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**The Impact of Board Gender Diversity on Firms'
M&A Activity:**

Evidence from Nordic Listed Companies

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ABSTRACT:

This thesis investigates the impact of board gender diversity on M&A activity of the Nordic listed firms in Denmark, Finland, Norway and Sweden between 2010 and 2022. Moreover, the purpose of this thesis is to investigate in more detail the association between board gender diversity, number of M&A transactions (acquisitiveness) and the deal size (transaction price) in euros. The prior academic literature has documented behavioral differences between genders in terms of their behavior under risk. Given that M&As are considered strategic activities that carry risk, the differences between genders can impact on the overall M&A outcome in both terms of the number of transactions, as well as the size of the transaction.

Despite the increased amount of attention, female representation among corporate boards is still relatively low globally. The change towards more diverse boards has already started within the firms in the EU, as the new regulation requires corporate boards to give at least 40% of seats in corporate boards to the underrepresented gender by June 2026. Nordic countries are considered as pioneers regarding gender diversity. In 2023 41% of board directors in the Nordics were women, and 47% of all new directors were women, which already exceeds the 40% requirement set by the European Union.

The main methodology to test the association between firms' board gender diversity and M&A activity for both hypotheses is Ordinary Least Square (OLS) regression. The regressions are run separately for each country to be able compare the results between the countries. In addition, all transaction prices are also converted to euros to make the results for the second hypothesis comparable as well. Results of this thesis are two-branched. Findings for the first hypothesis suggest that there is a negative relationship between board gender diversity and firms' M&A activity as measured by the number of M&A transactions. The results are statistically significant for all four Nordic countries, indicating that firms with more diverse boards tend to make less M&A transactions on average. Empirical findings for the second hypothesis suggest that there is a negative association between board gender diversity and M&A transaction price in all four countries. However, the results are statistically significant only in Finland, Norway and Sweden, indicating that firms with more women in boards tend to execute smaller M&A deals on average.

Going forward, the EU's new requirement regarding the proportion of underrepresented gender in corporate boards will open new research opportunities focusing on how the enhanced position of female board members impacts for example, to board competence, board selection process or the impact of increased board gender diversity on different corporate outcomes. It is also interesting to see if the new legislation will eventually result in increased number of individual female board members, or will certain individual females act as board members for several corporations.

KEYWORDS: Board gender diversity, Mergers and Acquisitions, Agency theory, Stakeholder theory, Gender quotas

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Abbreviations

CapEx = Capital Expenditure

CEO = Chief Executive Officer

CFO = Chief Financial Officer

CSR = Corporate Social Responsibility

ESG = Environmental, Social and Governance

EU = The European Union

LBO = Leverage Buy Out

M&A = Mergers and Acquisitions

NPV = Net Present Value

OLS = Ordinary Least Squares

RDT = Resource Dependency Theory

ROA = Return on Assets

ROI = Return on Investment

UK = The United Kingdom

US = The United States

1 Introduction

Gender diversity on company boards and its impact on firms' decision-making is reaching increasing amount of attention in academic literature. According to Chen, Leung, Song and Goergen (2019) the number of females in corporate boards in publicly listed companies both in the Nordics as well as world-wide is still relatively small, and hence the previous literature focuses more on gender diversity rather than straight on director gender. Furthermore, the number of female members on corporate boards has also remained low resulting in imbalance in gender diversity in firms' boards.

The imbalance between male and female board members has resulted in increasing amount of pressure among firms and legislators to devise expedients to correct the imbalance to become more diverse. To correct such imbalances, some countries have implemented binding quotas that require companies to include a certain number from the underrepresented gender in their board of directors (Ahern & Dittmar, 2012). Such quotas among publicly listed companies have already been implemented in Norway, which was the first country to require publicly listed firms to have minimum of 40 percent of the underrepresented gender to be represented in board of directors.

The change towards more diverse boards has already started within firms in the EU, as the new regulation requires corporate boards to give at least 40% of seats in corporate boards to the underrepresented gender by June 2026. Nordic countries have been historically known for their gender diversity. According to Nordic Spencer Stuart Board Index (2023), 41% of board directors in the Nordics are women, and 47% of all new directors are women, which already exceeds the 40% requirement set by the European Union.

Since the implementation of such gender quotas has started, research on the relationship between board gender diversity, firm performance and strategic decision-making is not only interesting but may also provide certain empirical significance. Previous studies (e.g. Terjesen et al. 2016; Ahern and Dittmar, 2012; Adams and Ferreira, 2009; Farrell and Herch, 2005) show mixed evidence about the association between board gender

diversity and firms' performance and strategic decision-making. For example, Terjesen et al. (2016) document a positive association between board gender diversity and firm performance. However, according to Ahern and Dittmar (2012), firms with board gender quotas requiring a certain percentage of women representation are associated with lower firm performance. In addition, Matsa and Miller (2013) suggest that the implementation of quotas can affect in the nature of board gender selection and thereby, impact board competence and strategic decision-making.

When discussing about firm's strategic decision-making, mergers and acquisitions (M&As) are key when a firm is considering corporate growth and restructuring. Previous literature suggests that M&As among other decisions made by the board are affected by the characteristics of the board (Cai, 2012; Defrancq, Huyghebaert & Luypaert, 2020). According to Poniachek (2018), a merger is defined as a combination of at least two firms, where the shares or assets of the target firm are also exchanged for acquirer's shares or assets. Acquisition respectively, is defined as restructuring where a firm takes ownership of another firm's or legal entity's shares.

As mentioned above, mergers and acquisitions among firm's other strategic decisions are affected by board of directors' characteristics. Those characteristics are typically related to the size of the board, number, age and gender of board directors, and level of independent directors' education (Liu & Wang, 2013). According to KPMG (2024), the number and volume of the deals made in Nordic countries has increased significantly during the last decade, although the activity can vary on year-to-year basis. However, there is still relatively little attention paid to board diversity in terms of M&As. Hence, studying the association between firms' M&A activity and board gender diversity appears to be relatively new field of study.

Despite the lack of research of the association between M&A activity and board gender diversity, there is still evidence about how women as board members can benefit firms in several ways. First, Bear, Rahman and Post (2010) report that female directors tend to

impact positively on firm's corporate social responsibility (CSR) level, which also positively affects the firm's reputation. Secondly, according to de Capo, Cimeno and Escot (2011), the decision-making skills of female board members are better compared to their male peers which can improve boards to make more rational and effective decisions. Moreover, Adams and Ferreira (2009) continue that having females as board members tend to improve the monitoring function of the board as female board members typically pay more attention to monitoring compared to their peers of the opposite sex.

Past literature has mostly focused on association between board gender diversity and firm risk and financial performance. Moreover, those studies are mostly focused on the US markets, and therefore it is also important to bring European context to the literature (Thomson Reuters, 2014). Hence, there is currently a gap in literature examining the board gender diversity and firms' M&A activity. The phenomenon of board gender diversity is also important in the context of mergers and acquisitions, because it provides evidence about the M&A performance of female-led firms for both researchers and different firms and legislators. Recent evidence also shows that female board representation matters: firms with female directors are associated with lower level of board overconfidence and less aggressive investment policies (Chen et al, 2019).

1.1 Purpose of the study

The purpose of the study is to investigate whether the board gender diversity impacts on M&A activity of publicly traded firms in the four Nordic countries during a twelve-year period between 2010 and 2022. More specifically, the aim is to study whether female representation among board members impact on firm's M&A activity as measured by the number of executed transactions and transaction price in euros.

Currently, there is a gap in literature investigating the relationship between board gender diversity and firm's M&A activity in Nordic countries. Most of the recent studies have focused on researching the association between board gender diversity and firm

performance. In addition to that, most of those studies are focusing US firms and their board diversity and characteristics. Hence, the objective of this thesis is to contribute to the current academic literature by studying whether the representation of female board members affects firm's M&A activity among listed Nordic firms.

This study will investigate the impact of female board member representation on firm's M&A activity in Nordic countries, namely Denmark, Finland, Norway and Sweden. Iceland is excluded from the thesis due to lack of observations. To evaluate the relationship between board gender diversity and firm M&A activity, this thesis evaluates Nordic M&A data collected from Refinitiv Eikon database. Data and methodology are set more detailed in chapter five.

The hypotheses of this thesis are developed based on existing academic literature investigating behavioral differences between genders. Those differences in gender behavior are usually linked in behavioral biases, such as overconfidence and risk aversion. Several research argue females to be less overconfident and more risk averse compared to males. Thereby, as merger and acquisition processes can be considered to be risky and difficult, the representation of female board members may directly affect firm's M&A activity, such as the number of deals made or the deal size (Croson & Gneezy, 2009).

Overconfidence is typically linked to tendency towards increasing risk-taking and worse financial decision-making (Ferris, Jayaraman & Sabherwal, 2013). In the context of mergers and acquisitions, female board members are found to show tendency towards being less overconfident and hence do not typically overestimate the possible merger gains. According to Ahmed, Song and Elsayed (2022), this can also result in lower M&A activity among the firms with higher female board representation. Hence, the first hypothesis of the thesis is defined as:

H₁: Higher female board representation results in lower M&A activity as measured by the number of transactions.

Similar differences in female board members' risk aversion and level of overconfidence can also affect the size of M&A deal. As female directors and board members are documented to be less overconfident and more risk averse, it can lead firms to acquire smaller and domestic targets, as suggested by Ahmed et al. (2022). Furthermore, Levi et al. (2014) prove greater female board diversity reduces the probability of undesirable organizational outcomes, such as financial frauds. Thereby the second hypothesis of the thesis is defined as:

H₂: Higher female board representation results in lower size of M&A deals as measured by the transaction price in euros.

1.2 Structure of the study

The structure of this thesis is presented as follows. The first chapter serves as an introduction for this thesis. It introduces the topic, hypotheses, objective and purpose of the study. Second and third chapters cover the theoretical framework of the study. The second chapter discusses theories about corporate governance, introduces agency and stakeholder theories, and provides a review about the board gender diversity in the Nordic countries. The third chapter presents theoretical background of mergers and acquisitions including discussion about the types of M&A, motives behind the possible transactions, and the factors behind a successful acquisition. The fourth chapter discusses the past literature and provides evidence about the prior empirical findings regarding the topic. The fifth chapter describes the data and methodology chosen for the study. Empirical findings are presented in the sixth chapter and its subchapters. Lastly, the final chapter is for conclusions and further research ideas.

2 Theoretical framework

The next two chapters cover the theoretical framework of the topic. This chapter discusses theoretical concepts of corporate governance and board of directors, and introduces different theories linked to organizational relations, such as agency and stakeholder theories. In addition, this chapter provides theoretical framework about the current landscape of Nordic corporate boards as well as provides theories about why the female representation in boards is lower compared to males.

2.1 Board of directors and corporate governance

Corporate governance covers and manages mechanisms that protect the interests of firm's stakeholders. Such stakeholders typically include equity holders, creditors, and other stakeholders, such as employees, consumers and the government (John & Senbet, 1998). Typically, the firm ownership and control are separated from each other in the market economy. Hence, the fundamental reason for corporate governance in that context is the control of management by stakeholders. During the recent years, there has been an on-going re-evaluation of the practices related to corporate governance (Alexanridis, Antypas & Travlos, 2017). The re-evaluation of such governance practices has led not only to mandatory changes but has also urged boards towards more voluntary diverse board practices. According to Naciti (2019), such practices include also considering women, when selecting board of directors.

The role of board of directors is important when considering firm's structure and strategy. For example, the board is responsible for major strategic and economic decision-making of the firm. Furthermore, it also has a mandate to oversee and monitor the firm's management. Especially in the context of corporate governance, the monitoring role of the board becomes essential as it plays a key role in protecting the advantages of firm's share and stakeholders (Molz, 1985).

As the monitoring role of board of directors is highlighted in the context of corporate governance, it is notable to discuss the recent changes in corporate governance related to board of directors. According to Mallin (2016), the changes in corporate governance require boards to have a majority of their directors with no other connection to the firm than their board representation. Prior literature proves that directors with no other connection to the firm tend to strengthen the boards. For example, according to Petra (2005), so called outside directors typically strengthen the board and corporate governance, as they bring an unbiased perspective to the boards' decision-making process, and act in key role when ensuring accountability and transparency within the firms.

Prior research suggests that board gender diversity is beneficial for firms' corporate governance. For instance, Adams and Perreira (2009) find that female board members enhance corporate governance, as they tend to think more independently, improve the managerial accountability as measured by board meeting attendance, and are less affected by behavioral biases such as overconfidence. Moreover, Vähämaa (2017) also promotes the importance of female directors on corporate governance. According to her, firms with either female CEO or CFO have higher quality governance practices. In addition, she continues that firms with female CEOs have a major impact on the governance attributes, and thereby strengthen also the overall corporate governance.

2.2 Agency theory

When discussing corporate environment, it is typical that owners and managers of the business are separated from each other. This may cause so called agency problems, which agency theory tries to reduce and describe. Agency theory suggest that conflicts raise when business principals mandate another person (agent) to work and make business-related decisions on behalf of them (Ross, 1973). Such conflicts are also referred to as principal-agent problems, and are explained as behavior where the agents act in a way that maximize their utility rather than principals'. This may also result in agency costs (Ang, Cole & Lin, 2007).

Agency costs arise when the interests of agent conflict with owner's one. Certain costs raise as agents (managers) constantly try to utilize organizational resources to generate their own benefits instead of focusing on maximizing the shareholder value. Typically, the managers of firms are best aware of state of the company and simultaneously, have more detailed view of firms' daily operations compared to firm's shareholders (Ang, et al. 2007; Jensen, 1986). Agency costs significantly affect firm's strategical decision-making, such as investment and financial decisions, and throughout them on firm performance. (Leland, 2002).

Jensen (1986), suggest managerial ownership as a potential solution to resolve the conflict of interests between shareholders and managers. Managerial ownership is defined as a situation where firm's management that actively participate in corporate decision-making hold certain percentage of firm's shares. However, even if being proposed to be a solution to agency problems, there is mixed evidence about the usefulness of managerial ownership on firm performance. On the one hand, Jensen and Meckling (1976) suggest that there is a positive association between managerial ownership and firm performance, as the alignment of the interests between principals and agents reduce agency costs. However, on the other hand, Stulz (1988), proves that managerial ownership may decrease the firm value, because managerial ownership can cause managers to be more entrenched and less subjected to the discipline of the market.

Agency theory has been documented as one of the theories underlying the hypothesis that more diverse boards can increase firm performance. Diverse firms' internal bodies, for instance, corporate governance is documented to decrease the amount of agency costs, and thereby leading to better firm performance as well (Poletti-Hughes & Briano-Turrent, 2019). Moreover, Adams and Ferreira (2009) continue that the corporate boards act in key role in corporate governance, as they try to align the interests of firms' employees (managers) and shareholders, and hence reduce the agency costs.

In the context of mergers and acquisitions, the conflicts between principals and their agents may not only occur between them but can also arise along the transaction process, as both the acquirer and investment bankers are representing their own interests. According to Kesner, Shapino and Sharma (1994), the role of the investment bankers in mergers and acquisitions is reduce the uncertainty between the deal parties. However, they continue that the bankers may utilize certain information asymmetry between deal parties which typically results in worse outcome relative to deal parties but is beneficial for the intermediary.

2.3 Stakeholder theory

Stakeholder theory was first introduced by Robert Freeman in 1984. Stakeholder theory argues against traditional financial theories that suggest shareholder wealth maximizing to be the primary objective of firms. According to theory, instead of wealth maximizing, firms should consider all its stakeholders in its operations and decision-making. In the context of the theory, stakeholders are considered to be all individuals or entities having a stake in the firm. More specifically, this includes e.g. firm's employees, suppliers, customers and other entities such as investors and governments (Freeman, 1994).

Stakeholder theory suggests that firms can create value by also including interests of non-stockholding groups into firm's decision-making. According to Freeman (1984), this means that firms' managers should take into account also the non-stockholder stakeholders, that can impact the performance of firm. More specifically, Freeman (1984) suggests that the decision-making power should be given from the stockholders to stakeholders, making them main beneficiaries.

Despite being a well know and recognized theory in addressing unethical and irresponsible behavior among certain firms, stakeholder theory has also received criticism. For example, Madden and Stevens (2024), argue that stakeholder theory lacks clear objective function when transferring decision-making power to stakeholders. Furthermore,

Stieb (2009), explains that even if the theory suggests that the power of decision-making should be transferred to firm's stakeholders, it does not directly take a stand on how much should the stakeholders make decisions. Lastly, Philips, Freeman and Wicks (2003), continue that one main issue of the stakeholder theory is the lack of empirical evidence of its practicality.

Stakeholder theory is also applicable in the context of board gender diversity. According to Centinaio (2023), diverse boards can enhance the engagement of stakeholders, ensure equal decision-making, as well as promote long-term sustainability, and hence, create value not only to firm's shareholders but also to its stakeholders as a whole. This, according to Centinaio (2023), provides a strong conceptual foundation for understanding and advocating board gender diversity.

2.4 Overview of board gender diversity

Board gender diversity describes the representation of male and female on the board of directors. Typically, the board gender diversity is reported as a percentage of female directors in the board, as they have historically been at the minor position compared to males on corporate board positions. As the study focuses on board diversity in Nordic listed firms, next chapters introduce the current outlook of board gender diversity in the EU and further in the Nordic countries. In addition, the chapters discuss theories related to organizational relations and their link on board gender diversity.

2.4.1 Current landscape of board gender diversity in the EU and Nordics

One of the most clicked headlines of Davos' 2020 World Economic Forum was "Goldman Sachs will not take companies public if they all have so called all-male boards". However, despite the increasing amount of attention, female board representation has been historically on lower level compared to their male peers' representation. During the recent

years, firms in the EU area have faced pressure to take actions towards more diverse boards, caused mostly by increased attention among news, regulators, investors and in firms themselves. This chapter discusses the board gender diversity in the EU and Nordics.

Due to the increasing amount of attention during the past years, firms in the EU have been forced to take actions towards more diverse corporate boards, which has also increased the representation of female board members. As presented in the figure 1 below, the average female board representation has increased from c. 14% in 2015 to c. 19% in 2020. According to Rahi (2024), this kind of development is important for corporates, as females as board members can offer specific functional expertise that their male peer cannot.

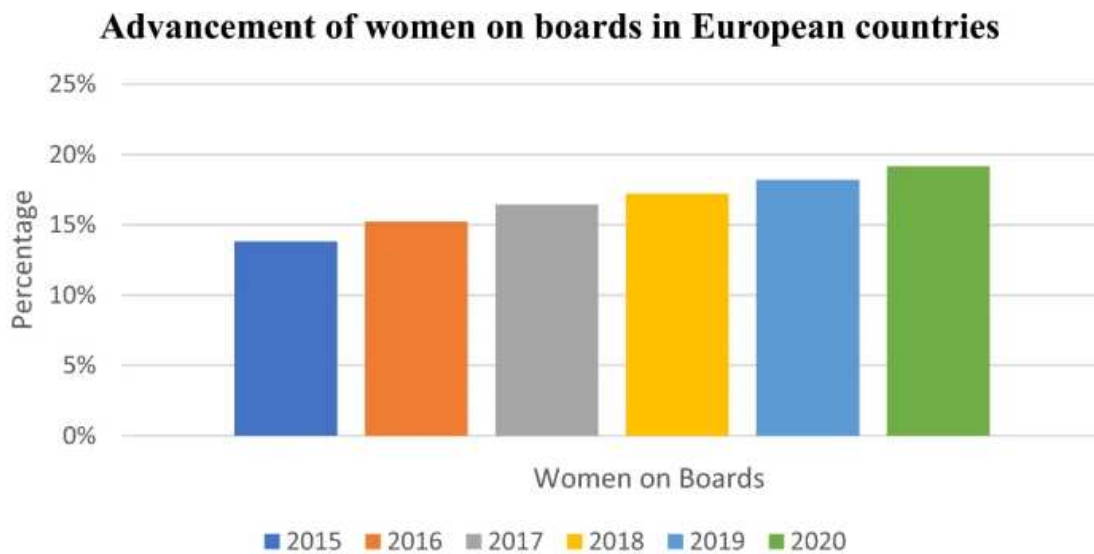


Figure 1. Advancement of women on boards in European countries (Rahi, 2023).

Furthermore, similar development towards more diverse corporate boards has continued from 2020 onwards. In 2022 the European Parliament accepted a new EU law that requires companies to include a minimum of 40% of their non-executive director positions to be held by genders that are underrepresented by the end of June 2026. The

same proportion can also be 33%, if the firm decides to apply the objective to both executive and non-executive directors (European Commission, 2022; PwC, 2022).

Despite the positive development of board gender diversity in the EU, there are still major differences in board gender diversity among the boards of European listed firms, as can be seen from the figure 2 below. According to European Women on Boards (EOWB) (2024), countries that have made the biggest steps towards the board gender diversity, have done so with new legislation and non-binding guidelines, whereas those countries that lack of action towards the diversity issues seem to fall behind in the level of board gender diversity. Furthermore, EOWB (2024) pinpoint that firms need to take a concrete action towards more diverse boards to not prevent it to stay at “box-ticking” exercise.

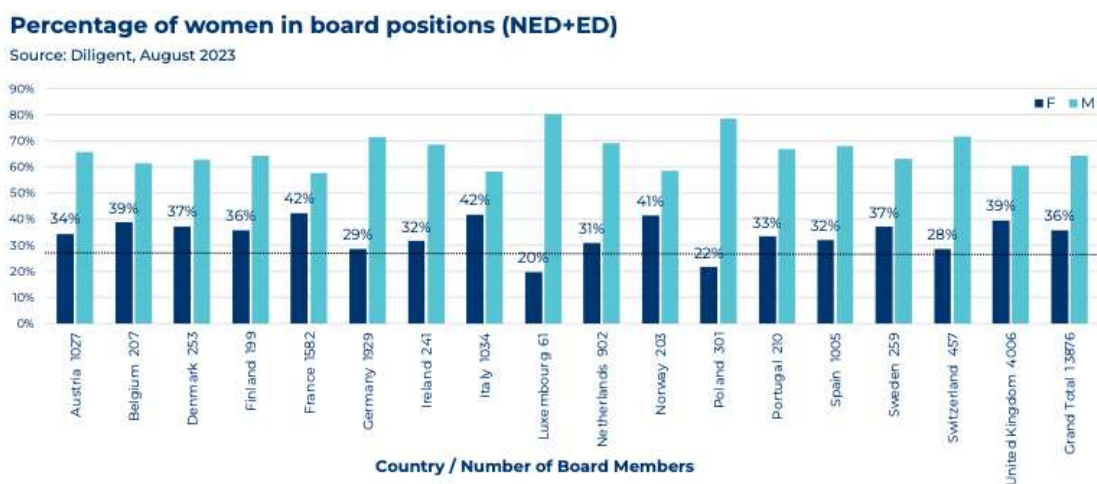


Figure 2. Diversity on European boards (EWOB, 2024).

One perspective to examine the differences between board gender diversity between countries is to do it through quotas. According to European Commission (2022), gender quotas are used by countries to balance the representation of women in places or seats to be filled, such as in board rooms. Guardian (2022), divides gender quotas into three: binding quotas, soft quotas and no quotas. At the end of 2022, totally 7 (Austria, Belgium, France, Germany, Greece, Italy and Portugal) out of 27 EU countries had decreed mandatory gender quotas requiring certain proportion of underrepresented gender. As

can be seen from the figure 3 below, the mandatory gender quotas have also resulted to increased representation of females on corporate boards throughout the years. The countries with binding quotas have had circa 40% women representation in 2022, whereas the representation of women in corporate boards has been circa 18% when the country has no quotas about gender diversity.

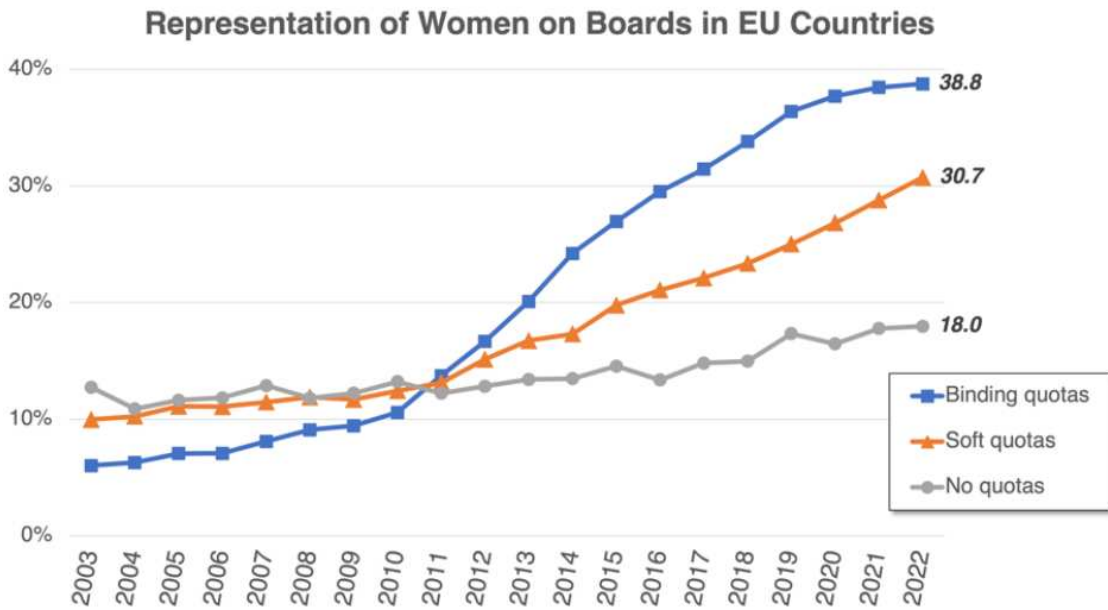


Figure 3. Percentage of women on boards for EU member countries, broken down by type of gender quota (Forbes, 2022).

Nordic countries have been considered as pioneers when discussing board gender diversity. In 2003 Norway was the first country in world to adopt a gender quota to require public limited companies' boards to comprise a minimum of 40% of directors to be each sex starting from 2006 (Khatri, 2022). Figure 4 below shows that Norway has had the highest women representation in corporate boards among all Nordic countries, followed by Sweden, Finland and Denmark.

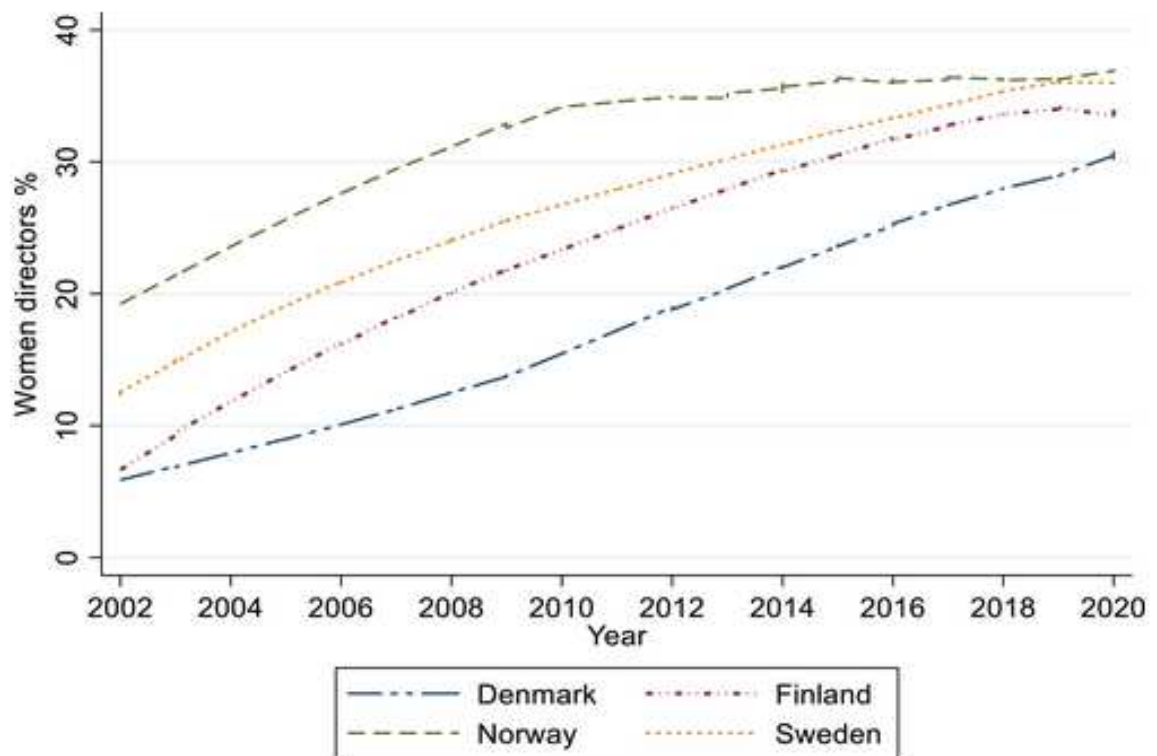


Figure 4. Board gender diversity in Nordic firms (Khatri, 2022).

Prior literature finds several reasons behind the high level of board gender diversity in Nordic countries. For instance, Torchia, Calabro and Huse (2011) suggest that the primary reasons behind the high women representation in Nordic corporate boards have been the quotas and legislation, social and supportive infrastructure and cultural attitudes. Alongside Torchia et al. (2011), also Khatri (2022) finds similar reasons behind the high level of board gender diversity. According to him, the biggest driver for higher board gender diversity among Nordic firms has been the legislative quotas, which have been implemented into Nordic countries' legislation. In addition to quotas, Khatri (2022), mentions things like cultural commitment to gender equality and government and institutional support as things which have fostered diversity among Nordic corporate boards.

2.4.2 Resource dependency theory

Resource dependency theory (RDT) describes how companies depend on external resources, such as financial, physical and information-related resources to survive in its environment. According to the theory, companies need continuously to recognize external factors impacting organizational behaviour in order to maintain its position in competitive environment (Terjesen, Sealy & Singh, 2009). Furthermore, Hillman et al, (2009) continue that despite the agency theory has been a driving theory explaining the performance of corporate boards, the resource dependency theory has also been used among board characteristics studies. More specifically, even if being less used, it has been argued to be more successful in explaining the performance of corporate boards.

Resource dependency theory suggest that diverse boards should benefit firms. Reguera-Alvarado, de Fluente and Laffarga (2017) find that resource dependency theory characterizes diversity as directors' capability to strength relationships with competitors and customers, deepening industry knowledge, and improving access to financial resources. This, in turn, boosts critical resource acquisition, leading to improved firm performance. Additionally, resource dependence plays a crucial role in securing external funding for companies without access to capital markets. Hence, firms should benefit from the diverse boards.

Resource dependency theory provides also explanations on why companies would benefit from executing a merger or an acquisition. According to the theory, a firm can reduce direct competition and hence, reduce dependencies by merging with its competitor, or on the other hand, manage interdependences throughout a carve-out of certain operations. Moreover, Hillman et al, (2009) continue that mergers tend to be typical especially among companies that have a certain dependency on another. In addition, the probability of a potential transaction is found to be increasing as the magnitude of dependency increases.

2.4.3 Critical mass theory

Critical mass theory was introduced by Thomas C. Schelling in 1978. According to theory, after a defined level, named as critical mass, is reached among the subgroup, their influence increases. In the context of diversity, this means that when the number of female directors reaches the critical mass, it is shown as a positive impact on firm's group integrations and cohesion. Moreover, when the proportion of minor group increases, it results in increased trust, which is considered as the main benefit from the resources that women bring to the firm (Kanter, 1977).

Critical mass theory is often applied in discussions of board gender diversity. Joecks, Pull and Vetter (2013) provide evidence about the association between critical mass and firm performance. According to them, diversity impacts firm outcomes only when critical mass of 30% is reached. Torchia, Calabrò and Huse (2011) provide similar evidence on women directors' importance on firm's strategic decision-making. According to them, a presence of three or more women significantly enhances board decision-making, impacting also firm performance.

In the context of critical mass theory, the concept of tokenism is also often discussed. According to Kanter (1977) tokenism is defined as a phenomenon where an entity is making only a symbolic effort to appear inclusive by including only a small number of people from the minor group, in the context of this study, female board members. The concept is important in the context of board gender diversity, as firms may try to include only one female in their board in order to make only a symbolic effort when discussing firm's diversity. According to Terjesen et al. (2009), the impact of adding only a one female director is not highly influential, as her opinions may not be taken into account similarly compared if the number of female directors would be, for instance three.

3 Mergers and acquisitions: an overview

This chapter introduces the topic of merges and acquisitions. It begins by introducing a theoretical framework of M&A process, including the introduction of merger waves, motives behind the possible transactions and different types of M&A deals. In addition, the behavioral foundations and information asymmetry among mergers and acquisitions are discussed to link theories about gender diversity and M&A activity together.

3.1 Merger waves

Alongside traditional economies, also M&A activity is documented to be cyclical. However, in the context of mergers and acquisitions this cyclicity is referred to as merger waves. Previous literature has documented a total of six merger waves between 1980 and 2020, as the first wave occurred in the 1980s, and with the latest ending due to the financial crisis (Brealey, Myers & Allen, 2017). Gaughan (2015) suggest that majority of merger waves follow the pattern of the sixth wave. When the overall economic development favorable, it also results in increasing M&A activity.

Even if mostly following a similar pattern, there are still varying characteristics among merger waves. According to Gaughan (2015, pp. 42-47), first two merger wave periods (1897-1904 and 1916-1929) were characterized by both horizontal and vertical mergers, meaning that firms that either operate in similar sector, or firms that provide similar services on the same supply chain merge together. During the third wave (1965-1969), firms started to acquire firms across other industries, followed by the fourth wave where the use of debt financing became more general, as the number of leverage buyouts (LBOs) increased. Furthermore, Gaughan (2015) continues that characteristics for the fifth wave were the large transactions and increase in cross-border deals. The figure 5 below presents the number and volumes of M&A deals during the six waves in the Nordic countries.

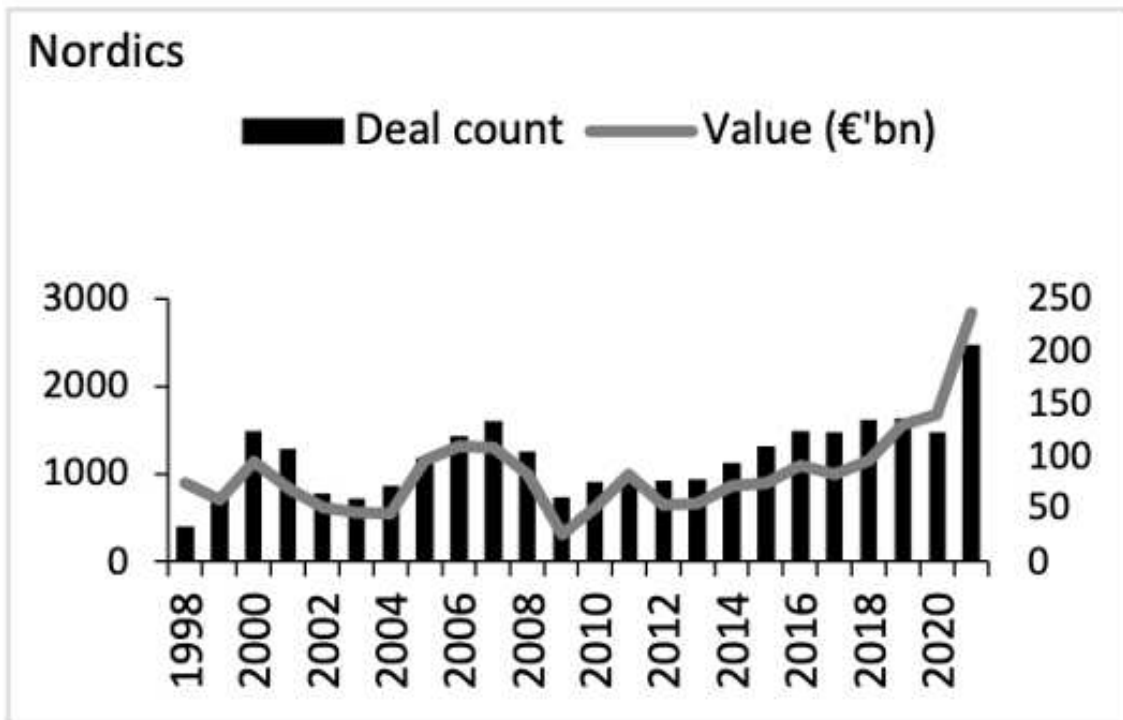


Figure 5. M&A deal count and volume in the Nordics (Bloomberg, 2024).

Prior research provides various explanations for merger waves. Harford (2005) finds that merger waves are resulted from various shocks related to economy, regulatory and technology. According to him, such shocks can be a result of changes in the competition legislation, introduction of new technology, or increase in capital liquidity. Together, those shocks have resulted in industry-wide merger waves. Moreover, as the number of M&A deals increases simultaneously across industries, it leads to even larger merger waves.

Martynova and Renneboog (2008) finds similar reasons behind the merger waves. Alongside Harford (2005) also they suggest that merger waves are preceded by certain industrial or economic shocks. They also add that merger waves tend to occur when both political and economic environment are developing positively (i.e. post-recession), and thereby the deals that take place in the end of each wave are typically driven by non-rational and self-interested managerial decision-making rather than the economic environment.

Alexandridis, Mavrovitis and Travlos (2012) propose the incorrect valuation of assets as a one potential reason for M&A activity. According to them, when assets are considered to be overvalued, takeover offers reflect more precisely the expectations of target management, which increases the probability of successful deal. Respectively, when the assets are undervalued, increases the probability of that the takeover bid is considered to be sufficient.

3.2 Motives for Mergers and Acquisitions

Typically, firms may have several reasons when considering the probable merger or acquisition. Prior academic literature finds synergy benefits and diversification as the most appropriate reasons for firms to carry out the M&A deal. Gaughan (2015, pp. 159-177) suggests the taxation, investments in capital expenditures (CapEx) and research and development (R&D), as well as improved management as other considerable reasons for firms' M&A willingness.

Even if the principal motives behind every acquisition vary between firms, the underlying idea beyond them remains the same. According to Gaughan (2015), the potential M&A deal should be executed only when the combined value of merged firms exceeds their pre-merger valuation. However, this is not always the case. Several deals are first documented to increase the efficiency or profitability but might still destroy value as time goes by. Hence, majority of the prior literature categorizes the motives behind mergers and acquisitions as either value-decreasing or value-increasing (Nguyen, Yun & Sun, 2012).

3.2.1 Value increasing theories

As discussed above, the prior literature documents synergy benefits and diversification as firms' main motives behind the M&A deals (Gaughan, 2015; Berkovitch & Narayanan,

1993). The possible synergy benefits are based on assumption that firms will achieve financial gains throughout the mergers, as they consolidate assets. Since the bottom target of the firms is to maximize their shareholders' wealth, such value creating, and synergy-increasing acquisitions should benefit both the target and acquirer companies (Berkovitch & Narayanan, 1993).

Previous literature argues whether the value destroying deals would not exist if the synergy benefits were the only reason for mergers and acquisitions. According to Gaughan (2015, pp. 136-138), synergy gains are divided into two categories: financial and operational gains. Financial gains are resulted for instance, from the decreased level of cost of capital gained from the deal, whereas the increase in sales revenue or decrease in operating expenses are an example of operating synergies.

Beside creating profits for shareholders firms are also expected to generate continuously revenue growth. However, operating in constantly maturing markets and industries can make it difficult for firms to generate internal growth after the certain stage of recurring revenue is achieved. Hence, a diversification into alternative markets or products can be considered a possible strategy for the firm. Gaughan (2015) suggests the international expansions as one possible strategy to gain growth through a diversification. According to him, as firms seek growth by expanding into new markets, it increases the predictability of the existing business, and simultaneously, makes the firm less dependent on one market's development. He continues, that the same principle holds also when the firm consider diversification for instance into new services and products, and hence, he suggests mergers and acquisitions to be the fastest and low risk strategy when seeking increase in growth and value.

Trautwein (1990) presents several value increasing theories about the motives behind M&A activity. First, alongside Gaughan (2015) he also finds the synergy benefits as the main motive behind M&A transactions. More specifically, this efficiency theory proposes that M&As are executed to gain synergy benefits, which benefits shareholders and hence,

also increase the firm value. The second theory supporting the value increasing hypothesis is called valuation theory. It suggests that firms' managers would decide to carry out a merger if their information of the target is more precise compared to stock market and increase the economic gains by executing the deal. Moreover, Trautwein introduces the third theory suggesting that divestments result in value increase, as those typically reduce risk, improve capital allocation and provide managerial benefits which together increase the overall value gained from the M&A deal.

Furthermore, Mukherjee, Kiyamaz and Baker (2004) study the main motives behind mergers and acquisitions through the survey of 75 firms' CFOs. They find that the primary reason for divestments is to gain value by reducing losses, when the demand of firm's products decreases. According to them, as the divestments are made to reduce losses, it will improve firm's competitive position, decrease the probability of bankruptcy and increase the efficiency among resource allocation. Moreover, they find that diversification may decrease firm's cost of capital, since the company is considered less risky in the eyes of investors.

3.2.2 Value decreasing theories

Gaughan (2015) suggests that firms should execute the M&A transaction only if the combined value of merged companies is higher compared their pre-merger valuation, and thereby increase value. However, Shleifer and Vishny (1989) disagree such value increasing theories and argue that the primary reason for M&A deals can be found behind managers' personal objectives, which is also linked with agency theory. This theory of improved management (also referred as the agency motive) simply suggest that the managers of firms only execute transactions to increase and achieve their own benefits and objectives.

Furthermore, Gaughan (2015) continues that the managers are more willing to execute deals where the target company operates in industry from which the manager has

expertise on. Also, Berkovich and Narayanan (1993) support the agency motive behind transactions. According to them, acquirer firms' management is more probable to carry out transactions to rather emphasize their worth and proficiency to shareholders rather than execute deals that are likely to create value.

Roll (1986) has introduced another theory among value-decreasing theories in mergers and acquisitions, named as hubris hypothesis. According to the hubris hypothesis, acquisitions are a result of target's overvaluation made by acquirer firm's management. The inaccuracy in target valuation is typically result of the pride of the management rather than lack of management competence. According to Roll, when the hypothesis holds, the actual acquisition prices tend to be significantly higher compared to firm's current market valuation.

Also, Trautwien (1990) among other studies presents monopoly theory as one potential value-decreasing theory in the context mergers and acquisitions. The theory suggests that transactions are carried out to achieve market power, and hence create value and get more economic gains. However, if the possible deals get challenged or cancelled for example due the new competitive position that the acquisition would generate, it has documented to decrease firm's share price. The relevancy of monopoly theory has been argued. First, if the theory holds, the announcement of deal cancellations should impact the share prices of acquirer's competitors. However, according to Jensen (1984), this is not in every case. Second, the monopoly is argued, since it is not applicable for all merger types.

3.3 Types of mergers and acquisitions

When the acquirer has identified the motives for the possible transaction, the process is continued by target screening which purpose is to identify the potential target firms. Current literature classifies mergers into three different categories, horizontal, vertical and conglomerate mergers. Horizontal deals happen when both the target and acquirer

companies operate within the same industry. Hence, when horizontal mergers occur reduces it simultaneously to the industry's stage of competition as the number of firms operating in the industry decreases. Horizontal mergers are rare especially in the Nordics, because of the current competitive legislation. For instance, regulators may challenge or cancel deal, if the transaction would create a significant market power for the new consortium of companies (Finnish Competition and Consumer Authority, 2024; Gaughan, 2015).

Vertical mergers happen within the firm's supply chain. When a firm is considering a vertical merger, it tries to achieve advantage by expanding its current operations by merging with a firm which operations and strategy it already has a certain knowledge of. Typically, a vertical merger between two firms occurs when the firms operate within the same supply chain. If being successful, vertical mergers typically improve firm's operational efficiency, increase revenue and reduce the costs of production (Kedia, Ravid & Pons, 2011).

The third merger class is named as conglomerate mergers. Unlike in horizontal and vertical mergers, conglomerate mergers occur between firms operating in different industries or in different geographical locations. More specifically, the conglomerate mergers are divided into two types: pure and mixed mergers. Pure conglomerate mergers occur between firms that have nothing in common, they operate at different markets and operate in different geographical locations. On the other hand, mixed conglomerate mergers occur when a firm is considering an expansion to new geographical location to extend its products to new markets (Gaughan, 2015). According to Brealey et al. (2017) all the three merger types are suitable in both domestic and cross-border transactions. However, they find that acquirers typically prefer either horizontal or vertical transactions in both domestic and cross-border transactions.

3.4 Information asymmetry among M&A

Information asymmetry is documented to be one of the key issues among merger and acquisition process. Draper and Paudyal (2008) define information asymmetry as situation where there is a different amount of information available among different parties, and hence entities possess different amount of information. According to Aboody and Lev (2002), information asymmetry can occur in two ways: between a firm and the market, as well as between insiders and outsiders. Firstly, information asymmetry between a firm and the market appears in situations, where the firm itself has more information for example, of its internal operations or upcoming strategic changes than external investors in the market. Information asymmetry between insiders and outsiders, respectively occurs when company insiders, such as board of directors have better knowledge e.g. about firm's financial health compared to outside investors or shareholders. This, according to Aboody and Lev (2000), can lead to situations, where insiders can benefit from their private information for example, through trades.

In the context of M&As, information asymmetry is referred to as difference in information possessed by the parties of the transaction, defined as buyer and the seller. This gap in information between the parties of the potential transactions may be crucial for the buyer, as it have only a limited amount of information of the target. To reduce the information asymmetry, the buy side typically execute a comprehensive analysis of the target company, named as due diligence process. Due diligence is typically done before the potential M&A transaction to help the buyer to understand the potential risks and benefits of the deal, and hence, helps the buyer decrease the level of information asymmetry between the deal parties (Deloitte, 2021).

Boeh (2011) suggests that information asymmetry exists among every M&A transaction but the strength of it varies on case-by-case basis. According to him, cross-border transactions typically involve higher level of information asymmetry, for instance due to difference in financial reporting standards. Furthermore, he continues that the higher level

of information asymmetry leads also towards the higher transaction costs, which should also engage firms to make actions towards reducing those costs.

3.5 Behavioral foundations among Mergers and Acquisitions

As discussed in the second chapter, the majority of traditional finance theories, such as agency theory are based on assumption of rationality. It means that when individuals are making decisions, they act rationally, have all information available and based on the available information, make rational decisions to maximize their utility. However, unlike traditional theories assume, human nature is documented to be irrational and affected by intrinsic factors, such as behavioral biases (Shiller, 2000).

Despite usually being highly educated, the same behavioral biases affect also directors sitting in the corporate boards and hence, through directors, also firm's strategic decision-making. Previous literature about behavioral finance finds that males are more sensitive to certain biases compared to females. For instance, Bogan and Just (2009) suggest overconfidence bias to be one of the common factors explaining directors' willingness to pursue mergers. In addition, Datta, Datta and Raman (2001) find that the risk aversion of firm directors may impact firms' M&A activity.

Prior academic literature (e.g. Bogan & Just, 2009; Datta, et al. 2001; Thelisson & Meier, 2022) suggests managerial overconfidence and risk aversion to be among the most affective behavioral factors when investigating firms' strategic decisions, such as mergers and acquisitions. The concepts are important in the context of this study, as the prior literature finds females to be less sensitive to certain behavioral biases, impacting also the size and number of M&A deals made. The concepts of managerial overconfidence and risk aversion are discussed in the next chapters.

3.5.1 Managerial overconfidence

Overconfidence one of the most documented behavioral biases in financial literature, impacting the individuals' decision-making. According to Twardawski and Kind (2023) overconfidence is defined as a behavior where one has excessive beliefs in his/her abilities or knowledge. It has also frequently been associated with self-attribution bias, which occurs as a tendency to credit successful decision outcomes to one's own actions while attributing unfavorable outcomes to external factors.

As discussed above, males are argued to be more sensitive towards being overconfident compared to females due to male's higher level of self-attribution. According to Barber and Odean (2011), the main reason behind difference in the level of overconfidence between males and females is not necessary that females would be less confident compared to their male peers, but males may be overconfident about their skills and knowledge in certain cases.

Barber and Odean (2009) suggest that overconfidence can appear in two different forms. In the first form, overconfidence is shown as precision of beliefs about the potential uncertain events in the future, which females typically tend to estimate more precise compared to their male peers. The second form of overconfidence appears as the expectation of the future events differ between women and men. According to Barber and Odean (2009), females show tendency towards thinking less favorable outcomes compared to males. This, according to Melmender and Tate (2009), can cause difference in firm's strategic decision-making, such as considering potential merger or acquisitions, depending on whether the director is male or female.

Alongside the majority of prior academic literature, also Twardawski and Kind (2023) argue women to be less overconfident compared to men, applying also to women in corporate leadership positions. According to them, the lower level of overconfidence among women appears as unwillingness and delicacy towards risky and difficult

decisions, which they find to be a primary reason behind the willingness of man towards executing M&A deals.

Huang and Kisgen (2013) find similar evidence about the higher level of overconfidence among male directors compared to their female peers. However, according to them, the lower level of overconfidence among female directors can be a positive thing, as they may avoid M&A transactions due to their underestimation of the potential transactions' net present values (NPVs). Furthermore, they continue that the more overconfident male directors may execute more transactions compared to their female peers as their higher level of overconfidence can lead them to undertake transactions, as they tend to overestimate the NPV of the investment. However, there are also other behavioral factors impacting executives' willingness to execute a M&A deal, with one of them being the level of risk aversion.

3.5.2 Risk aversion

Prior academic research also provides evidence that there are differences in risk preferences between males and females. Moreover, those preferences typically differ for different reasons. Such differences in risk preferences between individuals are described in the concept of risk aversion. Risk aversion defines how different individuals act as they face a certain level of uncertainty. In other words, an individual who is more risk averse, tends to prefer the situations which are more predictable and simultaneously tries to avoid situations with the potential uncertain outcome (Kimball, 1993).

Avinadac, Chernonog and Perlman (2017) suggest that the differences in emotional reactions between genders in risky situations is a key factor explaining the different behavior between males and females in their risk behavior. According to them, females tend to experience emotions significantly stronger compared to males, impacting their decision-making. Furthermore, they demonstrate that females are documented to be more

nervous and fearful of the potential outcome compared to males causing them to be more risk averse under the riskier situations.

One well documented explanation for the difference in females' and males' risk behavior is called as Lehman Sisters hypothesis. The hypothesis became known after the 2008 financial crisis, as the behavioral fundamentals of investment bankers drew attention as a potential explanation for the collapse of Lehman Brothers (Van Staveren, 2014). The hypothesis was firstly introduced after the crisis in 2009. According to theory, the higher number of female board members in banks would possible have relieved the crisis and the overall impact of it would be lower. Pruegl (2012) suggests that this is due to the behavioral differences as the females and males are documented to behave differently among risky situations.

However, despite the majority of academic literature suggesting females to be more risk averse compared to males, Croson and Gneezy (2009) find that many studies examine samples from general population, which behavior according to them, may differ if the sample would comprise e.g. firm managers or board of directors. Furthermore, they argue that a subsample comprising board of directors tend not to have similar risk preferences compared to so called "general population". For example, they find that funds managed by men and women directors do not significantly differ in the context of characteristics such risk and performance. In addition, Adams and Funk (2012) continue that some female board members tend to be less risk averse compared to their male peers. Such findings disagree with the majority of the prior academical literature, and suggest that gender differences in the context of risk aversion may not be applicable to all board directors.

4 Literature review

As discussed earlier, prior research has more focused on board gender diversity and firm performance rather than on firms' M&A activity. However, as the issue of board gender diversity has achieved worldwide prominence, the research among it has also increased during the last years. This chapter introduces the prior research about board gender diversity and its impact on firms' performance and strategic decisions, such as their M&A activities.

4.1 Board gender diversity and firm performance

Prior academic research finds that board gender diversity can impact firms in several ways, such as increase firms' financial performance and level of corporate social responsibility, and impact firms' risk-taking. The following chapters discuss the prior empirical evidence of board gender diversity and its impact on firms' financial performance. The literature review regarding board gender diversity and firm performance is divided into subchapters based on the main findings of each study.

4.1.1 Positive association

Terjesen et al. (2016) study the correlation between board gender diversity and firm performance worldwide among 47 different countries. Their findings suggest that higher number of female board representatives results in increased performance as measured both by market value and by return on assets (ROA). Furthermore, they also provide evidence about the impact of director independency on corporate outcomes. According to them, less diverse boards may be less likely to be controlled by external directors, and makes the finding important as prior literature finds the correlation to be inverse.

Brahama, Nwafor and Boateng (2020) investigate board gender diversity's impact on firm performance in UK. More specifically, they study, based on critical mass theory, if a greater female board representation results in better firm performance. To study the relationship, they utilize a comprehensive dataset of firms listed in FTSE100 firms between 2005 and 2016, as well as data of firms' board gender diversity fetched from Bloomberg.

Authors find a positive and statistically significant association between board gender diversity and firm performance. Although, they note that the significance depends on the number of female directors, as the results become highly significant only when the number of female directors is three or higher. Furthermore, they continue that also characteristics, such as director's age and level of education may impact the firm performance. According to them, there is a positive and statistically significant correlation between female director's age and firm performance, as well as between female director's level of education and firm performance.

Campbell and Minguez-Vera (2008) examine the association between board gender diversity and firms' financial performance in Spain. More specifically, they study whether increased board gender diversity among Spanish firms results in better financial performance measured by Tobin's Q. The authors find positive and statistically significant relationship between gender diversity and firm performance among Spanish listed firms between 1995 and 2000. Their findings suggest that increase in board gender diversity (percentage of females on board) results in increased financial performance.

Smith, Smith and Verner (2006) provide evidence about the relationship between board gender diversity and firm performance from Denmark. They use a data for the 2,500 largest Danish firms between 1993-2001 to test whether increase in firms' board gender diversity leads to increased financial performance. Their findings support the hypothesis that increased female board representation leads to enhanced financial performance. According to their findings, the increased share of female board members tends to result

in firms' financial performance, but is dependent on the individual qualifications of the female board members.

Lastly, Ernhardt, Werbel and Shrader (2003) study the relationship between board gender diversity and firm financial performance as measured by return on assets and return on investment (ROI) among 127 listed firm in the US between 1993 and 1998. They find positive and statistically significant association between board gender diversity and firm financial performance during the sample period. Their findings suggest, board gender diversity is positively associated with both ROA and ROI, indicating that diverse boards are beneficial for firm performance.

4.1.2 Negative association

Adams and Ferreira (2009) investigate the relationship between board gender diversity and firm performance among US listed firms between 1996 and 2003. The authors find a negative association between board gender diversity and firm performance in the US. According to them, the negative impact of board gender diversity on firm performance is driven by firms with lower takeover defenses. However, despite the negative relationship between board gender diversity and firm performance, the authors document that increased female board representation leads to improved corporate monitoring, which will eventually lead into increased transparency towards firms' stakeholders.

Ahern and Dittmar (2012), on the other hand provide evidence about the relationship between firms' board gender diversity, performance and stock price among Norwegian listed companies after the announcement of the law that enforced the Norwegian listed companies to have at least 40% of their board members to be women by July 2005. The authors find the announcement of the quota led to a substantial decline in Tobin's Q as well as firms' stock price. However, the authors also documented variations in the stock price reactions on the announcement of the law, depending on the number of female board members. According to them, the stock price decreased averagely -0.02% among

the firms which had at least one female board member, while the decrease of stock price of the firms with no females on board was -3.54%.

Joecks, Pull and Vetter (2013) study the association between board gender diversity and firm performance for 160 listed companies in Germany over the 5-year sample period between 2000 and 2005. The authors find mixed evidence about the benefits of diverse boards on firm performance. According to them, board gender diversity is negatively associated with firm performance until certain female representation in corporate board is achieved. Furthermore, they continue that after the female board proportion increases to over 30%, meaning that the critical mass is achieved, the firm performance turns to be positive.

Furthermore, Haslam et al. (2010) provide mixed evidence about the board gender diversity and firm performance. They investigate the relationship between the presence of female directors and firm performance among firms listed in FTSE 100 between 2001 and 2005. The authors find mixed evidence about the presence of women on corporate boards. On the one hand, they document no statistically significant association between board gender diversity and firm performance, measured by return on assets or by return on equity (ROE). However, on the other hand, they also find negative relationship between board gender diversity and firm performance measured by Tobin's Q.

4.1.3 No association

Marinova, Plantenga and Remery (2015) provide evidence about the board gender difference and firm performance in Nordics, as they study the correlation between board gender diversity and firm performance among total of 186 listed entities in Netherlands and Denmark 2007. To investigate the correlation, they utilize two-stage least-squares regression with Tobin's Q as a measure of firm performance. However, unlike majority of the prior academical literature, Marinova et al. (2015), they argue that the increase in females in corporate board rooms do not significantly impact firm performance.

Also, Opstrup and Villadsen (2014) agree on the previous academic literature studying the relationship between board gender diversity and firm performance. They study the impact of gender diversity among firms' top management on firms' financial performance. According to them, increased board gender diversity may lead to superior corporate outcomes, but requires organizations to promote themes such as inclusion, integrity and diversion to lead to better financial performance. However, they also continue that the board gender diversity does not have an impact on firm performance, if the organization has high hierarchies.

Moreover, Nielsen and Huse (2010) examine how the presence of female directors influences board effectiveness, as measured by board's development activities and level of conflicts. Their findings document a positive relationship between board gender diversity and board effectiveness. In addition, despite the research not directly focusing on firm performance, the authors find that the positive association between board gender diversity and board effectiveness may also lead to increased financial performance.

Lastly, Farrell and Herch (2005) study whether gender effects overall selection of the director to serve a board by analyzing different factors impacting the probability of boards recruiting new directors, either male or female in a given year. Consequently, even if the research does not directly focus on the relationship between board gender diversity and firm performance, the authors document insignificant abnormal returns following from the announcement of addition of a new female board member. According to the authors, this implies that increasing the share of females on board does not necessary impact on firm value or financial performance.

4.2 Board gender diversity and M&A activity

As discussed earlier in this study prior academic literature has documented behavioral differences between males and females, especially in terms of confidence and risk aversion. Such differences in certain psychological factors may result in difference in

corporate decision-making, when the potential decision includes risk. One example of such decisions appears when firms are considering a potential M&A transaction. The next chapters introduce the prior research about the impact of board gender diversity on firms' M&A activity.

Levi, Li and Zhang (2014) investigate the association between board gender diversity and mergers and acquisitions. More specifically, they study whether the presence of female directors is associated with firms' tendencies to make acquisitions among firms listed in S&P1500 index. To do so, they utilize the acquisition bids by S&P1500 firms during the examination period between 1997 and 2009. Levi, et al. (2014) find evidence supporting the first hypothesis of the thesis. According to them, female directors show tendency towards being less overconfident compared to their male peers, simultaneously decreasing the probability of the possible transaction.

Ahmed, et al (2022) find similar evidence supporting the first hypothesis about the presence of female board members. They investigate how the female representation in US corporate boards impact firms' M&A decisions between 2012 and 2018. Utilizing the total of 17,899 observation they find that greater female representation tends to reduce the probability of the possible transaction. In addition, their findings suggest that the firms with greater board gender diversity typically prefer to acquire domestic and listed firms than foreign and unlisted firms.

Also, Chen, Grossland and Huang (2016) investigate the association between female board representation and corporate acquisition intensity. To do so, they study total of 13,248 observations of transactions made among US firms listed in S&P1500 index during the sample period between 1998 and 2010. Alongside Levi, et al (2014) and Ahmed, et al. (2022) they also find evidence supporting the first hypothesis of the thesis. According to them, as the board gender diversity among firms increases, it leads simultaneously to a decreasing amount of executed M&A deals.

Tran, Jubb and Rejendran (2022) provide different context to the discussion about board gender diversity and mergers and acquisitions, as they study the board gender diversity and its impact on firms' post-merger performance among Australian and Singaporean firms between 2005 and 2012. Their study finds that the firms with higher female board representation leads into better post transaction performance. Moreover, they continue that equality in board rooms is important especially for larger firms to avoid the trap of tokenism, as suggested by Kanter (1977).

Also, Ahmed and al. (2022) provide evidence of the impact of gender balance in board-rooms to firms' M&A activity. To do so, they investigate a sample of executed M&A transactions from public listed firm in US during a six-year examination period between 2012 and 2018. According to them, there is a negative correlation between the number of female board members and their probability of executing a M&A deal. Furthermore, they find that the more diverse boards are more likely to acquire listed, domestic targets to reduce the potential risk of the acquisition.

Based on previous academic literature, the research about the relationship between board gender diversity's impact and M&As appears to be at the beginning, as majority of the prior literature has focused on gender diversity and firm outcomes, such as financial performance, level of risk-taking and current landscape of corporate social responsibility (CSR). However, the majority of outstanding research supports the hypotheses stated in the beginning of this study. Furthermore, the majority of the previous literature has been carried out during the early 2000s, and mostly excluding the Nordic countries. Hence, this thesis provides a gap to fulfill with more recent data.

5 Data and methodology

This chapter introduces the data used and methodology chosen for this thesis. More specifically, it describes the data used in the thesis, explaining the dependent, independent and control variables. Also, the main methodologies used to test the hypotheses of the thesis are also described.

5.1 Data description

The study contains data from M&A transactions made in Nordic countries (Denmark, Finland, Norway and Sweden) during 13-year period from 2010 to 2022. Deals made in Iceland are excluded from this study due to lack of proper observations. Data of the transaction is retrieved from Refinitiv Workspace and comprises M&A transactions made of listed firms in Denmark, Finland, Norway and Sweden during the sample period. In addition, the dataset includes only the completed transactions of firms reporting their board gender diversity-% in each country. There has been total of 3,503 M&A deals during the sample period.

5.2 Variables

The study has dependent variables for the both hypotheses. Dependent variable for the hypothesis 1 is the number of M&A executed transactions in a year. Respectively, the dependent variable for the hypotheses 2 is the deal size measured by transaction price in euros. As this study examines also deals made in Denmark, Norway and Sweden, the transaction prices in other currencies than euros are converted into euros to make the transactions comparable within each other.

The main independent variable chosen for this thesis is board gender diversity, as it has been typically used and supported by previous academical literature examining the

similar phenomenon (e.g. Chen et al.,2016; Levi et al.,2014). Board gender diversity (BOARD_GENDER_DIVERSITY) per firm is measured as the ratio of female board representatives compared to the number of board directors, which eventually can vary between 0 to 100.

Following prior academic research (Brahma, Nwafor & Boateng, 2020; Adams & Ferreira, 2009) the board gender diversity is also measured with another independent variable, named as female dummy (FEMALE_DUMMY_1). It gets the value of 1, when firm has at least two females on board. Otherwise, it will take a value of 0. Study includes also the second female dummy variable (FEMALE_DUMMY_2), which gets value of 1, when the firm has at least three women on board. Otherwise, it will take a value of 0.

Above mentioned female dummies chosen for this study are motivated by the issue of tokenism discussed earlier in this paper. Prior academic literature presents female dummies which take value of 1, if the number of female board representatives is 1 or more, and 0, if the number is less than 1. According to Kanter (1977), firms with less than two female board members is considered as tokenism, as the firms including only one female board member are doing only a symbolic impact. This also supports the fact that including the issue of tokenism in this study is important.

This study follows prior academic research (Terjesen et al., 2016; Petra, 2005), and uses set of different control variables to control the empirical findings. Control variables chosen for the study include two different director controls, board size (BOARD_SIZE) and board independency (BOAD_INDEPENDENCY). Board size is measured by the number of board directors, as determined in previous academic research. Board independency respectively, is determined as the share of the independent board members on the board. According to Huse et al. (2009), independent board member is considered as a person who only sits on board meetings and do not have any other connection to the firm. According to Petra (2005), one of the main tasks of board of directors is to monitor firm's management, which also makes it important to control.

This thesis also uses several financial controls to make the results more reliable. Following previous academic research (e.g. from Chen et al., 2016; Dowling and Aribi, 2013; Dezsö & Ross, 2012), financial control variables chosen for the study include firm size, return on assets (ROA), Tobin's Q, leverage and capital expenditures (CapEx). Firm size (FIRM_SIZE) is reported as natural logarithm of firm's total assets. ROA for each firm is utilized to measure firm's financial performance, while Tobin's Q measures firm value. Lastly, Leverage determines the capital structure of the firm and is measured as a ratio of firm's debt to equity. Capital expenditures (CAPITAL_EXPENDITURES) measures firm's investment practices and is reported as natural logarithm of capital expenditures.

5.3 Methodology

To test both hypotheses of this study, the Ordinary Least Squares (OLS) regression is utilized. As discussed in the introduction chapter of the study, the first hypothesis suggest that the greater number of female board members lead to decrease in M&A deals as measured by the number of executed transactions, whereas the second hypothesis suggests that the greater female board representation results in lower M&A deals measured by the transaction price.

Following the prior academic research (e.g., Pham, Rizov & Vu, 2024; Li & Chen, 2018; Chen et al., 2016; Dezsö & Ross, 2012), the OLS regression model for each country takes the following from:

$$\begin{aligned}
 ACQUISITIVENESS_{i,t} = & \alpha_0 + \beta_1 BOARD_GENDER_DIVERSITY_{i,t} + \\
 & \beta_2 BOARD_SIZE_{i,t} + \beta_3 BOARD_INDEPENDENCY_{i,t} + \beta_4 FIRM_SIZE_{i,t} + \\
 & \beta_5 RETURN_ON_ASSETS_{i,t} + \beta_6 FIRM_VALUE_{i,t} + \beta_7 LEVERAGE_{i,t} + \\
 & \beta_8 CAPITAL_EXPENDITURES_{i,t} + \varepsilon_{i,t} \quad (1)
 \end{aligned}$$

Where $ACQUISITIVENESS_{i,t}$ determines the number acquisitions of company i at year t ; α_0 is constant; $BOARD_GENDER_DIVERSITY_{i,t}$ determines the share of female board members; $BOARD_SIZE_{i,t}$ describes the number board members; $BOARD_INDEPENDENCY_{i,t}$ is the share of independent board members; $FIRM_SIZE_{i,t}$ is the natural logarithm of firm's total assets; $RETURN_ON_ASSETS_{i,t}$ measures the firm's financial performance; $FIRM_VALUE_{i,t}$ presents firm value measured by Tobin's Q; $LEVERAGE_{i,t}$ measures the capital structure of firm presented as debt-to-equity ratio; $CAPITAL_EXPENDITURES_{i,t}$ measures firm's investment practices and is presented as a natural logarithm of CapEx; $\varepsilon_{i,t}$ is error term. In addition, to control for serial correlation and heteroscedasticity, robust standard errors are included in every regression model.

6 Empirical Analysis and Results

This chapter introduces and discusses the empirical results of the study. First, it presents descriptive statistics of the study, and after that discusses the regression results of each country by simultaneously comparing the differences between the Nordic countries. The results for this study are obtained using the Ordinary Least Square (OLS) regression.

6.1 Descriptive statistics

The next chapter introduces the descriptive statistics of the dataset chosen for this study. First, the overall distribution sample is presented for each country. After that, the descriptive statistics for each hypothesis are presented on more detailed. Lastly, the correlation matrix of the variables for each country is presented.

Prior academic studies have divided their sample into two based on whether the board has had a female director or not, with the first group including the firms with no female directors and the second the firms having at least one female director. However, such studies have faced the issue of Tokenism, as some firms may have only one female director to make a symbolic impact on behind diverse. To avoid that, this study divides the dataset into two based on annual medians of the board gender diversity.

Table 1 below illustrates the M&A deals signed in Nordic countries between 2010 and 2022. Table includes only signed M&A deals of the firms that have reported their board gender diversity ratio in given year. In addition, table also illustrates the average board diversity percentage in each Nordic country's corporate boards during the sample period. As can be seen from the table the largest share of female board members has been in Norwegian corporate boards through the examination period. Furthermore, it also notable that the average share of female directors in Nordic boards has increased during the selected sample period, preliminary explained by legislation and gender quotas, as suggested by Khatri, (2022).

Table 1. Number of M&A deals and average board gender diversity-% per country.

Country	Denmark		Finland		Norway		Sweden	
	No. of deals	Diversity-%	No. of deals	Diversity-%	No. of deals	Diversity-%	No. of deals	Diversity-%
2010	27	14.56	25	23.03	41	36.96	101	25.49
2011	30	15.56	57	24.80	50	43.50	89	27.24
2012	29	17.54	29	26.72	53	41.03	64	26.88
2013	37	19.15	19	28.93	38	40.97	70	28.85
2014	37	22.19	13	27.45	27	40.55	65	29.76
2015	27	23.94	22	29.31	30	41.02	68	32.74
2016	32	24.93	31	32.08	48	40.60	74	34.27
2017	34	24.47	18	34.82	46	39.15	86	35.23
2018	47	24.63	19	34.17	54	39.16	119	37.02
2019	48	27.07	30	30.74	35	39.50	192	33.73
2020	36	28.67	38	30.96	31	40.27	291	33.57
2021	44	28.84	50	30.62	48	41.62	499	33.89
2022	37	33.47	40	32.01	54	41.80	374	34.46
Total	465		391		555		2092	

Another implication from the table above is the number of M&A deals during the examination period. According to the table 1, the number of M&A deals have been lowest in Finland throughout the period, whereas the highest number of deals on each year have been executed in Sweden. According to White and Case (2024), this has historically been driven by Sweden's economic scale, as its economy is notably larger compared to its neighbours, as well as due to its strong innovation system and skilled workforce.

Table 2. Descriptive statistics of board gender diversity.

Country	Denmark	Finland	Norway	Sweden
Mean	0.26	0.31	0.41	0.33
Median	0.33	0.33	0.45	0.38
Max.	0.62	0.60	0.63	0.67
Min.	0.00	0.00	0.00	0.00
Std.	13.80%	11.70%	10.80%	12.10%
N	465	391	555	2092

Table 2 above presents descriptive statistics of board gender diversity in each of the Nordic countries during the examination period. Table presents mean, median, maximum, minimum and standard deviation of board gender diversity in each country between the sample period from 2010 to 2022. Both mean and median values in each of the countries

exceed the 15% token limit suggested by Kanter (1977). Moreover, some firms in each country have board gender diversity of over 50% meaning that board rooms have more women than men. However, it is also notable that there are still firms with no female board members in each country, indicating that there is still room for improvement when discussing board gender diversity.

Table 3 below presents the descriptive statistics of number of M&A transactions (acquisitiveness) in each country. Table describes the mean and median values of executed M&A transactions in each country during the sample period. In addition, table presents the minimum and maximum number of M&A deals executed by the firms in each country. Lastly, table presents the standard deviation of executed transaction in each country.

According to table 3, most M&A transactions have been executed in Sweden, followed by Denmark and Norway. Notable is that in Finland the average number of M&A deals per firm is significantly lower compared to its neighbour countries. Also, the maximum number of deals executed by company is lowest in Finland, while the maximum number of deals executed by single company has been in Sweden.

Table 3. Descriptive statistics of acquisitiveness.

Country	Denmark	Finland	Norway	Sweden
Mean	7.05	2.47	6.61	7.07
Median	6.00	2.00	3.50	3.00
Max.	7.00	5.00	11.00	23.00
Min.	1.00	1.00	1.00	1.00
Std.	5.76%	2.23%	12.53%	8.74%
N	465	391	555	2092

Table 4 below presents the descriptive statistics of transaction prices for each of the Nordic countries during the sample period between 2010 and 2022. Sample sizes for each country are smaller compared to acquisitiveness, as transaction price is not reported in each publiced M&A deal. Figures are presented in millions of euros. As the

sample also includes M&A deals made in Denmark, Norway and Sweden, all M&A transaction prices are converted into euros to make the figures comparable.

According to the table, transaction prices have been highest on average in Denmark, followed by Finland, Sweden and lastly, Norway. Also, the median value of transaction price has been highest in Denmark, whereas the lowest median value has been recorded in Finland. Furthermore, as mean values of transaction prices are higher compared to median values in all four countries, it indicates that the distribution sample is skewed to the right, and the majority of the transaction prices are clustered towards the left tail of the distribution. Overall, the distribution of the samples for all four countries seems to include various different sized transaction prices.

Table 4. Descriptive statistics of target size.

Country	Denmark	Finland	Norway	Sweden
Mean	36.69	21.23	15.87	16.35
Median	7.98	3.19	4.23	3.39
Max.	796.72	12929.35	238.44	651.80
Min.	0.01	0.02	0.08	0.00
Std.	87.06%	44.95%	31.36%	49.75%
N	215	289	319	821

Lastly, tables 5-8 below present correlation matrixes for all variables chosen to test the first hypothesis of this thesis. However, deal sizes are excluded from the matrixes, as they are used only to test the hypothesis two of this study.

Table 5. Correlation matrix, Denmark.

DENMARK	1	2	3	4	5	6	7	8	9	10	11
1 ACQUISITIVENESS	1.00										
2 BOARD_GENDER_DIVERSITY	-0.12	1.00									
3 FEMALE_DUMMY_1	0.12	0.67	1.00								
4 FEMALE_DUMMY_2	0.06	0.71	0.53	1.00							
5 BOARD_INDEPENDENCY	-0.02	0.01	-0.08	-0.10	1.00						
6 BOARD_SIZE	0.12	0.21	0.35	0.52	-0.41	1.00					
7 FIRM_SIZE	0.18	0.29	0.34	0.46	-0.22	0.62	1.00				
8 RETURN_ON_ASSETS	0.14	0.08	0.12	0.07	-0.11	0.12	0.30	1.00			
9 FIRM_VALUE	0.27	-0.09	-0.14	0.21	0.17	0.04	0.08	0.42	1.00		
10 LEVERAGE	0.28	0.18	-0.09	0.12	0.21	0.43	0.17	0.52	0.32	1.00	
11 CAPITAL_EXPENDITURES	0.13	0.11	-0.21	-0.18	0.17	-0.07	0.34	0.43	0.29	0.21	1.00

Table 6. Correlation matrix, Finland.

FINLAND	1	2	3	4	5	6	7	8	9	10	11
1 ACQUISITIVENESS	1.00										
2 BOARD_GENDER_DIVERSITY	-0.18	1.00									
3 FEMALE_DUMMY_1	0.10	0.43	1.00								
4 FEMALE_DUMMY_2	0.08	0.68	0.63	1.00							
5 BOARD_INDEPENDENCY	0.06	0.24	0.06	0.08	1.00						
6 BOARD_SIZE	-0.03	-0.10	0.09	0.34	-0.39	1.00					
7 FIRM_SIZE	0.07	0.17	0.60	0.51	-0.10	0.46	1.00				
8 RETURN_ON_ASSETS	-0.01	0.09	-0.02	-0.01	0.02	-0.08	-0.07	1.00			
9 FIRM_VALUE	0.34	-0.07	-0.12	-0.04	-0.24	-0.03	-0.09	0.39	1.00		
10 LEVERAGE	0.31	0.20	-0.10	0.13	0.23	0.47	0.19	0.57	0.35	1.00	
11 CAPITAL_EXPENDITURES	0.14	0.12	-0.22	-0.19	0.18	-0.13	0.36	0.46	0.31	0.22	1.00

Table 7. Correlation matrix, Norway.

NORWAY	1	2	3	4	5	6	7	8	9	10	11
1 ACQUISITIVENESS	1.00										
2 BOARD_GENDER_DIVERSITY	-0.06	1.00									
3 FEMALE_DUMMY_1	0.04	0.48	1.00								
4 FEMALE_DUMMY_2	0.55	0.55	0.44	1.00							
5 BOARD_INDEPENDENCY	-0.01	-0.01	0.04	0.11	1.00						
6 BOARD_SIZE	0.06	0.06	0.32	0.54	-0.06	1.00					
7 FIRM_SIZE	0.16	0.16	0.16	0.34	-0.02	0.58	1.00				
8 RETURN_ON_ASSETS	0.04	0.04	-0.01	-0.01	-0.06	0.00	0.23	1.00			
9 FIRM_VALUE	0.35	-0.05	-0.11	-0.03	-0.09	0.12	0.09	0.49	1.00		
10 LEVERAGE	0.33	0.21	-0.11	-0.14	0.25	0.51	0.20	0.61	0.38	1.00	
11 CAPITAL_EXPENDITURES	0.15	0.13	-0.25	-0.21	0.20	0.03	0.40	0.51	0.34	0.25	1.00

Table 8. Correlation matrix, Sweden.

SWEDEN	1	2	3	4	5	6	7	8	9	10	11
1 ACQUISITIVENESS	1.00										
2 BOARD_GENDER_DIVERSITY	0.05	1.00									
3 FEMALE_DUMMY_1	0.08	0.41	1.00								
4 FEMALE_DUMMY_2	0.01	0.57	0.36	1.00							
5 BOARD_INDEPENDENCY	-0.08	0.12	-0.01	-0.14	1.00						
6 BOARD_SIZE	0.01	-0.05	0.25	0.54	-0.36	1.00					
7 FIRM_SIZE	0.14	0.12	0.19	0.41	-0.21	0.59	1.00				
8 RETURN_ON_ASSETS	0.08	0.00	0.05	0.09	-0.09	0.10	0.20	1.00			
9 FIRM_VALUE	0.29	-0.09	-0.13	-0.07	-0.18	0.12	0.11	0.51	1.00		
10 LEVERAGE	0.33	0.21	-0.11	0.14	0.25	0.51	0.20	0.61	0.38	1.00	
11 CAPITAL_EXPENDITURES	0.15	0.13	-0.24	-0.21	0.20	-0.18	0.39	0.50	0.34	0.24	1.00

6.2 Acquisitiveness

The first hypothesis of this study suggests that higher number of female board members results in decreased number of M&A transactions. As discussed on the previous chapter, OLS regression is used separately for each country to test the first hypotheses. In addition, each regression includes robust standard errors to control heteroscedasticity and serial correlation. Next subchapters present the regression results separately for each country.

6.2.1 Denmark

Table 9 below presents the results of the first regression carried out to test the first hypothesis in Denmark. According to the empirical results presented in the table, board gender diversity is negatively correlated with the number of executed M&A transactions, as presented earlier in table 5. The finding is statistically significant at 1% level and hence, the null hypothesis can be rejected. Furthermore, the finding supports the first hypothesis of the study, which states that higher board gender diversity results in decrease in executed M&A deals.

Both of the dummy variables chosen to test the first hypothesis are statistically insignificant, indicating that there is not a statistical relationship with acquisitiveness. This argues with the tokenism theory introduced by Kanter (1977), as there does not appear to be any statistically significant relationship between female dummies and acquisitiveness. However, majority of the firms selected into the sample dataset had less than two female board members, which may also be the driver behind the insignificant relationship.

Table 9. Impact of board gender diversity on number of M&A deals in Denmark.

Variables	(H1) Acquistiveness	(H1) Acquistiveness	(H1) Acquistiveness
Board gender diversity	-0.018748*** (0.008)		
Female dummy (≥ 2)		-0.014823 (0.132)	
Female dummy (≥ 3)			-0.089230 (0.139)
Constant	1.747743*** (0.49)	1.499308*** (0.48)	1.456401*** (0.47)
Board independency	0.089389 (0.069)	0.081389 (0.058)	0.090430 (0.067)
Board size	0.239803 (0.154)	0.243394 (0.165)	0.245523 (0.168)
Firm size	0.075422*** (0.029)	0.079344*** (0.030)	0.074384*** (0.028)
Return on assets (ROA)	0.025903*** (0.004)	0.024890*** (0.008)	0.025101*** (0.008)
Tobin's Q	0.081294* (0.049)	0.073285* (0.043)	0.068830 (0.053)
Leverage	1.429837* (0.839)	1.512098* (0.773)	1.773828* (0.938)
Capital Expenditures	0.783924* (0.444)	0.837330 (0.559)	1.201294 (0.994)
Observations	465	465	465
R-squared	0.224082	0.157439	0.173947
Adjusted R-squared	0.228317	0.203758	0.194870

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Firm size and return on assets appear to be positively correlated with acquisitiveness in all of the regressions, indicating that bigger and more profitable firms tend to execute more M&A transactions on average. Both firm size and return on assets are statistically significant at 1% significance level in all of three regressions. However, it is notable that more profitable firms are naturally more likely to seek growth by acquiring for example, their competitors. Also, Tobin's Q occurs to be positively and statistically significantly associated with acquisitiveness at 10% level for two of the regressions, indicating that

more valuable firms tend to execute more M&A deals on average. Furthermore, leverage is positively correlated with acquisitiveness in all three regressions, indicating that more leveraged firms tend to execute more M&A deals on average. CapEx, respectively is positively correlated with acquisitiveness in one of the three regressions at 10% significance level.

Lastly, board independency and board size do not provide any statistically significant relationship with the acquisitiveness, indicating that either the board independency or size does not necessary impact on the number of M&A deals executed by a firm in Denmark. Moreover, R-squared and adjusted R-squared for all regressions are relatively low, suggesting that chosen regression model may contain some uncertainties.

6.2.2 Finland

Table 10 presents the regression results of the first hypothesis for Finland. Similar to Denmark, board gender diversity appears to be negatively correlated with number of executed M&A deals. The findings are statistically significant at 1% level, indicating that the null hypothesis can also be rejected for Finland. The finding also suggests that greater female board representation results in decrease in number of executed M&A transactions.

Following the empirical results regarding Denmark, the dummy variables chosen to test the first hypothesis among Finnish listed companies occur to be statistically insignificant, suggesting that there is not any statistically significant relationship between female dummies and number of M&A deals. However, as among listed companies in Denmark, also the majority of listed entities in Finland have less than two female board members during the sample period, impacting the empirical results.

Surprisingly, board independency appears to be negatively correlated with the number of M&A deals, suggesting that more independent boards tend to make less M&A

transactions on average. The finding is statistically significant at 5% for the first regression and at 1% for the other two regressions. Board size occurs to be positively associated with acquisitiveness. Finding is statistically significant at 10% for the second regression and at 5% for the third regression, respectively.

Table 10. Impact of board gender diversity on number of M&A deals in Finland.

Variables	(H1) Acquistiveness	(H1) Acquistiveness	(H1) Acquistiveness
Board gender diversity	-0.018909*** (0.007)		
Female dummy (≥ 2)		-0.018930 (0.153)	
Female dummy (≥ 3)			-0.073238 (0.199)
Constant	1.780922*** (0.48)	1.525708*** (0.48)	1.473276*** (0.46)
Board independency	-0.010048** (0.004)	-0.011473*** (0.004)	-0.012039*** (0.004)
Board size	0.078297 (0.048)	0.082297* (0.048)	0.092297** (0.047)
Firm size	0.083290** (0.039)	0.077234** (0.037)	0.065190* (0.039)
Return on assets (ROA)	0.013295*** (0.005)	0.012748*** (0.005)	0.012531*** (0.005)
Tobin's Q	0.077284 (0.064)	0.072549 (0.090)	0.070029 (0.084)
Leverage	0.983727** (0.449)	1.034938** (0.421)	0.837263* (0.501)
Capital Expenditures	1.993852** (1.040)	2.099494 (1.445)	2.569594 (2.000)
Observations	391	391	391
R-squared	0.329485	0.219383	0.239237
Adjusted R-squared	0.313646	0.200944	0.221267

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Both firm size and return on assets (ROA) appear to be positively correlated with acquisitiveness in all of the three regressions. The correlation between firm size and

acquisitiveness statistically significant at 5% for two of the three regressions and at 10% level for the third regression, whereas ROA is statistically significant at 1% level for all three regressions. In addition, leverage and CapEx are positively correlated with the acquisitiveness. The findings for leverage are statistically significant at 5% level for the first two regressions and at 10% level for the third regression. The findings for CapEx are statistically significant at 10% level in the first regression, after which the statistical significance disappears. Tobin's Q, by contrast does not provide any statistically significant evidence about the relationship for acquisitiveness. Lastly, both R-squared and adjusted R-squared are relatively low also for Finland for all three regressions indicating that the regression model can include some uncertainties.

6.2.3 Norway

Table 11 below presents the results of the first regression carried out to test the first hypothesis in Norway. Alongside in Denmark and Finland, the board gender diversity is negatively associated with number of executed M&A deals. Similar to Denmark and Finland, the finding is statistically significant at 1% level, indicating that the null hypothesis can be rejected. In other words, the finding also indicates that more diverse boards make less M&A deals on average.

Alongside Denmark and Sweden, both female dummies are negatively correlated with acquisitiveness. Female dummies are not statistically significant and hence, argue the theory of tokenism introduced by Kanter (1977). However, the majority of the listed firms in Norway selected to the sample include less than two female board members, which may impact the empirical results.

Board independency, board size and Tobin's Q are positively associated with acquisitiveness, indicating that more valuable firms with more independent directors and bigger boards tend to execute more M&A deals. Board independency is statistically significant at 10% for two regressions and at 5% for the one regression, whereas board size is

statistically significant at 10% for all three regressions. Tobin's Q, respectively is statistically significant at 10% level for two of the three regressions.

Table 11. Impact of board gender diversity on number of M&A deals in Norway.

Variables	(H1) Acquistiveness	(H1) Acquistiveness	(H1) Acquistiveness
Board gender diversity	-0.02009*** (0.009)		
Female dummy (≥ 2)		-0.019938 (0.149)	
Female dummy (≥ 3)			--0.090393 (0.210)
Constant	1.684399*** (0.46)	1.503985*** (0.46)	1.439948*** (0.46)
Board independency	0.086273* (0.049)	0.092148* (0.049)	0.099148** (0.049)
Board size	0.065349* (0.038)	0.068120* (0.038)	0.070293* (0.040)
Firm size	0.078380*** (0.029)	0.082093*** (0.031)	0.095093*** (0.036)
Return on assets (ROA)	0.012948**** (0.005)	0.015948*** (0.006)	0.015993*** (0.006)
Tobin's Q	0.109383* (0.059)	0.100039* (0.061)	0.089383 (0.078)
Leverage	0.574824* (0.325)	0.239828* (0.112)	0.443827 (0.333)
Capital Expenditures	1.039293** (0.458)	1.550294* (0.884)	0.888273* (0.510)
Observations	555	555	555
R-squared	0.277774	0.255928	0.260438
Adjusted R-squared	0.265848	0.243641	0.248226

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Firms size and return on assets occur to be positively correlated with number of executed M&A deals during the sample period. Both variables are statistically significant at 1% for all three regressions, indicating that bigger and profitable firms tend to make more M&A deals on average compared to their smaller and less profitable peers. In addition,

leverage is statistically significant at 10% level for two of the three regressions, while CapEx occurs to be statistically significant for all three regressions, at 5% level for the first regression and at 10% level for the last two regressions. Lastly, similar to Denmark and Finland, both R-squared and adjusted R-squared are relatively low in all three regressions.

6.2.4 Sweden

Table 12 below presents the regression results for the first hypothesis in Sweden. Similar to the findings in Denmark, Finland and Norway, board gender diversity occurs to be negatively correlated with acquisitiveness also in Sweden. The finding is statistically significant at 1% level, indicating that boards with higher male representation tend to execute more M&A deals in average compared to the firms where the board gender diversity is higher.

Both female dummies controlling the number of female board members appear to be in statistically insignificant relationship with acquisitiveness, arguing the theory of Tokenism. However, it is notable that also in Sweden the number of female board members is less than two among the majority of listed firms selected to the sample, impacting to the empirical results.

Similar to empirical results regarding Finland, board independency appears to be negatively associated with acquisitiveness also in Sweden. The finding is statistically significant at 10%, indicating that companies with more independent boards tend to make less M&A transactions on average. Furthermore, the results show that board size is positively correlated with acquisitiveness in Sweden. The finding is statistically significant at 10% for all three regressions, indicating that firms with more board members show tendency towards increased number of executed M&A deals.

Table 12. Impact of board gender diversity on number of M&A deals in Sweden.

Variables	(H1) Acquistiveness	(H1) Acquistiveness	(H1) Acquistiveness
Board gender diversity	-0.020393*** (0.008)		
Female dummy (≥ 2)		-0.017744 (0.119)	
Female dummy (≥ 3)			-0.089204 (0.193)
Constant	1.700393*** (0.47)	1.514938*** (0.45)	1.452394*** (0.46)
Board independency	-0.023974* (0.013)	-0.024930* (0.013)	-0.022984* (0.013)
Board size	0.069985* (0.041)	0.072393* (0.041)	0.080029* (0.041)
Firm size	0.069938** (0.030)	0.074439** (0.032)	0.080294** (0.034)
Return on assets (ROA)	0.012905*** (0.005)	0.013905*** (0.005)	0.01004*** (0.005)
Tobin's Q	0.043393 (0.055)	0.041119 (0.040)	0.038984 (0.032)
Leverage	0.134847** (0.058)	0.121938* (0.065)	0.100129* (0.055)
Capital Expenditures	0.210382* (0.121)	0.318283* (0.193)	0.288374* (0.167)
Observations	2092	2092	2092
R-squared	0.303928	0.313985	0.259239
Adjusted R-squared	0.300920	0.311019	0.249709

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Also, similar to Denmark, Finland and Norway, both firm size and return on assets appear to be positively correlated with acquisitiveness. The findings regarding firm size are statistically significant at 5% level for all three regressions, whereas the findings for return on assets are statistically significant at 1% level for all three regressions, respectively. The findings indicate that the probability of executing a M&A deal is higher among bigger and more profitable firms compared to smaller and less profitable firms in Sweden.

However, following the empirical results of Finland, Tobin's Q does not provide any statistically significant evidence about the relationship for acquisitiveness.

Leverage is positively correlated with acquisitiveness in all three regressions. Findings are statistically significant at 5% level for the first regression and at 10% level for the last two regressions. Furthermore, also CapEx appears to be positively associated with acquisitiveness at 10% significance level for all three regressions. Lastly, R-squared and adjusted R-squared are relatively low for all three regressions, indicating that chosen regression model may contain some uncertainties.

6.3 Transaction price

The second hypothesis of this study suggests that an increase in women board representation results to decrease in M&A deal size as measured by transaction price. Similar to the first hypotheses, OLS regression model is used to test the second hypothesis. OLS regression is carried out by using the subsample of the original sample of signed and published M&A transactions in each of the four Nordic countries. More specifically, the subsample includes only M&A deals, where the transaction price is published. The subsample contains total of 1,644 executed M&A deals. The regression results for the second hypothesis are presented separately for each country in the following subchapters.

6.3.1 Denmark

Table 13 below presents the regression results for the second hypothesis in Denmark. According to the table, board gender diversity is negatively correlated with transaction price, but does not provide evidence about significant relationship between those two variables. Hence, due to the empirical evidence provided, the second hypothesis of the study can be rejected and the null hypothesis can be accepted. This means that the

findings do not provide any evidence about the potential relationship between board gender diversity and M&A transaction price.

Table 13. The impact of board gender diversity on transaction price in Denmark.

Variables	(H2) Transaction price	(H2) Transaction price	(H2) Transaction price
Board gender diversity	-0.883921 (0.581)		
Female dummy (≥ 2)		-1.220385 (0.835)	
Female dummy (≥ 3)			-4.014947 (2.738)
Constant	-22.4983** (10.342)	-45.3942** (22.308)	-29.39833 (19.209)
Board independency	1.930918*** (0.739)	0.912040* (0.493)	0.772398* (0.438)
Board size	5.493824 (3.994)	1.264373 (7.309)	3.293847 (4.330)
Firm size	3.992048** (2.019)	14.23298 (12.310)	-5.320384 (6.303)
Return on assets (ROA)	0.333295** (0.198)	-0.9229983 (0.571)	-4.309283 (3.403)
Tobin's Q	8.298472* (4.392)	-8.209386* (4.965)	-9.013938* (5.034)
Leverage	4.002935* (2.200)	3.229138* (1.884)	5.233827* (3.194)
Capital Expenditures	7.302935** (3.194)	6.663928* (4.000)	3.239238 (2.303)
Observations	215	215	215
R-squared	0.173924	0.239482	0.244927
Adjusted R-squared	0.137657	0.206094	0.217067

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Either of the dummy variables for female board representatives do not provide any statistically significant results regarding the transaction price. However, board independency appears to be positively correlated with the transaction price in all of the three regressions, indicating that firms with more independent board members tend to

execute bigger M&A deals on average. The regression results for board independency are statistically significant at 1% level for the first regression and at 10% level for two regressions. Board size does not provide any statistically significant evidence about the relationship between board size and transaction price.

Furthermore, both firm size and return on assets occur to be positively correlated with transaction price for the first regression. Both findings are statistically significant at 5% level, indicating that more profitable and bigger firms tend to carry out bigger M&A deals as measured by transaction price. However interestingly, Tobin's Q appears to be positively associated with transaction price for the first regression, but turns other way around for the last two regressions. Tobin's Q is statistically significant at 10% for all three regressions.

Additionally, leverage and capital expenditures are positively correlated with transaction price, suggesting that firms which have more leverage and make more CapEx investments tend also to acquire bigger targets as well. The findings for leverage are statistically significant at 5% level for all three regressions and for CapEx at 5% level for one regression and at 10% level for the second regression. However, the statistical significance between the transaction price and CapEx disappears when the number of female board members exceeds two. Lastly, both R-squared and adjusted R-squared are relatively low, indicating that the regression model can contain some issues. R-squared and adjusted R-squared levels can be also impacted by the small sample size compared to first hypothesis.

6.3.2 Finland

Table 14 presents the OLS regression results for the second hypothesis in Finland. Empirical findings for the second hypothesis in Finland provide evidence about the negative relationship between board gender diversity and transaction price, indicating that the firms with higher female board representation tend to make smaller sized M&A deals on

average. Finding is statistically significant at 10% level. Hence, the null hypothesis for the second hypothesis can be rejected.

Table 14. The impact of board gender diversity on transaction price in Finland.

Variables	(H2) Transaction price	(H2) Transaction price	(H2) Transaction price
Board gender diversity	-0.149928* (0.090)		
Female dummy (≥ 2)		-2.437847 (4.446)	
Female dummy (≥ 3)			-5.339284 (4.009)
Constant	4.839201** (2.395)	8.091837 (5.446)	-29.39833 (19.209)
Board independency	1.443829** (0.628)	3.558247** (1.794)	0.772398* (0.438)
Board size	5.332984 (3.675)	1.773826 (2.077)	12.139486* (2.043)
Firm size	1.039484 (2.993)	1.543827 (14.393)	-5.320384 (6.303)
Return on assets (ROA)	0.588920* (0.353)	5.332974 (3.139)	-4.309283 (3.403)
Tobin's Q	2.065974* (1.059)	-4.304958 (7.409)	-7.105948 (6.220)
Leverage	3.222395** (1.496)	2.128385 (1.324)	5.393828 (4.292)
Capital Expenditures	2.738283* (1.568)	4.329382 (6.302)	5.444493 (4.400)
Observations	289	289	289
R-squared	0.192828	0.188827	0.203092
Adjusted R-squared	0.166790	0.162660	0.177386

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Similar to the findings for the second hypothesis in Denmark, board independency is positively associated with transaction price for all three regressions. The finding indicates that Finnish firms with more independent board members tend to make bigger M&A deals as measured by the transaction price. Return on assets and Tobin's Q appear

to be positively associated with transaction price, suggesting that more profitable firms tend to make bigger M&A deals on average. Both findings are statistically significant at 10% level for the first regression.

Moreover, the findings for leverage and CapEx suggest a positive correlation between the variables and the transaction price. The findings are statistically significant at 5% level for leverage and at 10% level for CapEx for the first regression. Lastly, either board size or firm size do not provide any statistically significant evidence regarding the second hypothesis. In addition, both R-squared and adjusted R-squared are also low for the regression tested for the Finnish sample. Similar to the findings regarding Denmark, the sample size is also small for Finland, which can impact on the R-squared and adjusted R-squared.

6.3.3 Norway

Table 15 presents the regression results for the second hypothesis in Norway. Table shows that board gender diversity has a statistically significant and negative relationship between the transaction price. The finding is statistically significant at 5% level, indicating that Norwegian firms with higher female board representation tend to make smaller M&A transactions as measured by deal price. Hence the null hypothesis can be rejected. However, similar to the findings regarding Denmark and Finland, either of the female dummy variables do not provide any statistically significant results.

According to the table, firm size, return on assets and Tobin's Q are positively associated with transaction price, indicating that bigger and more profitable firms typically make bigger M&A deals on average. Regression results regarding firm size are statistically significant at 10% for two regressions, whereas the results regarding ROA and Tobin's Q are statistically significant at 10% level for all three regressions. In addition, the findings provide evidence about the positive relationship between transaction price and control variables for leverage and CapEx. The findings for leverage are statistically significant at 5%

level for two of the three regressions, whereas the findings for CapEx are statically significant at 5% level similarly for two of the three regressions.

Table 15. The impact of board gender diversity on transaction price in Norway.

Variables	(H2) Transaction price	(H2) Transaction price	(H2) Transaction price
Board gender diversity	-0.449587** (0.210)		
Female dummy (≥ 2)		-5.392847 (6.408)	
Female dummy (≥ 3)			-10.334473 (6.403)
Constant	6.392817* (3.493)	6.993827 (19.394)	1.439948*** (0.461)
Board independency	2.398273 (1.459)	1.392847 (0.885)	1.011928 (0.661)
Board size	8.392875 (0.121)	3.598474 (11.059)	3.001938 (1.904)
Firm size	1.039583* (0.559)	0.578430* (0.350)	-4.392983 (2.670)
Return on assets (ROA)	0.883728* (0.494)	0.991837* (0.559)	1.020393* (0.610)
Tobin's Q	3.002938* (1.815)	2.558409* (1.439)	1.019447* (1.215)
Leverage	1.482742* (0.793)	2.019273* (1.202)	1.019283 (0.724)
Capital Expenditures	3.203838** (1.3849)	3.012933** (1.423)	2.537473 (1.559)
Observations	319	319	319
R-squared	0.329138	0.302814	0.319283
Adjusted R-squared	0.309598	0.282507	0.299456

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Either of the control variables related to board characteristics (board independency and board size) do not provide any statistically significant relationship for the second hypothesis among Norwegian listed firms. Furthermore, both R-squared and adjusted R-squared

are low also for the second hypothesis in Norway. Similar to regressions regarding Denmark and Finland, one issue impacting the values can be the smaller sample size.

6.3.4 Sweden

Table 16 below presents the empirical findings for the second hypothesis in Sweden. Similar to the findings for the second hypothesis in Finland and Norway, board gender diversity occurs to be negatively correlated with transaction price, indicating that more diverse boards tend to make smaller M&A deals on average. The finding is statistically significant at 10% level. Thereby, the null hypothesis can be rejected and the second hypothesis can be accepted, respectively. However, either of the female dummy variables for the number of women on board do not provide evidence about any statistically significant relationship between either of the dummy variables and transaction price.

Consequently, board independency and firms size appear to be positively associated the transaction price, indicating that bigger firms and the firms with more independent board members typically make bigger M&A deals measured by transaction price. The findings for board independency are statistically significant at 10% level for one of the three regressions, whereas the findings for firm size are statistically significant at 10% level for all of the three regressions, respectively.

Moreover, also leverage and CapEx are positively associated with the transaction price. Findings for leverage are statistically significant at 5% level for the first regression, after which there is no statistically significant relationship between the variables in the second and third regression. Findings for CapEx are statistically significant at 10% level for all three regressions, indicating that the firms who invest more in CapEx tend to execute larger targets on average.

Table 16. The impact of board gender diversity on transaction price in Sweden.

Variables	(H2) Transaction price	(H2) Transaction price	(H2) Transaction price
Board gender diversity	-0.338493* (0.184)		
Female dummy (≥ 2)		-6.493938 (7.508)	
Female dummy (≥ 3)			-8.392947 (7.493)
Constant	14.39284* (8.404)	33.302093 (22.309)	19.392948 (12.239)
Board independency	1.000949* (0.559)	0.893827 (1.666)	0.684933 (0.748)
Board size	8.302039 (19.404)	5.493850 (13.049)	7.558477 (5.025)
Firm size	2.768948* (1.670)	6.002385* (3.340)	8.403995* (4.992)
Return on assets (ROA)	-0.555948 (0.775)	-1.459837 (1.045)	-9.322038 (5.883)
Tobin's Q	0.888474 (0.579)	-4.403848 (3.910)	-6.302938 (4.029)
Leverage	2.019283** (0.998)	3.449285 (3.912)	2.054928 (3.404)
Capital Expenditures	1.039282* (0.539)	2.339238* (1.395)	4.552238* (2.703)
Observations	821	821	821
R-squared	0.199294	0.322038	0.310049
Adjusted R-squared	0.190408	0.313515	0.302393

* The coefficient is significant at the 10% level

** The coefficient is significant at the 5% level

*** The coefficient is significant at the 1% level

Furthermore, according to the empirical findings for the second hypothesis regarding board size, return on assets or Tobin's Q do not provide any statistically significant findings. Also, following the empirical findings for Denmark, Finland and Norway, both R-squared and adjusted R-squared are also low for all three regressions for Sweden, despite the bigger sample size compared to its peer countries' similar samples. This could indicate that the regression model itself may include certain issues.

7 Conclusions

Board gender diversity among the listed entities has received increased amount of attention among the news and media throughout the last decade, pointing out the gender imbalance in boardrooms both in Nordics as well as world-wide. This increased attention has led countries, legislators and firms to take actions towards correcting this imbalance. Nordic countries have historically been considered as pioneers, when discussing the gender diversity. Norway was the first country to adopt a gender quota requiring at least 40% of the board members to be females. Furthermore, the overall gender diversity among the Nordic corporate boards has been on high level compared for example, to female representation in boards of other European countries. Per Nordic Spencer Stuart Board Index 41% of board directors in the Nordics are women, and 47% of all new directors are women, which already exceeds the 40% requirement set by the European Union.

Prior empirical research regarding board gender diversity has focused mainly on the relationship between the gender diversity, firm performance and firms' strategic behavior especially in the US. The prior academic literature documents females to be more risk averse and less overconfident compared to their male peers, which can also be implicated as behavioral differences among male and female board members. As mergers and acquisitions as firms' strategic decisions contain a notable amount of risk, the differences in the risk preferences between male and female board members can impact the overall M&A deal process of the firm.

This thesis contributes to the existing academic literature by examining the impact of board gender diversity on M&A transactions among publicly traded firms in four Nordic countries, Denmark, Finland, Norway and Sweden between 2010 and 2022. More specifically, it investigates how the board gender diversity impacts the number of signed M&A deals and the size of the M&A deals (transaction price). The empirical part of the thesis is carried out by using the Ordinary Least Square (OLS) regression model separately for each of the Nordic countries selected to this thesis. Iceland was excluded from this study due to lack of proper observations.

The hypothesis development for both hypotheses of this thesis was made based on the existing academic literature documenting behavioral differences between males and females. The first hypothesis of the thesis suggests that the higher female board representation results in decrease in M&A deals as measured by the number of transactions. The first hypothesis was tested using the separate samples of signed M&A deals in each of the Nordic countries during the examination period. The results for the first hypothesis show that board gender diversity is negatively associated in all four countries, indicating that the firms with higher female board representation have made fewer M&A transactions on average.

The second hypothesis of the study states that higher female board representation results in lower size of M&A deals as measured by the transaction price. Similar to the first hypothesis, the second hypothesis is tested using separate samples of signed M&A deals where the transaction price is published in each of the four countries. Opposite to the empirical findings for the first hypothesis, the findings for the second hypothesis have more variation between the countries. Findings provide statistically significant evidence about the negative association between the board gender diversity and transaction price in Finland, Norway and Sweden. However, no evidence about the association is found from Denmark.

Despite the main findings of the thesis suggesting that there is a negative association between board gender diversity, number of M&A deals and the transaction price, this study contains also certain limitations. First, both R-squared and adjusted R-squared are relatively low for all of the regressions carried out to test the hypotheses, which can be linked to the omission of relevant control variables. Secondly, the sample sizes to test the second hypothesis are also small as the transaction price is not often published as a part of M&A announcement. This may also impact the empirical findings regarding the relationship between the board gender diversity and M&A transaction price. Hence, the

sample sizes should be larger for the further research to obtain as accurate findings as possible.

Furthermore, the potential limitations of this study include also the issue of tokenism. Even if all of the regressions contain the dummy variables controlling the number of female board members, the variables do not provide any statistically significant results. However, tokenism is still considered as a current topic, and should also be considered also in the future research. As the number of female board members is expected to increase in the upcoming years through the new legislation, it should also have a positive impact on several board processes. Hence, going forward this interpretation would need more detailed analysis, as the findings of this thesis do not provide support to the issue of tokenism.

Going forward, the EU's new Gender Balance on Corporate Board -directive requires all listed entities in the EU member countries to have at least of 40% of the underrepresented sex among their board of directors by June 2026. This will result in increased number of female board members among listed entities both in Europe, as well as in the Nordic countries. Hence, this will lead to new research opportunities focusing on how the enhanced position of female board members impacts board competence, board selection process or the impact of increased board gender diversity on different corporate outcomes. Lastly, it is also interesting if the new legislation will eventually result in increased number of individual female board members, or will certain individual females act as board members for several corporations.

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