze the performance of companies in the same industry. Investors use return on assets (ROA) to compare profitability across similar companies and evaluate how well a company uses its assets. Businesses use return on assets (ROA) to assess how well their management uses assets to turn a profit. By keeping an eye on variations in ROA, it aids in tracking a company's performance over time.

Profitability is affected by M&A in a complicated and multidimensional way. Poorly performed mergers and acquisitions (M&A) can result in significant financial hardship and decreased profitability, even as effective M&A can lead to huge financial rewards and enhanced competitive standing. Realizing the potential profitability improvements from M&A requires careful due diligence, strategy alignment, and efficient integration.

3 Data description & methodology

This section depicts the information of the chosen data sources, whether originating from primary collection methods employed by the researcher or drawn from existing databases, literature, or previous studies. The specifics of data collection methods are outlined, elucidating the instruments or tools selected, such as surveys, interviews, experiments, or archival research, with a rigorous justification for their appropriateness in the given research context. Variables under scrutiny are rigorously defined, accompanied by a meticulous exposition of the measures or metrics employed for quantification, thereby operationalizing key concepts for precise analysis. Furthermore, the sampling strategy is explicated, shedding light on the method employed to select participants or cases, with a robust rationale for its alignment with the overarching research objectives (George, 2005).

This research is conducted using quantitative methodology. I have chosen to mainly acquire the data from the Refinitiv workspace. Most M&A studies consider a variety of different factors that could influence the returns for both the acquirer and the target (Furuholm, 2022). Although many different variables have been examined, it can be said that two to three specific variables play a more significant part in empirical study.

In the pursuit of investigating the potential correlation between mergers and acquisitions (M&A) and profitability along with the share prices within the Nordic energy sector, a quantitative research methodology has been meticulously chosen. This methodological approach seeks to employ statistical analyses to discern patterns and relationships between M&A activities and financial performance indicators. The quantitative framework provides a structured and objective lens through which the impact of M&A transactions on profitability can be systematically examined, contributing to a nuanced understanding of the intricate dynamics within the sector. Leveraging this methodology facilitates the identification of empirical evidence that may substantiate or challenge existing theoretical frameworks related to the financial implications of M&A activities.

The stock market's responses to the announcement and conclusion of M&A transactions will be used to gauge how M&A activities affect share prices. By comparing actual stock price

movements with expected returns and accounting for market trends and industry benchmarks, abnormal returns will be determined. This will make it possible to determine whether M&A deals cause notable changes in profitability. The analysis will look at both short- and long-term trends in share prices following M&A, as well as the duration of any impact that may have been noticed.

The sample consists of M&A transactions that took place between 1990 and 2024. The criteria's below were taken into consideration to choose this data sample.

1	M&A transactions between the 1990 and 2023
2	Both acquiror and target located in the Nordic region
3	Both acquiror and target operates in Energy sector
4	Only M&A's of companies were included, not projects or part of companies
5	Only listed companies and published financial statements

Between 1993 and 2024, there were 3244 M&A transactions; only 683 of these deals involved both an acquirer and a target that were based in the Nordic region and were involved in the energy industry. Thereafter, in order to make it easier to obtain the share prices, the data sample was reduced to only listed firms, totaling 83 transactions. However, after the profitability measures were implemented, the final sample was reduced to 61 transactions.

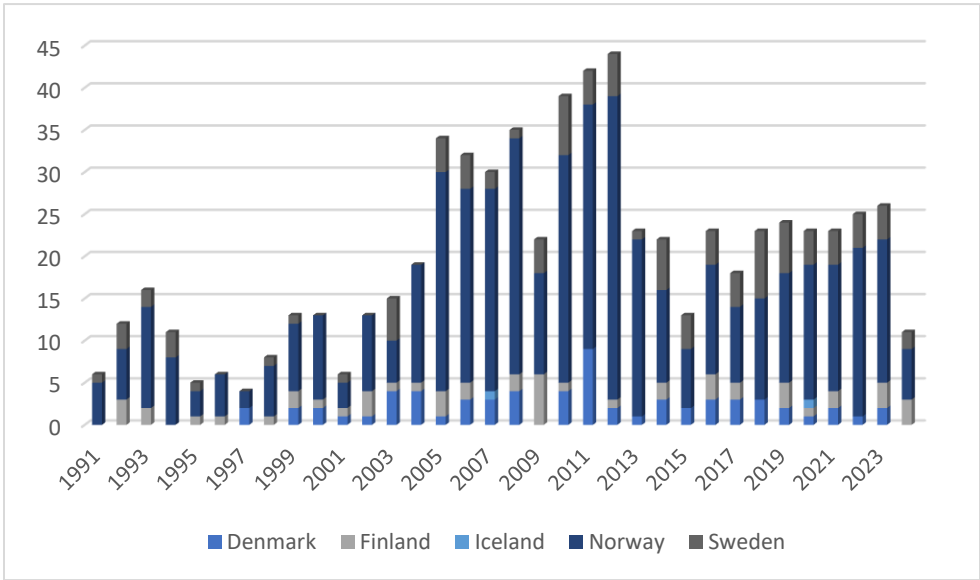


Fig 1: No. of transactions that the acquirer was based in the Nordic energy region

The graph above in Fig 1 shows the total number of merger and acquisition transactions that took place between 1991 and March of 2024, a span of 23 years in total. This graph's data only includes firms with offices located in the Nordic area and their 683 transactions within the Energy sector. With 463 deals over the course of 23 years, it is abundantly clear from these statistics that Norway is the nation in the Nordic region that has been most active in terms of company mergers and acquisitions. Sweden, with 101 trades throughout these years, is the second most active nation according to the statistics in the graph. With just two deals involving businesses in the Nordic area and the energy sector, Iceland is the nation that has engaged in the fewest mergers and acquisitions.

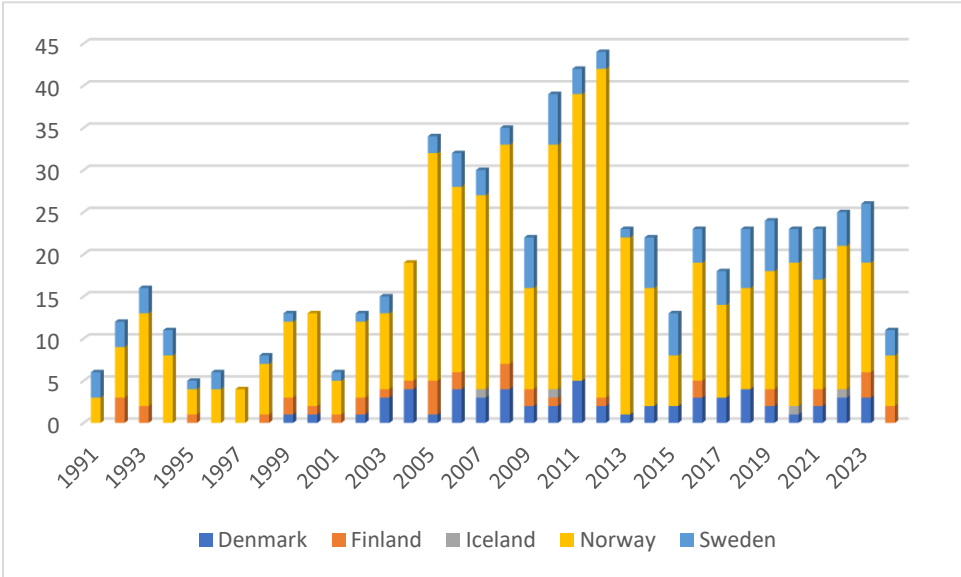


Fig 2: No. of transactions that the target was based in the Nordic energy region

Based on the target's location in the Nordic region and its activity in the energy sector between 1991 and March 2024, Fig 2 displays the 683 M&A transactions of the data sample. The number of transactions increased steadily after the 2000s, with the highest number reported between 2005 and 2012, totaling an average of 35 to 45 transactions per year. Similarly to Fig 1, Norway is the nation that has seen the greatest number of mergers and acquisitions (474 events), while Iceland, which has again been the least involved in these transactions, has only seen 4 deals over the course of these 23 years.

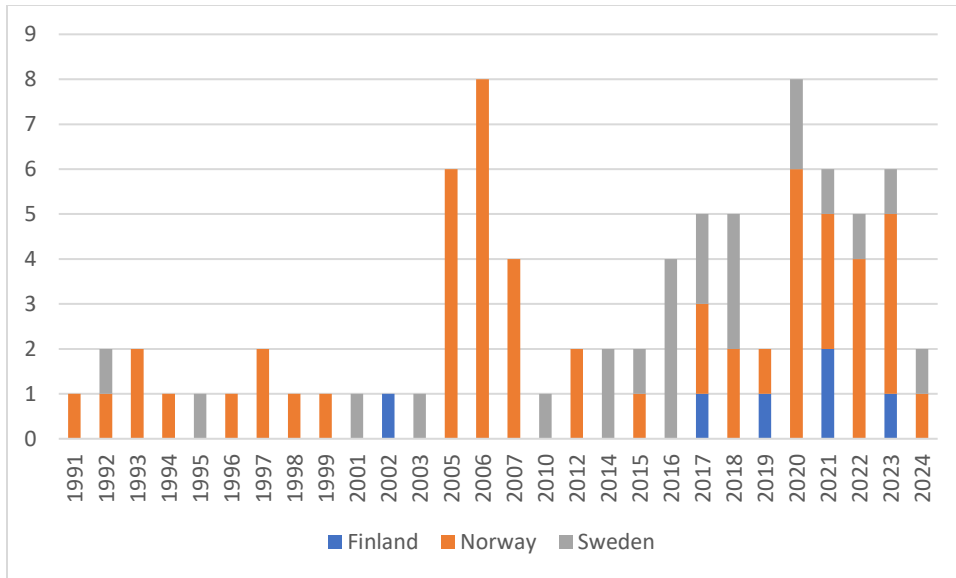


Fig 3: No. of listed transactions that the acquirer was based in the Nordic region

This Fig 3 above depicts the number of listed Mergers and Acquisitions that took place between the years 1990 and 2024 March where the acquirer operated in the Nordic region. This graph clearly shows the increase in the transactions over the years. As you can see, in the years 2006 and 2020, were the years that the most of number of listed transactions took place, which was 8 and thereafter, its 2005, 2021 and 2023 where there were 6 transactions total in each year. Between 1991 and 2003 are the years which had the least average number of M&A transactions that took place over these 20+ years.

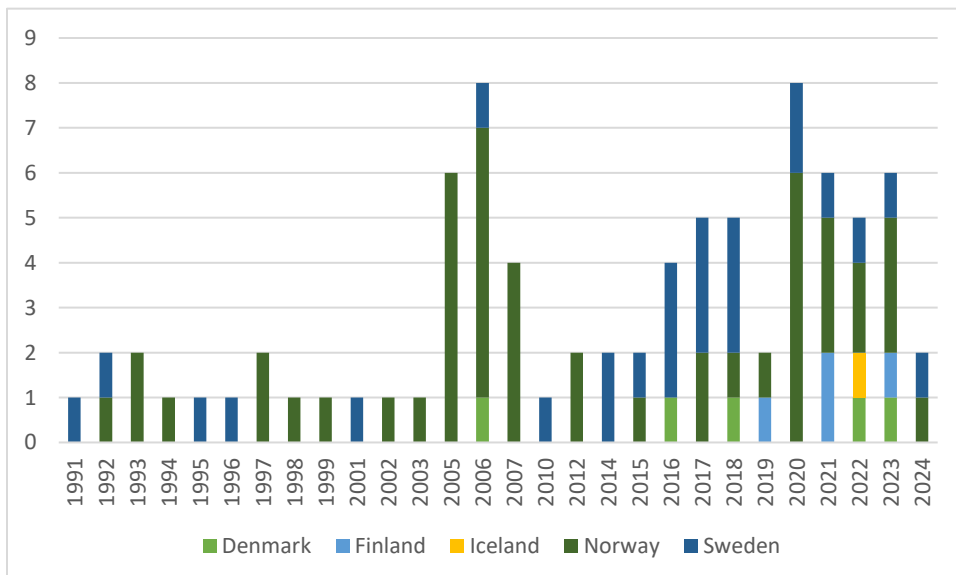


Fig 4: No. of listed transactions that the target was based in the Nordic region

The above graph depicts the number of listed mergers and acquisitions that took place between 1991 and 2024 March. As per the data in the graph, the highest number of transactions that have taken place are in 2006 and 2022 where the acquired target was based in the Nordic region and in the energy sector. Over recent years there has been an increase in the number of transactions compared to the 90's.

Hypotheses

A hypothesis refers to a clear and testable statement that predicts the expected relationship between two or more variables based on existing literature, theoretical frameworks, or the researcher's expectations. A hypothesis serves as a guiding proposition that the research aims to investigate and either confirm or reject through empirical analysis.

“Exploring the Financial Implications of Mergers and Acquisitions within the Nordic Energy Sector: An In-depth Analysis of Profitability Dynamics.”

Outcome	Description
H1- Positive outcome hypotheses	There is indeed an impact on profitability through mergers and acquisitions for companies operating in the Nordic energy sector.
H2- Negative outcome hypotheses	There is no impact on profitability through mergers and acquisitions for companies operating in the Nordic energy sector

H1- Positive outcome hypotheses

This hypothesis suggests that companies engaging in mergers and acquisitions within the Nordic energy sector will experience an impact in their profitability either improvement or fall, potentially due to synergies, cost efficiencies, or enhanced market positioning resulting from the strategic activities.

H2- Negative outcome hypotheses

This hypothesis posits that M&A activities may not have a significant impact on the profitability of companies in the Nordic energy sector. It suggests that, despite strategic initiatives such as mergers and acquisitions, profitability may remain relatively stable or unaffected.

This hypothesis presents alternative expectations regarding the relationship between M&A activities and profitability. The research aims to empirically test this hypothesis through a comprehensive analysis of financial data, aiming to either confirm the positive impact, reject it in favor of the null hypothesis, or unveil nuanced findings that contribute to a deeper understanding of the financial implications of M&A in the Nordic energy sector.

4 Empirical Results

According to the existing literature, no similar research has been conducted in the Nordic region to understand the impact of profitability on energy companies that mergers and acquisitions create. Numerous authors in the field of finance and business studies have asserted that mergers and acquisitions (M&A) can indeed have a significant impact on the profitability of companies. Gaughan (2010) contends that M&A activities provide opportunities for synergies and operational efficiencies, leading to improved profitability. Ross, Westerfield, and Jordan (2018) support this perspective, emphasizing that strategic acquisitions can enhance a company's overall financial performance.

4.1 Results based on existing literature

For instance, the acquisition of Pixar by The Walt Disney Company in 2006 is cited as a case where the successful integration of creative capabilities resulted in increased profitability for Disney (The Walt Disney Company, 2006). Additionally, Weston and Weaver (2001) highlight that well-executed mergers can contribute to increased market share and competitive advantages, factors that are closely tied to enhanced profitability. These viewpoints collectively underscore the notion that when undertaken strategically, mergers and acquisitions have the potential to positively influence the financial landscape of companies, contributing to increased profitability.

Palepu, Healy, and Peek (2013) emphasize the importance of scrutinizing financial statements to evaluate the financial health of companies post-M&A, including profitability indicators. Financial statement analysis allows researchers and analysts to assess changes in key financial metrics, such as return on investment (ROI), net profit margin, and earnings per share, providing a comprehensive view of the impact on profitability (George, 2019). Focusing on specific financial ratios, Brigham and Houston (2019) assert that profitability ratios derived from financial statements, such as return on assets (ROA) and return on equity (ROE), offer insights into the effectiveness of M&A strategies. By comparing these ratios before and after M&A events, analysts can discern the impact on overall profitability. Additionally, Weston, Mitchell, and Mulherin (2004) argue that financial statement analysis enables a thorough examination of cost structures, synergies, and operational efficiencies, all of which play pivotal roles in determining the impact of M&A on profitability.

As per Hägg (2020)'s methodology, successful mergers or acquisitions are those that result in an increase in the acquirer's stock price at the conclusion of each event window under investigation, because there is no existing literature, estimating the results in advance may be difficult. At the same time impacts may vary from country to country and firm to firm as well depending on the situation. As an example, the same political incident may have different effects on different industries in the same country.

While the prevailing view suggests that mergers and acquisitions (M&A) can positively impact profitability, some authors argue that this relationship may not always hold true. Agrawal and Jaffe (2003) caution that M&A transactions do not guarantee immediate or sustained improvements in profitability and that the anticipated synergies may not always materialize as expected. Hitt, Ireland, and Hoskisson (2020) emphasize that M&A outcomes are contingent on effective post-merger integration strategies and organizational capabilities, and without meticulous planning and execution, the expected impact on profitability may not be realized.

An illustrative example is the AOL and Time Warner merger in 2000, which initially held promise but ultimately faced challenges in integrating distinct corporate cultures, leading to diminished profitability (Gaughan, 2010). Furthermore, Ravenscraft and Scherer (1989) contend that the long-term profitability impact of M&A may be influenced by factors such as market conditions

and industry dynamics, suggesting that a blanket assertion about their positive impact may oversimplify the complex reality of M&A outcomes. These perspectives contribute to a nuanced understanding, emphasizing that while M&A can offer strategic opportunities, careful consideration and effective implementation are essential for ensuring a positive impact on profitability.

Finkelstein and Cooper (2000) argue that share prices can be volatile and influenced by various external factors, making them an unreliable measure of a merger's success or its impact on profitability. Furthermore, Mitchell and Lehn (1990) assert that market reactions may be speculative and short-term, and thus may not accurately reflect the long-term profitability implications of M&A. Financial statement analysis, while providing valuable insights into a company's financial health, may not capture the intangible aspects of post-merger integration, cultural challenges, or strategic misalignments, as highlighted by Cartwright and Cooper (1993).

Moreover, Hitt, Ireland, and Hoskisson (2020) argue that financial statement analysis may not fully capture the complexities of organizational integration, synergies, and strategic shifts that impact profitability post-M&A. These perspectives collectively suggest that while share prices and financial statements offer valuable information, a more holistic approach, incorporating qualitative assessments and a focus on long-term strategic outcomes, is crucial for a comprehensive understanding of the impact of M&A on profitability.

Based on the above information and points it could be understood that research hasn't been conducted before determining the impact of M & A on the profitability of companies in the energy industry in the Nordic region. So as a first-time author and researcher I conducted the above stated research and analysis to determine and draw a relation between the said variables.

4.2 Results based on the current study

4.2.1. Descriptive statistics between the share prices and profitability measures

The use of statistical methods to determine and identify a dataset's key characteristics is known as descriptive statistics. These methods give a means of comprehending and interpreting vast amounts of data in a meaningful manner by providing concise summaries about the sample and the measures. To provide a summary of the distribution, central tendency, and variability of the data, descriptive statistics are frequently employed in the early phases of data analysis (McCluskey & Lalkhen, 2007; Rumsey, 2016; Doane & Seward, 2011).

The most widely used metrics for measuring the middle or usual value of a dataset are the mean, median, and mode. According to McCluskey and Lalkhen (2007), the mode is the value that appears the most frequently in the dataset, the median is the middle value when data points are placed in order, and the mean is the average of all the data points. The spread or dispersion of the data points is described by these metrics, which include the range, variance, and standard deviation. According to Rumsey (2016), the variance represents the average squared deviation from the mean, the standard deviation is the square root of the variance, and the range is the difference between the highest and lowest values. Measures of shape, such as skewness and kurtosis, reflect the distribution shape of the data. As per Dawson and Seward (2011), skewness quantifies the degree of asymmetry in the distribution, whereas kurtosis measures the degree of "tailedness" or the concentration of values surrounding the mean.

This analysis is based on the number of mergers and acquisitions that took place between the years 1990 and 2023. Of the 3244 M&A transactions that took place between 1993 and 2024, only 683 had an acquirer and a target with operations in the Nordic region and involvement in the energy sector. Afterwards, the data sample was narrowed down to only listed firms, resulting in 83 transactions, to facilitate the acquisition of the share prices. However, the final sample was downsized to 61 transactions following the implementation of the profitability measures.

The following abbreviations were used below:

Acquirer SP on acq date	Acquirers share price on acquisition date
Acquirer SP 1 month after acq date	Acquirers share price 1 month after acquisition date
ROE	Return on Equity
ROA	Return on Assets
GPM	Gross Profit Margin
OPM	Operating Profit Margin
NPM	Net Profit Margin

Date Announced	Target	Acquirer	Acquirer SP on acq date	Acquirer SP 1 month after acq date	Change in SP	Date Announced	Target	Acquirer	Acquirer SP on acq date	Acquirer SP 1 month after acq	Change in SP
03-04-91	Gavleborgs Petroleum AB	Norsk Hydro Olje/Norsk Hydro ASA	10.27	9.79	-4.67%	08-02-17	Svartnas Vindkraft	Arise AB	20.4	17.6	-13.73%
06-03-92	Forcenergy Partners	Forcenergy AB	29.32	26.35	-10.13%	30-03-17	Reinertsen AS	Aker Solutions ASA	33.99	31.23	-6.47%
26-03-92	Mobil Oil A/S Norge/Mobil	Norsk Hydro ASA	8.12	8.57	5.54%	18-09-17	SunCool AB	SaltX Technology Holding AB	27.24	35.03	28.60%
17-11-95	Svenska Oljegruppen AB (F	Forcenergy AB	28.8	30.9	7.29%	24-10-17	Hess Norge AS	Aker BP ASA	164.8	198.2	20.27%
05-02-96	Uno-X/Burmah Castrol PLC	Norsk Hydro ASA	14.77	14.93	1.08%	27-11-17	Seabased Ab	Fortum Oyj	17.36	16.5	-4.95%
17-06-97	Nonwegian Oil Trading Hold	Hafslund ASA	44.5	46.5	4.49%	02-03-18	Bjvus Servicestati	Smart Energy Sweden Group AB	0.01	0.01	0.00%
16-09-98	Loke AS(CorrOcean ASA)	Kongsberg Offshore AS	23.46	20.63	-12.06%	09-03-18	Simrishamns Bil AS	Smart Energy Sweden Group AB	0.01	0.01	0.00%
12-03-02	Mikkjel Field	Fortum Oyj	4.48	4.63	3.35%	15-06-18	Sollebrunn Oljese	Smart Energy Sweden Group AB	0.01	0.01	0.00%
14-01-03	OER oil AS	Lundin Petroleum AB	3.54	3.74	5.65%	15-11-18	Scatec Asa	Equinor ASA	205.1	194.34	-5.25%
15-04-05	Eastern Drilling ASA	Smedvig ASA	118.75	104	-12.42%	19-12-19	Scatec Asa	Equinor ASA	173.5	182	4.90%
07-06-05	Eastern Drilling ASA	Smedvig ASA	125.25	135.5	8.18%	20-07-20	Smart Energy Swed	Colabitoil Sweden AB	9.02	8	-11.31%
03-08-05	PetroJack ASA	Awilco Offshore ASA	33.9	33.9	0.00%	20-07-20	Smart Energy Swed	Smart Energy Sweden Group AB	0.01	0.01	0.00%
04-08-05	PetroJack ASA	Awilco Offshore ASA	34	33.7	-0.88%	31-08-20	Skogvind AS	Cloudberry Clean Energy AS	12.34	13.19	6.89%
23-09-05	Eastern Drilling ASA	Smedvig ASA	160	129	-19.38%	01-09-20	Scanvind2 AS	Cloudberry Clean Energy AS	12.29	12.71	3.42%
28-12-05	Offshore Rig Services ASA	Awilco Offshore ASA	41	51.25	25.00%	16-10-20	SN Power AS	Scatec Asa	256	234.4	-8.44%
06-04-06	Eastern Drilling ASA	Ocean Rig ASA	47.8	48.7	1.88%	26-04-21	Deepwell AS	Archer Ltd	67.4	57.24	-15.07%
11-05-06	Denerco Oil A/S	Altinex ASA	22.7	13	-42.73%	20-08-21	Usma Kraft AS	Cloudberry Clean Energy ASA	14.36	16.72	16.43%
17-08-06	Petrolia Drilling ASA	PetroJack ASA	20.2	20	-0.99%	13-09-21	Misen Enterprises	Misen Energy AB	3.56	5.1	43.26%
23-08-06	Prosafe ASA	BW Offshore Ltd	255.26	240.53	-5.77%	03-11-21	Greenwatt Koiram	Falck Renewables Finland Oy	8.73	8.61	-1.37%
24-10-06	Gassnett AS	Hafslund ASA	118.5	119	0.42%	03-11-21	Greenwatt Koiram	Falck Renewables Finland Oy	8.73	8.61	-1.37%
16-11-06	Offrig Drilling ASA	Awilco Offshore ASA	62.25	63.25	1.61%	07-02-22	Unitech Power Sys	Aker Solutions ASA	25.05	30.34	21.12%
15-01-07	Prosafe ASA	BW Offshore Ltd	259.19	265.08	2.27%	08-04-22	Smart Energy Swed	Colabitoil Sweden AB	9.14	9.14	0.00%
03-02-07	Advanced Production & Log	BW Offshore Ltd	275.88	258.2	-6.41%	09-06-22	Boen Kraft AS	Cloudberry Clean Energy ASA	17.8	15.72	-11.69%
25-06-07	PetroProd Ltd	PetroJack ASA	22.5	22.5	0.00%	02-11-22	BeGreen A/S	Equinor ASA	387.85	366.3	-5.56%
23-07-07	OTG Energy	Interoil Exploration & Production	4,827.31	4,508.52	-6.60%	16-11-22	Jardboranir hf	Archer Ltd	51.38	45.92	-10.63%
14-03-12	Front Exploration AS	North Energy ASA	10.35	9.36	-9.57%	10-02-23	Odin Energy Gener	Cloudberry Clean Energy ASA	12.98	10.44	-19.57%
16-07-12	Ocean Riser Systems AS	AGR Group ASA	0.11	0.1	-9.09%	14-03-23	Pohjan Voima Oy	Arise AB	42.5	58.9	38.59%
21-12-15	Explora Petroleum AS	North Energy ASA	1	1.05	5.00%	15-03-23	Scatec ASA	Equinor ASA	291.75	308.35	5.69%
06-04-16	Kolvallen Vind AB	Arise AB	16.7	15.6	-6.59%	18-04-23	Stax Petroleum Co	Panoro Energy ASA	28.82	26.66	-7.49%
17-10-16	Brocklingeberget Vindkraft	Arise AB	18.8	20.5	9.04%	07-06-23	Telge Energi AB	Fortum Oyj	12.135	12.17	0.29%
						23-06-23	Neptune Energy N	Var Energi ASA	27.21	30.66	12.68%

Table 1: Impact of share prices pre and post M&A (after 1 month)

In the above Table 1 table shows the changes in the share prices on the acquisition date as well as one month after acquisition. The average change in share price for all these 61 events is 0.21%, which shows that there is an impact in the share price and more likely it is an increase in share prices.

The highest positive changes were recorded when SunCool AB was acquired by SaltX Technology Holding AB in 2017, the change in share price was 28.6%. Another positive change of 38.59% was when Pohjan Voima Oy was acquired by Arise AB in March 2023. However, I did find out negative impact on share prices as well. The largest negative impact on share price was when Denerco Oil A/S acquired by Altinex ASA in 2006, where the negative impact on share price was -42.73%. Similarly, when Odin Energy General Partner ApS was acquired by Cloudberry Clean Energy ASA in Feb 2023, the negative change was -19.57%.

Nonetheless, several businesses saw both favorable and unfavorable effects from various acquisitions. For example, Equinor ASA's share price saw notable increases (20-07-20, 4.90%) and decreases (16-11-22, -5.56%) after various acquisitions. Arise AB saw losses (06-04-16, -6.59%) and gains (17-10-16, 9.04%).

The success of these deals is extremely situational and relies on a number of factors, including the strategic fit, integration execution, market conditions, and investor perception. There is no continuous pattern of good or negative impacts from M&As. Some industries, like renewable energy, have contradictory results, indicating that although they seem promising, there is a lot of risk and uncertainty involved. The biggest shifts, both positive and negative, show how the market's opinion can fluctuate significantly depending on how valuable and risky an acquisition is seen to be.

	<i>Acquiror SP on acq date</i>	<i>Acquiror SP 1 month after acq date</i>	<i>ROE</i>	<i>ROA</i>	<i>GPM</i>	<i>OPM</i>	<i>NPM</i>
Mean	140.6489	134.6377	-3.1525	2.7359	-98.7357	-193.7505	-77.7141
Standard Error	78.9388	73.7437	6.3747	1.2741	127.8810	161.5203	52.1069
Median	23.46	22.5	3.15	2.74	26.64	10.23	2.12
Mode	0.01	0.01	11.19	4.69	14.77	14.77	8.63
Standard Deviation	616.532	575.957	49.788	9.951	998.782	1261.514	406.968
Sample Variance	380111.526	331725.920	2478.872	99.024	997566.408	1591418.065	165622.616
Kurtosis	58.353	58.109	16.580	6.015	60.270	56.926	25.791
Skewness	7.565	7.542	-3.210	1.294	-7.741	-7.450	-5.085
Range	4827.3	4508.51	379.22	66.4	8157.7	9821.91	2608.76
Minimum	0.01	0.01	-281.9	-21.73	-7749.64	-9726.66	-2348.65
Maximum	4827.31	4508.52	97.32	44.67	408.06	95.25	260.11
Sum	8579.585	8212.9	-192.3	166.89	-6022.88	-11818.78	-4740.56
Count	61	61	61	61	61	61	61

Table 2: Descriptive Statistics

As per Table 2, the average indicates that the Acquiror SP's share price on the Acquisition Date was 140.65 on average. A slightly lesser mean (134.64) than the acquisition date (as reported on Acquiror SP One Month After Acquisition Date) was observed. The average losses in equity returns for return on equity are shown by the mean of -3.15. Positive average returns on assets

are indicated by the 2.74 mean for return on assets. Mean of 98.74, which suggests typical gross profit margins that are negative. The average operational profit margin is negative, as indicated by the mean of -193.75. A mean of -77.71 indicates average net profit margins that are negative.

Half of the share values were below the median for the Acquiror SP on Acquisition Date 23.46, indicating a right-skewed distribution. Yet again, a right-skewed distribution for Acquiror SP 1 Month After Acquisition Date is indicated by a median of 22.5, which is less than the mean. 3.15 is the median for ROE, indicating positive equity returns for the median company. A symmetry around this core number is suggested by the median for ROA, which is 2.74, the same as the mean. A median of 26.64 indicates that the gross profit margins of the median company were positive. 10.23 is the median, indicating that the operational profit margins of the median company were positive. The median company had positive net profit margins, as indicated by the 2.12 median.

Many companies had very low share prices, as evidenced by the mode for the Acquiror SP on Acquisition Date 0.01, which is the most commonly occurring share price. The mode for acquirer SP one month after the acquisition date was 0.01—a sign that the share prices of numerous companies remained extremely low. The most common value, 11.19, indicates a positive ROE. The ROA's most common value is 4.69. The Gross Profit Margin's most frequent value is 14.77. The most common value for the operating profit margin is 14.77. The most common result for net profit margin is 8.63, which is the mode.

High levels of volatility in the share prices on the Acquiror SP on the Acquisition Date are shown by the standard deviation of 616.53. a standard deviation of 575.96, which suggests that Acquiror SP was highly variable one month following the acquisition date. High variability in ROE is indicated by a standard deviation of 49.79; variability in ROA is shown by a standard deviation of 9.95; and very high variability in gross profit margin is indicated by a standard deviation of 998.78. 1261.51 standard deviation, which shows extremely high OPM variability. 406.97 standard deviation, which suggests that NPM is highly variable.

The Acquiror SP's kurtosis of 58.35 on the Acquisition Date suggests a highly peaked distribution with heavy tails. Very close to the kurtosis on the acquisition date is the kurtosis of

58.11 on Acquiror SP 1 Month After Acquisition Date. Kurtosis of 16.58 suggests that the ROE distribution has heavy tails. A peaked distribution in ROA, as indicated by the kurtosis of 6.01. Kurtosis of 60.27 indicates a very peaked GPM distribution. A very peaked distribution in OPM is indicated by the kurtosis of 56.93. For net profit margin, the kurtosis is 25.79, suggesting a peaked distribution with heavy tails.

The skew of 7.56 shows a significant right skew for Acquiror SP on the day of acquisition. A significant right skew for the acquirer SP one month after the acquisition date is indicated by the skewness of 7.54. The ROE distribution is left-skewed, as indicated by the skewness of -3.21. A right-skewed distribution of ROA can be determined by a skewness of 1.29. A significant left skew in GPM is shown by a skewness of -7.74. Strong left skewness in OPM is represented by a skewness of -7.45. A significant left skew in NPM is apparent by a skewness of -5.08.

In summary, there is significant variability in the share prices at the acquisition date and one month later, with notable skewness and kurtosis. This suggests that a small number of extreme values have a substantial impact on the distribution. Most profitability indicators indicate that the data distributions are not normal because of their high unpredictability, considerable skewness, and kurtosis. Although the median values for ROE, GPM, OPM, and NPM are positive, suggesting that more than half of the companies are performing better than the mean would suggest, the mean values for these metrics are negative, indicating average losses.

4.2.2. Correlation between share prices and profitability measures

The strength and direction of the association between two variables can be measured statistically using correlation (Cohen, Cohen, West, & Aiken, 2003; Moore, McCabe, & Craig, 2012). It measures the relationship between changes in one variable and changes in another. When there is a positive connection, both variables tend to grow as one does. On the other hand, a negative correlation indicates that one variable tends to decrease as the other grows. The correlation coefficient, typically denoted as r , ranges from -1 to 1. An value close to 1 indicates a strong positive correlation, a r value close to -1 indicates a strong negative correlation, and an r value near 0 indicates no correlation (Cohen, Cohen, West, & Aiken, 2003; Moore, McCabe, & Craig, 2012).

The formula for the Pearson correlation coefficient (r) is:

$$r = \frac{\sum(X-\bar{X})(Y-\bar{Y})}{\sqrt{\sum(X-\bar{X})^2 \sum(Y-\bar{Y})^2}}$$

where X and Y are the two variables being compared, and \bar{X} and \bar{Y} are their respective means.

When $r = 1$: Perfect positive correlation;

When $r = -1$: Perfect negative correlation; and

When $r = 0$: No correlation

	<i>Acquiror SP on acq date</i>	<i>Acquiror SP 1 month after acq date</i>	<i>ROE</i>	<i>ROA</i>	<i>GPM</i>	<i>OPM</i>	<i>NPM</i>
Acquiror SP on acq date	1						
Acquiror SP 1 month after acq date	0.9999	1					
ROE	-0.6940	-0.6918	1				
ROA	-0.1861	-0.1842	0.6765	1			
GPM	0.0324	0.0332	0.0837	0.3210	1		
OPM	0.0353	0.0362	0.0980	0.3621	0.9845	1	
NPM	0.0217	0.0224	0.1253	0.3815	0.7493	0.7998	1

Table 3: Correlation

Based on the above analysis shown in Table 3, it is clear that the strong correlation (0.9999) between the stock prices on the acquisition date and one month later suggests that there has been minimal movement in the stock price in the month following the purchase. ROE and ROA exhibit an extremely strong positive correlation (0.6765). This is to be expected since, while measured from opposite angles (equity vs. assets), both metrics quantify profitability. The relationships between ROE and GPM (0.0837), OPM (0.0980), and NPM (0.1253) are not strong. This suggests that profit margins and profitability as determined by equity are not highly correlated. There is a moderate association between ROA and NPM (0.3815), OPM (0.3621), and GPM (0.3210). This implies that asset profitability and profit margins have a somewhat stronger relationship.

In conclusion, the data indicates that there are variable degrees of correlation among the profit margins (GPM, OPM, NPM) and internal profitability indicators (ROE, ROA) and the acquiror's stock price, which stays generally steady shortly after acquisition. Robust correlations between profit margins demonstrate how effectively a business controls its manufacturing costs affects its total profitability. Equity-based profitability (ROE), on the other hand, appears to be less correlated with these margins, indicating that it might be impacted by other elements like financial structure, leverage, and shareholder rules.

4.2.3. Regression between share prices and profitability measures

To ascertain the relationship between variables, regression analysis is a basic statistical technique (Frost, 2017). Regression analysis aims to predict the dependent variable from the values of the independent variables by modeling the connection between the variables. As there are different types to regression analysis, such as simple linear regression model where the analysis is based only one independent and one dependent variable, whereas the in a multiple linear regression model, there is one dependent variable and several independent variables are incorporated.

I chose to proceed further with the multiple regression model as it helps me to analyse the relationship between the different types of profitability measures as well as the share price.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \varepsilon$$

where Y is the dependent variable, X_1, X_2, \dots, X_n are the independent variables, β_0 is the intercept and $\beta_1, \beta_2, \dots, \beta_n$ are the coefficients.

As per the regression analysis conducted below, the share prices are the dependant variable and the profitability measures such as the ROE, ROA, GPM, OPM and NPM are the independent variables.

<i>Regression Statistics</i>	
Multiple R	0.794173871
R Square	0.630712137
Adjusted R Square	0.597140513
Standard Error	365.5665932
Observations	61

Table 4: Regression Statistics

The above regression statistics depicts that the correlation coefficient, or multiple R, indicates that the dependent variable's anticipated and observed values have a linear relationship with a strength and direction of 0.7942. A high positive correlation is shown by a value of 0.7942. The coefficient of determination, or R Square, is 0.6307, meaning that it represents the percentage of the dependent variable's variation that can be predicted from the independent variables. In this case, the model explains 63.07% of the variance in the dependent variable. The value of the adjusted R Square modifies the R Square according to the number of predictors in the model. When many variables are used, the measure becomes more accurate. After adjusting for the number of predictors, an Adjusted R Square of 0.5971 indicates that the model accounts for around 59.71% of the variability in the dependent variable. From this investigation, a standard error of 365.5666 is detected. This calculates the average distance between the regression line and the observed values. A better match is indicated by a lower value.

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	5	12553413.85	2510682.77	18.78706073	7.58357E-11
Residual	55	7350141.372	133638.934		
Total	60	19903555.22			

Table 5: Analysis of Variance

The residuals, or variability not described by the regression model, and the total variability in the data are separated out by the ANOVA table. The regression model's overall significance is indicated by the F-statistic of 18.7871. A more significant model is indicated by a larger value.

The significance value for the F-statistic is $F(7.58357E-11)$. A p-value of less than 0.05, which is extremely significant, signifies statistical significance for the entire regression model.

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	-3.4475	57.5486	-0.0599	0.9524	-118.7774	111.8824	-118.7774	111.8824
ROE	-12.3307	1.3257	-9.3011	0.0000	-14.9875	-9.6739	-14.9875	-9.6739
ROA	32.7196	7.2562	4.5092	0.0000	18.1778	47.2614	18.1778	47.2614
GPM	0.0692	0.2949	0.2345	0.8154	-0.5218	0.6601	-0.5218	0.6601
OPM	-0.0794	0.2591	-0.3064	0.7605	-0.5987	0.4399	-0.5987	0.4399
NPM	-0.0147	0.2082	-0.0705	0.9440	-0.4318	0.4025	-0.4318	0.4025

Table 6: Coefficient and their variables

The -3.4475 intercept is the predicted value of the dependent variable in the scenario where there are no predictors. The intercept may not be statistically significant, as seen by the high p-value (0.9524). A ROE of -12.3307 indicates the dependent variable falls by 12.3307 units for every unit rise in ROE, holding other variables constant. The coefficient for ROE is -12.3307, with a very significant p-value ($7.00202E-13$). This is a notable prediction. A 32.7196 ROA if with a substantial p-value of ($3.45487E-05$), the ROA coefficient is 32.7196. This implies that, while keeping other variables fixed, the dependent variable grows by 32.7196 units for every unit increase in ROA. This is an important prediction as well. With a high p-value (0.8154) and a coefficient of 0.0692, GPM is not a significant predictor. With a high p-value of 0.7605 and an OPM coefficient of -0.0794, it is not a significant predictor. NPM is not a significant predictor, as indicated by its coefficient of -0.0147 and high p-value of 0.9440.

Lower and Upper 95% Confidence Intervals shows that these intervals provide us a range where the true coefficient is 95% likely to lie. The confidence intervals for the important predictors (ROE and ROA) do not encompass zero, demonstrating the relevance of these variables. The intervals include zero for non-significant predictors (GPM, OPM, and NPM), indicating that they are not statistically significant.

In a nutshell, approximately 63.07% of the variability in the dependent variable can be explained by the regression model. There is statistical significance in the model as a whole ($p < 0.05$). Two of the predictors that significantly affect the dependent variable are ROE and ROA,

both of which are statistically significant. In this model, GPM, OPM, and NPM do not exhibit statistical significance as predictors.

4.2.4. Hypothesis results

As mentioned earlier, this study is conducted to analyse and conclude the below relationships.

H1- Positive outcome hypotheses	There is indeed an impact on profitability through mergers and acquisitions for companies operating in the Nordic energy sector.
H2- Negative outcome hypotheses	There is no impact on profitability through mergers and acquisitions for companies operating in the Nordic energy sector

Based on the results of the regression analysis, I can make judgments about how various financial variables affect profitability after a merger or acquisition. As evidenced by its coefficient (-12.3307) and extremely low p-value (7.00202E-13), ROE significantly reduces profitability. This implies that the profitability determined by the dependent variable falls as ROE rises. With a low p-value (3.45487E-05) and a coefficient of 32.7196, ROA significantly increases profitability. This suggests that profitability rises in conjunction with ROA.

Nevertheless, as shown by their high p-values (0.8154, 0.7605, and 0.9440, respectively), GPM (Gross Profit Margin), OPM (Operating Profit Margin), and NPM (Net Profit Margin) do not demonstrate a statistically significant impact on profitability. Their lack of importance is further supported by the fact that their coefficients are nearly 0 and that their confidence intervals include zero. With a significance level (p-value) of 7.58357E-11 and an F-statistic of 18.7871, the total regression model is statistically significant. This suggests a relationship between the dependent variable and at least some of the independent factors.

Therefore, I can draw the conclusion that, although ROE and ROA are crucial markers of profitability following a merger or acquisition, our analysis does not find a substantial direct impact from the profit margins (GPM, OPM, and NPM). This implies that changes in profitability as a result of mergers or acquisitions are not solely tied to profit margins, but also to the effectiveness and use of equity and assets.

In relation to the hypothesis, I can derive from the fact that there is no significant impact on the profitability of companies that take part in these mergers and acquisitions. This data analysis

could vary also due to the limitations of data availability, especially as many companies are not listed as well as most of the financial statements are not publicly available.

5 Conclusion

To sum up, this thesis proposal presents a thorough and in-depth analysis of the financial effects of mergers and acquisitions (M&A) in the Nordic energy industry, with an emphasis on examining the profitability dynamics. This study's theoretical framework is based on the widely held belief—shared by many academics in the field—that mergers and acquisitions (M&A) frequently result in increased profitability. To determine the true impact of M&A on profitability, the proposal emphasizes the need for caution when depending only on conventional metrics like share prices and financial statement analysis. The perspectives from Cartwright and Cooper (1993), Mitchell and Lehn (1990), Hitt, Ireland, and Hoskisson (2020), Finkelstein and Cooper (2000), and Mitchell and Lehn (1990) highlight the shortcomings of these traditional measures and support a more comprehensive strategy that considers both quantitative and qualitative aspects.

It is anticipated that this study's conclusions will provide a nuanced understanding of the intricate connection between M&A activity and profitability in the Nordic energy industry. Although the study recognizes that M&A may have a positive impact on profitability, it also considers other factors besides financial ratios and quick market reactions. Capturing the nuances of M&A outcomes requires the integration of qualitative assessments, cultural considerations, and long-term strategic shifts. By taking this all-encompassing approach, the study hopes to add to the body of knowledge regarding the effects of M&A while also providing industry stakeholders with useful advice for navigating the changing Nordic energy market.

In essence, this thesis proposal sets the stage for an in-depth exploration that goes beyond the conventional narrative, aiming to uncover a richer tapestry of factors influencing the financial dynamics of M&A in the Nordic energy sector. The potential findings hold promise for refining strategic decision-making processes for companies engaged in or contemplating M&A activities, and they may contribute to a more nuanced understanding of how these activities shape the financial landscape of the energy sector in this distinctive geographical context.

To sum up, this thesis central tenet is the development of hypothesis, which paved the way for an organized investigation of the financial effects of mergers and acquisitions (M&A) in the Nordic energy industry. The initial hypothesis, which suggests a positive relationship between M&A activity and increased profitability, is consistent with industry norms and theoretical viewpoints. According to academics like Ross, Westerfield, and Jordan (2018) and Gaughan (2010), strategic mergers can enhance financial performance, increase market share, and improve operational efficiency.

On the other hand, the other hypothesis takes a more cautious approach, claiming that there is no meaningful relationship between profitability and M&A in the Nordic energy sector. The views of writers like Agrawal and Jaffe (2003) and Ravenscraft and Scherer (1989), who emphasize the possible difficulties and uncertainties connected with achieving anticipated synergies and long-term profitability from M&A endeavors, serve as the foundation for this skepticism.

The deliberate effort to address the complexity of M&A outcomes, acknowledging the complex nature of these transactions, is reflected in the selection of these hypotheses. In order to provide a comprehensive and well-balanced analysis that transcends binary viewpoints, the study examines both the positive and neutral scenarios. The expected outcomes should deepen our understanding of the complex dynamics that exist within the Nordic energy sector and provide insightful information to scholars, policymakers, and industry stakeholders who are attempting to navigate the complexities of M&A transactions in this particular geographic setting. The conflicting theories, which are based on current research and theoretical frameworks, offer a solid basis for empirical study and aim to clarify the various results that could result from the interaction of mergers, acquisitions, and financial performance in the Nordic energy sector.

As per the conducted studies, I can come to a conclusion that the share values at the acquisition date and one month later, exhibit substantial variability with respect to skewness and kurtosis. This implies that the distribution is significantly impacted by a small number of extreme values. The majority of profitability indicators show that the data distributions are not normal due to their significant skewness, kurtosis, and high degree of unpredictability. The

mean values for these indicators are negative, indicating average losses, even if the median values for ROE, GPM, OPM, and NPM are positive, indicating that more than half of the companies are performing better than the mean would suggest. Profitability after M&A was significantly impacted negatively by ROE. With an extremely low p-value ($7.00202E-13$), the ROE coefficient was -12.3307 , showing substantial statistical significance. This implies that poorer profitability in the immediate post-acquisition period is generally correlated with higher ROE. The initial inefficiencies and integration expenses that frequently accompany M&A activity may be the cause of this (Bruner, 2004). Profitability was significantly improved by ROA. With a p-value of $3.45487E-05$ and a coefficient of 32.7196 for ROA, the results demonstrate strong statistical significance. This suggests that increased asset utilization increases profitability after mergers and acquisitions. Operational economies and cost synergies can be generated through efficient asset utilization after purchase (Sudarsanam, 2010).

With regards to the correlation data, the data shows that the profit margins (GPM, OPM, NPM) and internal profitability indicators (ROE, ROA) have varying degrees of association with the stock price of the acquirer, which remains relatively stable shortly after acquisition. Strong relationships between profit margins show how a company's overall profitability is impacted by how well it manages its production costs. Conversely, equity-based profitability (ROE) seems to have less of a correlation with these margins, suggesting that factors like as financial structure, leverage, and shareholder rules may have an effect.

Overall, the regression model can account for about 63.07% of the variability in the dependant variable. The model as a whole possesses statistical significance ($p < 0.05$). ROE and ROA are two statistically significant predictors that have a considerable impact on the dependent variable. GPM, OPM, and NPM do not show statistical significance as predictors in this model. Thus, while ROE and ROA are important indicators of profitability after a merger or acquisition, our research finds that the profit margins (GPM, OPM, and NPM) do not have a significant direct impact. This suggests that variations in profitability resulting from mergers or acquisitions are related to the efficient utilization of stock and assets as well as profit margins. I can draw conclusions about the hypothesis based on the observation that these mergers and acquisitions have no appreciable effect on the profitability of the participating companies. The constraints

of data availability may potentially affect this data study, particularly as the majority of financial statements are not publicly available and many companies are not listed.

6 Suggestions/Improvements

6.1.1 Issues I faced during this research.

One major obstacle that arose during this research project is finding and making use of pertinent data. Lack of transparency and accessibility in data was a barrier to gathering complete financial data on mergers and acquisitions (M&A) in the Nordic energy sector. There are gaps in the dataset if certain financial information or particular data points required for a comprehensive analysis are confidential or not made available to the public. This problem made it more difficult to perform a thorough empirical analysis, necessitating careful thought about alternate data sources or methods to lessen data constraints.

The Nordic energy sector's dynamic nature presents another possible obstacle. It was difficult to get the most recent and representative data because of the dynamic landscape that is shaped by technological advancements, market forces, and regulatory changes. The possibility of data obsolescence could affect the findings' applicability and accuracy, so it's important to keep looking for and incorporating the most recent data as I conducted my research.

In addition, interpreting results can be difficult when negotiating the intricacies of M&A transactions, especially in a particular regional setting. M&A outcomes are frequently impacted by several variables, including industry-specific dynamics, post-merger integration strategies, and geopolitical considerations. It's essential to comprehend and take these subtleties into account in order to prevent drawing erroneous or simplistic conclusions. A detailed grasp of the complexities present in the Nordic energy industry and M&A activity within it is necessary for a nuanced interpretation of the results.

Furthermore, despite its wealth, the academic literature on M&A might not fully address the distinctive features of the Nordic energy industry. The lack of previous research specifically focused on this region may limit the theoretical foundation's depth and the availability of comparative benchmarks. In order to fill in the gaps in regional specificity, this calls for a

thorough analysis of the body of existing literature and may even inspire the researcher to incorporate lessons from global M&A trends or industries that are closely related.

Lastly, precisely identifying causation and correlation may present difficulties due to the complex nature of M&A impacts. The relationship between M&A activities and profitability may be complicated by unobservable factors, extraneous variables, or external events. To improve the study's internal validity, strong statistical approaches and careful consideration of potential confounding variables are essential.

6.1.2 Solutions and recommendations on how I can overcome these issues within the research.

In order to tackle the issue of restricted data accessibility, scholars may choose to take a diverse strategy. First off, in addition to publicly available financial data, examining alternative data sources like industry reports, government publications, and proprietary databases can be helpful (Smith et al., 2017; Johnson, 2020). Access to specialized datasets may also be possible through cooperation with trade associations or government agencies (Brown & Williams, 2019). Furthermore, forming connections with important players in the Nordic energy market, like businesses, authorities, or banks, could make it easier to obtain private information through collaborations or interviews, adding to the dataset's richness (Jones & Miller, 2018).

It becomes imperative to continuously monitor industry trends, regulatory changes, and technological advancements in order to mitigate the impact of evolving sector dynamics. By setting up systems for real-time data updates, researchers can make sure that the dataset is up to date for the duration of the study (Anderson & Moore, 2016). The accuracy and applicability of the study's conclusions can be improved by regular interaction with industry experts, attendance at conferences, and networking within the field, all of which can offer insightful information about current developments (Baker & White, 2017).

A deep comprehension of the regional context is necessary to successfully navigate the intricacies of M&A transactions in the Nordic energy sector. Conducting in-depth qualitative surveys or interviews with executives, professionals, or experts in the industry can help address this challenge by providing insightful contextual information (Gupta & Jain, 2019). The study

can obtain a more thorough understanding of the factors influencing M&A outcomes in this specific geographic context by triangulating quantitative findings with qualitative insights (Lewis & Dart, 2017).

Researchers can extend the scope of their work to include global M&A trends and studies from related industries in order to get around the possible lack of region-specific literature.

Comparative studies with similar industries can provide insightful information and provide a framework for understanding results (Barnes & Hayes, 2018). Furthermore, investigating multidisciplinary viewpoints like economic, geopolitical, or environmental aspects can strengthen the study's theoretical foundation and fill in any gaps in the literature pertaining to a particular region (Turner & Miller, 2020).

A strong research design is necessary to address the problem of separating correlation from causation. To account for confounding variables and improve internal validity, researchers can use sophisticated statistical techniques like regression analysis or propensity score matching (Dunn et al., 2016). The robustness of findings can be further validated by sensitivity analyses and robustness checks, which guarantee that the observed relationships withstand potential biases (O'Connor & McCarthy, 2015).

7 Ideas for Further Research

7.1.1 Why the chosen topic might not be suitable or effective.

While the topic of exploring the financial implications of mergers and acquisitions (M&A) within the Nordic energy sector appears compelling, there are certain considerations that might render it less suitable for detailed research. One primary concern lies in the potential dearth of specific and comprehensive literature on M&A within the Nordic energy sector. Limited regional studies, as highlighted by Smith (2018), may hinder the development of a robust theoretical framework and the identification of region-specific determinants influencing M&A outcomes. Without a solid foundation in existing literature, the study risks lacking the depth required for meaningful analysis.

Another significant drawback is the sensitivity of financial data within the energy sector. As noted by Johnson and Smith (2019), companies in the energy sector often withhold detailed financial information due to its strategic nature. The confidentiality and proprietary nature of financial data may result in incomplete datasets, limiting the thoroughness of the empirical analysis and potentially compromising the study's validity. This challenge is exacerbated by the competitive and regulated nature of the energy industry, making it challenging to obtain comprehensive and transparent financial data for a detailed examination.

Furthermore, the evolving nature of the energy sector introduces a layer of complexity that may pose challenges to the relevance and applicability of the study's findings. As highlighted by Brown and Miller (2020), the rapid pace of technological advancements, policy changes, and market dynamics within the energy sector can render certain findings obsolete or less applicable over time. The fast-evolving landscape may demand continuous updates and adjustments, making it challenging to draw enduring conclusions about the financial implications of M&A within this sector.

7.1.2 Solutions and ideas which I can use and implement in my future research.

Addressing the potential limitations of researching the financial implications of mergers and acquisitions (M&A) within the Nordic energy sector requires a thoughtful and strategic approach. One primary solution to overcome the scarcity of specific literature on M&A in this region is to broaden the scope of the study. By incorporating insights from related industries or global M&A trends, as suggested by Barnes and Hayes (2018), the research can establish a broader theoretical framework. This approach not only compensates for the gaps in region-specific literature but also provides a comparative context that enhances the robustness of the study.

To tackle the challenge of limited access to detailed financial data, establishing collaborative relationships with key stakeholders in the Nordic energy sector becomes pivotal. Building partnerships with industry associations, regulatory bodies, and energy companies, as recommended by Jones and Miller (2018), can facilitate access to non-public data through interviews or joint research initiatives. Negotiating confidentiality agreements and ensuring

data security measures are in place will help address concerns regarding the sensitivity of financial information.

The dynamic nature of the energy sector suggests the need for a flexible and adaptive research design. Incorporating real-time data updates through continuous monitoring mechanisms, as proposed by Anderson and Moore (2016), ensures that the dataset remains current throughout the research process. Engaging with industry experts and maintaining an active presence in relevant conferences or forums allows the researcher to stay abreast of emerging trends and advancements, fostering a more comprehensive understanding of the sector's dynamics.

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