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Short-term value creation from M&A announcements in the Nordic market

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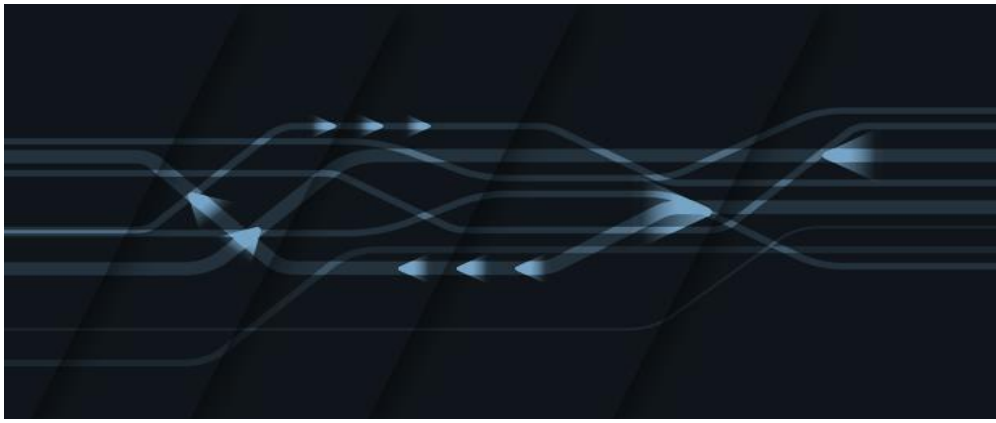

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Abstract

The aim of this thesis is to investigate whether there has been a short-term value creation from M&A announcements in the Nordic market from 2000 to 2019. Several academic papers have been conducted in the U.S., UK and Europe, but only limited empirical evidence exists in the Nordic market. The historical M&A activity level shows a clear trend that M&A has become a popular and recognized method of firms to grow. The main driver of value creation in M&As is synergies cf. neoclassical theory, whereas behavioural theory aspects, such as agency problems, managerial hubris, signalling-, and leverage effect may destroy shareholder wealth. By extension, neoclassical- and behavioural theory disagree on the efficiency of markets. This paper's findings show abnormal return to target shareholders in the days after the M&A announcement, which indicates that the market does not efficiently absorb all information immediately. Moreover, abnormal return to target shareholders in the days prior to the M&A announcement, demonstrates that the share prices reflect information that is not yet publicly available, which contradicts the semi-strong market efficiency. Therefore, this paper argues that the Nordic market lies in a grey-zone between semi-strong and strong market efficiency. Finally, it is concluded that M&A announcements in the Nordic market from 2000 to 2019 have resulted in average short-term abnormal return of 25.3% to target shareholders based on 144 M&A transactions, whereas the empirical evidence for acquirer shareholders is limited.

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1. Introduction

The main purpose of a firm is to create value, particularly for its shareholders. There are several drivers of value creation for shareholders, with growth being a main driver. Firms either grow organically or through merger and acquisition (M&A). Historically, the market has witnessed several M&A waves through the 1900s and early 2000s. (Campa & Hernando, 2004) The latest M&A wave from 2014 is still ongoing and shows the highest M&A activity level since the financial crisis in 2008 (Stata, 2020). Despite M&A waves, the historical trend shows that M&A has become a popular and recognized method of firms to grow, which is reflected in over 790,000 M&A transactions worldwide with a total value above USD57tn. In 2019 North America was the region with the largest M&A market size of USD1,996bn., whereas Europe accounted for most M&A deals with 17,456 transactions in 2019 (Statista, 2020).

Most studies show that the increased M&A activity level benefits societies and economies, as the combined entities often operate in a larger and more efficient scale due to synergies. On the other hand, research studies show that M&As do not always maximize shareholder value. The failure rate of M&As is between 70% - 90% (Christensen, Alton, Rising & Waldeck, 2011). Interestingly, target shareholders benefit substantially from M&As, in contrast to bidder shareholders who often experience economic losses. In Europe, Langetieg (1978) finds that target shareholders receive abnormal return of 10.63% compared to -1.61% of bidder shareholders. Georgen and Renneboog (2003) document that target shareholders receive abnormal return of 9%, whereas bidder shareholders receive 0.7%. Dennis and McConnell (1986) find abnormal return of 8.56% to target shareholders, and insignificant abnormal return of -0.12% to bidder shareholders. In the U.S., Jarrell and Poulsen (1989) find abnormal return of 28.99% to target shareholders compared to 0.92% of bidder shareholders. Healy, Palepu and Ruback (1992) find that target shareholders receive abnormal return of 45.6%, whereas bidder shareholders experience insignificant abnormal return of -2.2%. Kaplan and Weisbach (1992) document abnormal return of 26.9% to target shareholders compared to -1.49% of bidder shareholders. In Canada, Thorburn and Eckbo (2000) find that target shareholders receive abnormal return of 7.45%, whereas bidder shareholders receive -0.30%. Previous research studies of M&As have mainly been conducted in the U.S., UK and Europe. The Nordic market, on the other hand, has only received little attention by researchers, most likely due to its lower volume of M&A activity level compared to other countries. However, the trend of higher M&A activity is also seen in the Nordic countries, primarily due to major technology deals. Sweden is the country with highest

M&A activity level with 732 deals from 2013 - 2018, compared to its closest competitor Denmark with 335 M&A transactions. On the other hand, Denmark is the country with highest average transaction value of USD592m., followed by Finland (USD332m.), Norway (USD222m.), and Sweden (USD121m.). (Segerstrom, 2018) Therefore, Sweden accounts for substantial more M&A transactions, however with a lower average transaction value. Denmark seems to do M&A transactions of higher value. This is also supported by the fact that the two largest recent M&As are the purchase of Danish target firms, TDC A/S (USD10.7bn.) and Maersk Olie & Gas A/S (USD7.5bn.), both in 2018. (Segerstrom, 2018) The M&A activity level in the Nordic market is growing rapidly, and thus it is expected that more researchers will switch their attention to this area in the coming years.

1.1 Motivation

The aim of this paper is to investigate whether there has been a short-term value creation from M&A announcements in the Nordic market from 2000 to 2019. This is motivated by the fact that several research studies have been conducted in Europe, UK and especially the U.S., but only scarce empirical evidence exists in the Nordic countries. Therefore, this paper finds it interesting to investigate this slurred area. Additionally, this paper examines whether the value creation is affected by transaction characteristics, such as payment method, diversified vs. focused M&As, and cross-border vs. domestic M&As. Furthermore, M&A is an interesting topic that is discussed in the daily news, political agenda, and not least in both of our studies. Therefore, the event study of M&A announcements is supplemented by theories that have been addressed in both of our studies; financial statement analysis, neoclassical-, behavioural theory, and efficient market hypothesis (EMH). These are essential in order to assess whether there has been a short-term wealth creation from M&A announcements in the Nordic market. The findings of this paper are assessed relevant to investors and other researchers performing event studies on M&A announcements. Investors may benefit economically by knowing how share prices react in the days surrounding the M&A announcement date. Further, researchers of a similar field in the Nordic countries may benefit by using the empirical findings of this paper.

1.2 Problem statement

The problem statement serves as an overall guide of this thesis, and thus the theoretical framework, literature review, methodology, hypotheses, event study methodology, and empirical study. By extension, the problem statement must be specific, measurable and relevant. Therefore, this thesis formulates the following problem statement:

- What has been the short-term value creation from M&A announcements in the Nordic market from 2000 to 2019?

The topic will be analysed by answering the following research sub-questions:

- How is value creation measured?
- To what degree does neoclassical theory explain changes in short-term value creation from M&A announcements?
- How does behaviourism explain short-term anomalies?
- How does the market react upon new information?
- Does the reaction in share prices differ on transaction characteristics?

2. Limitations

This paper finds it necessary to set some limitations in order to focus the study and investigate the concrete problem statement. This section discusses both the theoretical- and practical limitations.

2.1 Theoretical limitations

The problem statement forms the foundation of the theoretical limitations, which are made in order to achieve the most efficient conclusion. The research sub-questions are a result of the theoretical limitations in order to answer the problem statement thoroughly. Therefore, this section will argue for the theoretical limitations, and thus the reasoning of the research sub-questions.

In order to answer the problem statement, it is necessary to understand how this paper defines M&As. Previous research studies and theories have defined M&As in several ways. However, the M&A definition of Brealey, Myers and Allen (2011) is the one referred to throughout this paper. They define mergers as transactions in which at least two companies are combined to form a new legal entity. Thus, the two firms with previously separate ownership are now operating under the same ownership. Their definition of acquisition has a more aggressive connotation and refers to one entity being taken over by another (Brealey, Myers & Allen, 2011). Despite that mergers and acquisitions are defined differently, this paper does not distinguish between the two. For example, other academic papers have chosen to focus solely on the difference in value creation from respectively hostile- and friendly takeovers. However, it has been assessed that this is beyond the scope of this paper. M&A is often a

mixture of a merge and acquisition. Moreover, the data collection from Capital IQ does not distinguish between mergers and acquisitions, and thus it is not possible to analyse upon them separately. Therefore, the notions acquirer- and bidder shareholders will have the same implication, similar with acquiree- and target shareholders throughout the whole paper. In addition, a market is defined as a place where buyers and sellers can engage in an economic transaction, such as exchanging goods or services. A market in economic theory is not necessarily a physical place where parties meet. For example, securities market is an online market, where buyers and sellers do not interact physically. In order for a market to be efficient it must contain large numbers of rational profit maximisers (Fama, 1970). Furthermore, this paper's problem statement focuses on short-term value creation, and refers to the short-term definition of MacKinlay (1997), who argues that short-term value creation in M&As is defined as ± 10 trading days around the announcement date. This time period ensures that all relevant information is captured by the share price. If the time period expands to more than 10 days, then the share prices may reflect other publicly announced information. Moreover, a shorter definition may mean that the share prices do not capture rumours, as well as leaked information prior to the announcement date. (MacKinlay, 1997)

Further, it is important to understand how this paper defines value creation, thus leading to the first sub-question, which involves how value creation is measured. Plenborg and Petersen (2017) argue that in financial statement analysis, value creation can be measured in several ways depending on which stakeholders that are considered. The ultimate purpose of corporations is to maximize shareholder value, and therefore this paper focuses on shareholder value creation. This means that value creation of other stakeholders from M&A announcements is not considered. Focusing on shareholder wealth creation enables the study to investigate movements in share prices, as these reflect changes in shareholder wealth through capital income. By extension, it is assessed that measuring movements in share prices limits the noise compared to measuring operating performance through accounting data, as share prices are more difficult to manipulate. Accounting data often create noise, as firms use different accounting standards, and in extreme cases managers even use manipulation. Therefore, this paper assesses that measuring movements in share prices leads to less biased results compared to accounting data. Further, shareholder value creation is measured as the abnormal return due to the M&A announcements, i.e. the return from increasement in share prices must be higher than, what the shareholders could achieve on an alternative investment with the same risk profile. (Plenborg & Petersen, 2017)

However, if stocks are not traded daily the relative return equals zero and might even occur constant if they are not traded for a longer period. This paper takes illiquid shares into account by omitting shares that are traded in fewer than 3/4 of the observed days. Still, this does not ensure that all the included shares are liquid. Several shares, especially on NASDAQ Nordic's First North list are only traded a few times a day. Fama (1970) who developed the EMH argues that an efficient marked contains large numbers of rational profit maximisers. In markets with only a few trades the share prices may not be correctly priced. Further, he argues that in markets where the seller sets an ask it requires that the buyer is willing to pay (bid) that amount. Therefore, the market needs many transactions in order for the supply and demand curves to price shares correctly. (Fama, 1970) This paper is aware of this concern, as especially companies listed on the First North list may not be liquid cf. Fama (1970). Liquid shares tend to have the lowest spread, as long as the supply and demand do not consist of major imbalances. The bid-ask spread will increase substantially in cases of significant imbalance and lower liquidity. Therefore, highly traded shares will have a lower spread, whereas illiquid shares will have a wider spread. (Damodaran, 2015) Hence, one could analyse the spread percentage ((ask - bid) / ask) of each included firm, as it is determined by the liquidity and supply and demand. However, it is assessed that this is beyond the scope of this study. Therefore, this paper assumes that the data sample is liquid by only including shares that are traded in more than 3/4 of the observed days.

Further, several theories disagree on whether share prices show the true value of the firm. Neoclassical theory underlies today's economics, thus leading to the second sub-question, which involves to what degree neoclassical theory explains changes in short-term value creation from M&A announcements. Neoclassical economists assume strong market efficiency and rational consumer behaviour, and therefore argue that share prices show the true value of the firm. However, critics argue that the market is not entirely efficient, based on empirical evidence. Therefore, this paper finds it necessary to include behavioural theory, as it is known to explain some of the market factors that neoclassical theory fails to explain. This leads to the third sub-question of how behaviourism explains short-term anomalies in the market. Combining the theoretical arguments and empirical evidence of neoclassical theory and behaviourism, this paper tries to assess the efficiency of the market, thus leading to the fourth sub-question, which involves how the market reacts upon new information. Further, previous research studies have argued that share price movements differ on specific deal characteristics, thus

leading to the fifth sub-question of whether reaction in share prices differ on transaction characteristics.

Finally, this paper focuses on theories and research studies that are assessed to be the most relevant, in order to examine to what degree M&A announcements in Nordic market affect short-term shareholder value creation. Therefore, several theories and research studies have been left out either due to lack of relevance or space limitations. The financial statement analysis is based on Petersen and Plenborg (2017). Neoclassical theory consists of many sub-theorists, and this paper solely focuses on synergies and the assumption of efficient markets. Therefore, readers may wish for wider discussion of neoclassical theory, such as perfect competition and the invisible hand. However, these among others, are deselected as a discussion of all topics within neoclassical theory is beyond the scope of this study. The chosen topics of synergies and the assumption of efficient markets are assessed to be the most relevant in order to examine whether there has been a short-term value creation from M&A announcements in the Nordic market from 2000 - 2019. This is because empirical evidence show that synergies is the main driver of value creation in M&As. Further, the assumption of efficient markets is a relevant discussion in order to assess whether the shares prices are priced correctly, and thus whether they are a reliable estimate of the abnormal return. The synergies and assumption of market efficiency is mainly based on the academic textbook of Ross, Hiller, Clacher, Westerfield, and Jordan (2011). Moreover, behavioural theory consists of many sub-theorists, and this paper focuses on the behavioural aspects; agency problems, managerial hubris, asymmetric information, signalling theory, leverage effect, and agency costs of free cash flow. In addition, radical behaviourism introduced by John B. Watson (1936) is similar to the event study methodology of this thesis; only observable behaviour (share price changes) are observed and measured. Internal mental events, such as (hubris and signalling effect) are used to explain the behaviour (share price changes). Therefore, linking radical behaviourism to the effect of M&A announcements on short-term value creation in Nordic market is likely to have considerable explanatory power.

2.2 Practical limitations

The literature review consists of 68 research studies regarding short-term value creation from M&A announcements. The research studies have mainly been conducted in the U.S., UK and Europe. This paper has not been able to find any significant comparable research studies in the Nordic market. Therefore, the academic papers from the literature review combined with the theoretical framework

serves as an inspiration for the Nordic market even though they are not directly applicable due to political, economic, cultural and legal differences. In addition, the research study by Meglio and Risberg (2011) criticizes how M&As are measured and analysed. The critical points are not elaborated further on in this paper but contributes to a critical point of view in the literature review and throughout the paper. Hence, in order to limit the biases, this paper evaluates, compares and raises critical concerns on the academic papers in the literature review. Thereafter, the discussion of previous research studies and the theoretical framework serves as an inspiration for the hypotheses. These hypotheses are then examined through an event study methodology consisting of an event study, cross-sectional regression analysis, and both parametric- and non-parametric tests to ensure the data's validity and reliability. There are more sophisticated methods and programs for measuring value creation, but the above-mentioned are assessed reasonable for answering the problem statement.

Further, the data selection for the above-mentioned event study methodology, consists of ten criteria. These criteria are based on MacKinlay (1997) and Bowman (1983). The authors are recognized within the field of event studies and argue that a data collection of 20 years of share prices is sufficient, as it captures different economic cycles and M&A activity waves. (MacKinlay, 1997) Further, the Nordic market only consists of publicly listed firms from Denmark, Sweden, Norway, and Finland. Iceland is excluded from the data collection as only one M&A transaction is found through the database Capital IQ. The reason why Capital IQ is chosen is because it is recognized and known among M&A researchers, including the researchers of this paper.

2.2 Structure

This paper is divided into eleven sections. The first section consists of an introduction and motivation that leads to this study's problem statement. The second section describes the theoretical- and practical limitations that are met during the process of writing this study. The third section presents the main theories and concepts of M&A, which are important in order to assess to what degree M&A announcements affect shareholder wealth. The fourth section discusses and raises critical concerns on previous research studies on this area. The fifth section focuses on the methodology of this paper. The sixth section formulates the hypotheses that are to be tested later in this paper. The seventh and eight sections elaborate on event study methodology and data collection, respectively. The ninth section tests and analyses the hypotheses. The tenth section concludes the on findings. Lastly, the eleventh section discusses the findings in a broader perspective.

3. Theoretical framework

This chapter aims to present the main theories and concepts of M&A. The addressed theories are important in order to understand shareholder wealth, firms' performance and the link between the two. Thus, the theories are the background for assessing whether there has been a short-term wealth creation from M&A announcements in the Nordic market. Initially, the theories of financial statement analysis and mergers and acquisitions will be discussed. Thereafter, the two positions; neoclassical- and behavioural theory will be discussed, compared and critical concerns regarding their contribution to this paper will be addressed. Lastly, theories of efficient markets are discussed in order to assess whether share prices are priced correctly, and thus reflect the true value creation.

3.1 Financial statement analysis

Plenborg and Petersen (2017) refer to three groups of decision makers in financial statement analysis; valuation, credit analysis, and performance evaluation. They make decisions in different context by using various aspects of the financial statement, depending on the individual task and the applied decision model. Therefore, they focus on different aspects of the financial statement as inputs to their decision models. This paper mainly focuses on the valuation group, since it can be directly linked to share prices, shareholder wealth, and thus short-term wealth creation from M&A announcements.

3.1.1 Valuation

The first decision makers are the equity-oriented stakeholders, such as firms, investors, corporate finance analysts, and private equity providers. Their focus is on firm valuation, where they determine the value of equity. The primary concern is price risk; whether the asset is over- or under-priced. Therefore, the main purpose for equity-oriented stakeholders is to eliminate the price risk by assessing the true value of future cash flow and dividends. (Plenborg & Petersen, 2017) When valuing companies, it is important to separate the firm's operating-, financing- and investing activities. The firm's operating activities are the primary driving forces behind the value creation and should be separated from the financing activities. Furthermore, the firm's operating activities are unique and what sets the company apart from its competitors. Therefore, operating activities are harder for competitors to duplicate compared to the financing activities. (Plenborg & Petersen, 2017) Moreover, Plenborg and Petersen (2017) present four valuation approaches; present value, relative, asset-based, and contingent claim valuation approach. The present value approach discounts future cash flow or income streams, in contrast to the relative (multiple) value approach that relies on the assumption that companies are comparable. This approach estimates the firm's value by applying prices of comparable

peers/firms. Next, the asset-based value approach measures the assets and liabilities to estimate the value of the firm's equity. The contingent claim valuation approach is also known as the real option approach and uses option models to estimate the value of assets. In addition, Plenborg and Petersen (2017) elaborate that growth is an important factor when valuing companies, since a company's entire value is based on its future growth. Stakeholders have a high interest in firms with potential growth; shareholders see growth as wealth creating, employees perceive growth as a dynamic and challenging element, which makes the firm an attractive workplace, and finally suppliers see growth as a business opportunity since it can generate greater market power. However, the authors also stress that growth may not always maximize wealth creation. Growth requires cash consumption, with some industries being more capital intensive than others. (Plenborg & Petersen, 2017)

Plenborg and Petersen (2017), among other valuation authors, are preferably used when valuing mature companies with long financial histories and consistent accounting statements. However, when valuing difficult companies, it is sometimes necessary to abandon standard valuation metrics and create new ones. Damodaran (2015) describes this process as going to the dark side of valuation. He argues that the most difficult companies to value are:

I. Young companies early in the life cycle that are operating in new business markets
II. Distressed companies with high default risk
III. Companies with inconsistent and unclear accounting statements

Damodaran (2015) argues that young companies in their early life cycle are difficult to value because of their limited history. A company's entire value is based on its future growth however it is hard to predict future cash flow without any history. Thus, one must estimate future market potential, profitability and so forth, which is harder for younger companies with no proven product/service. In addition, young companies in their early life cycles often operate with negative cash flow because growth costs liquidity, which makes it harder to predict the likelihood and extent of future cash flow. Not least, one must consider and incorporate the likelihood of bankruptcy. (Damodaran, 2015) In addition, he argues that mature companies are the easiest to value, since they have long established histories. Furthermore, they have more stable capital structures and investment policies that are set. However, mature companies in transition or with declining market share are difficult to value as it is less accurate using the history to predict future cash flow. One must reestimate the parameters and possible even abandon the history. Moreover, high debt and the propensity of distress make these companies hard to value. If the probability of bankruptcy is high and the assets are sold at a value lower than the

discounted future cash flow (distress sale value), then the valuation model will wrongly estimate the company's true value. (Damodaran, 2015) Furthermore, Damodaran (2015) argues that accounting statements are full of inconsistency. Firms often wrongly reduce capital expenditures in operating income for the actual period. However, capital expenditures are beneficial for many periods, and should be classified as an asset on the balance sheet and depreciated/amortized over its lifetime. Manufacturing companies are consistent with their classification of capital expenditures. The accounting statements are more inconsistent for i) technology and pharmaceutical companies, where R&D is often classified as an operating expense even though it is the main capital expenditure ii) brand product companies often treat all advertising costs as operating expense even though a portion of it is used to strengthen the brand name, and thus should be classified as capital expenditure iii) consulting firms and other firms that rely heavily on human capital often classify recruiting and training costs as operating expense even though these are long term investments and should be treated as capital expenditure. (Damodaran, 2015)

3.1.2 Credit analysis

In this decision-making group one finds the debit-capital-oriented stakeholders, such as banks, mortgage-credit institutions, and rating agencies. Their main task is to assess the firm's ability to pay financial obligations in a timely manner, thus mainly examining the effective interest rate and the risk of default. The default risk is determined based on the probability of default and the potential loss in a default. Therefore, there is a positive correlation between the interest rate and the firm's default risk. (Plenborg & Petersen, 2017) One could argue that looking at this decision-making group is important when assessing short-term wealth creation from M&A announcements since the interest rate has a direct effect on valuation. However, similar research studies looking at wealth creation from M&A announcements state that taking interest rate and default risk into account contribute with little explanatory power compared to other characteristics. (Campa & Hernando, 2004) In addition, this decision-making group is still indirectly contributing to this paper, for example leverage effect is used to explain why cash offers generate higher abnormal return compared to stock offers. Therefore, as Plenborg and Petersen (2017) stated, the three decision-making groups are closely combined.

3.1.3 Performance evaluation

The last group that Plenborg and Petersen (2017) refer to is the performance-oriented stakeholders, such as investors, managements, and the board. Their main concern is to align the interest of the management and shareholders in order to reduce agency conflicts. Therefore, they try to design

optimal compensation bonus contracts to align the management (agents) and the owner (principal) to ensure that the agents will act in the best interest of the principal, in order to maximize shareholder wealth. (Plenborg & Petersen, 2017) Principal and agent theory will be elaborated later in this paper. Again, one could argue that this decision-making group is relevant when assessing the value of firms. Indeed, several research studies have documented that efficient managements increase shareholder wealth. However, there is only limited and insignificant empirical evidence linking compensation bonus, management performance, and wealth creation from M&A announcements. (Campa & Hernando, 2004) Further, this decision-making group is still contributing indirectly to this paper, for example agency cost of free cash flow is used to explain why cash offers generate higher abnormal return than stock offers.

3.1.4 Share supply and demand

In financial markets, supply and demand determine share prices. Share supply changes slowly and due to factors, such as share repurchases or delisting of firms. When companies delist due to for example bankruptcy or buy their own shares at market price, they reduce the number of existing shares. This results in higher prices, all else equal. On the other hand, share supply increases when for example new shares are issued or private companies become public. Factors that affect share demand are the movements in share market, corporate performance, and interest rates. If the share market is doing better than expected it increases the demand for shares as investors anticipate higher earnings. Corporate performance, such as revenue and profits have a substantial impact on share demand. Therefore, share demands often adjust significantly to the volatility that occurs prior to firms' quarterly or yearly financial announcements. Increases in interest rate tend to decrease share demand because the risk-free rate of return increases. However, interest rates tend to increase when the economy is doing good, which increases share demand. Therefore, these two factors tend to moderate one another. (Plenborg & Petersen, 2017)

3.1.5 Sub Conclusion

In conclusion, the financial statement analysis theory is used to measure value creation and can be linked directly to share prices. Plenborg and Petersen (2017) present four different value approaches to estimate the theoretical value of a firm. The theoretical present value approach estimates the company's enterprise value based on future income streams/cash flows, that are discounted to reflect the risks and time value of money. Finally, net interest-bearing debt is subtracted in order to achieve the estimated market value of equity, which are then divided by the number of outstanding shares in order

to achieve the share price. Additionally, the following section will elaborate on various types and definitions of M&As, which serves as a basic understanding of the topic. Afterwards, neoclassical theory will be discussed, and critical concerns raised, as it assumes the market is entirely efficient, and thus that share prices reflect the true value of the firm.

3.2 Mergers and acquisitions (M&A)

The purpose of this section is to present the processes, main concepts and different types of M&A, which are essential for understanding how M&A announcements affect shareholder wealth. Further, various definitions of M&A are discussed and compared to the applied definition in this paper to highlight differences and similarities. Finally, the application of the winner's curse theory in M&As is critically discussed.

3.2.1 M&A processes and main concepts

Previously, M&As primarily occurred between the seller and the most obvious buyers, often those who reached out to the seller themselves. Therefore, the M&A process only involved a few parties. However, in the 21st century structured M&A processes have become more popular. The structured M&A process is when the participants make use of professional corporate finance consultants to execute the M&A process. (Nørbjerg & Plenborg, 2009) The authors divide the structured M&A process into three phases: preparation, negotiation, and completion of transaction (Nørbjerg & Plenborg, 2009).

In the preparation phase the sales employees establish the criterion for a successful transaction. The company's value is estimated, and the most relevant buyers are identified. The correct timing of a transaction or the initiatives that needs to be executed before a transaction are few of the considerations. Moreover, an information memorandum is prepared, and the company decides the choice of procurement method. Thus, the main tasks in this phase are determining the success criterion for the owners, the valuation, forecast model, value optimization, and timing. (Nørbjerg & Plenborg, 2009)

In the negotiation phase the seller negotiates with potential buyers. Hereby, a presentation of the company is made in order to attract offers from buyers. According to Nørbjerg and Plenborg (2009) the main tasks in this phase include the confidentiality statement, presentation to potential investors, assessment and benchmarking of the offers, the execution of management presentation, and the

negotiation process. Especially, synergies and negotiation strategies are important determinants for the final transaction price. (Nørbjerg & Plenborg, 2009)

The completion of the transaction phase involves due diligence, negotiation of the final terms of contract, the execution of the transaction (closing and signing), and the adaptation and after-care. Due diligence ensures that the transaction happens as promised, and that no red flags suddenly appear. Legally, it ensures that the buyer has the right to investigate whether the information is correct, as well as uncover conditions that have not been mentioned by the seller but may have a relevance for the final closing. (Nørbjerg & Plenborg, 2009) Further, Johnson et al. (2011) highlight that a successful integration and after-care is dependent on organizational factors, such as leadership, management and culture. Transactions mostly fail when the final integration is not executed properly, which often is due to cultural differences, poor social authority to handle rivalry, conflicts and management complexity, weak strategy, and lack of ability to exploit the synergies. (John et al., 2011)

Nørbjerg and Plenborg (2009) argue that a structured M&A process often leads to a higher wealth creation for the seller, even after taking advisory fees into account. The benefit is several competing offers from various buyers which drives up the valuation. In addition, a professional negotiation strategy is essential in driving up the valuation. (Nørbjerg & Plenborg, 2009)

3.2.2 Different types of M&A

As mentioned above there are various definitions of M&A, which are discussed and compared to the applied definition in this paper. The two main forms of M&A are either a friendly transaction or hostile takeover. In addition, one can divide M&A into four categories: mergers/consolidation, acquisition of stock, acquisition of assets, and hostile takeover.

3.2.2.1 Comparison of merger, acquisition and takeover definitions

Previous research studies frequently use merger, acquisition and takeover synonymously, even though there is a clear difference in the economic implications of mergers and takeovers (Singh, 1971). As previously stated, this paper refers to the M&A definitions of Brealey et al. (2011). However, other definitions of M&A are discussed and compared to the applied definition in this paper to highlight differences and similarities.

Sherman and Hart (2005) define mergers as two or more firms joining together, where the assets and liabilities of the selling firm are acquired by the buying firm. Acquisitions are defined as the transaction of assets, such as plants, divisions or the whole firm. (Sherman & Hart, 2015) In addition, the following authors, describe mergers in a more aggressive connotation to the applied definitions of Brealey et al. (2011) in this paper. Hampton (1989) defines mergers as a combination of at least two businesses in which only one of the firms survives. Thus, the degree of negotiation power between the acquirer and acquiree is essential and is often linked to the wealth or size of the firms. In transactions where the power is equally balanced between the two firms, a new entity is likely to emerge. (Hampton, 1989) In addition, Ross, Hiller, Clacher, Westerfield, and Jordan (2011) define mergers as ”The complete absorption of one firm by another” (Ross et al., p. 661, 2011). The bidding firm maintains its name, identity and acquires all assets and liabilities of the target firm, while on the contrary the existence of the target firm ends. A consolidation is similar to a merge, however in a consolidation both the bidding and target firm terminates their legal existence and become part of a new firm. The only distinction between these two definitions is whether a new firm is established. (Ross et al., 2011) Thus, the two definitions imply that one of the two firms dominate and absorb the other. This is different from the more “friendly” definition of Brealey et al. (2011), describing mergers as transactions in which at least two companies are combined to form a “new” legal entity. Thus, the two firms with previously separate ownership are now operating under the same ownership, which is ordinarily obtained for strategic, financial or management objectives. (Brealey et al., 2011) It is assessed that the definition of mergers by Hampton (1989) and Ross et al. (2011) is more similar to the definition of an acquisition by Brealey et al. (2011). Further, the definition of a consolidation by Ross et al. (2011) is more similar to the definition of a merger by Brealey et al. (2011), as both target and bidder’s existence ends, and a new legal entity is established.

In addition, Brealey et al. (2011) define a hostile takeover as an acquisition that is accomplished by taking over the target firm against the wishes of the target’s management. (Brealey et al., 2011) The transaction can be executed through either a tender offer or a proxy fight. A tender offer contains cash in exchange for their shares on the board. Hence, if the offer is successful, then the bidding firm is able to make any management changes as they wish. The target management can either recommend its shareholder to accept or fight the offer. The latter, in hopes of the bidding firm to raise or withdraw its current offer. (Brealey et al., 2011) On the other hand, a proxy fight is when shareholders join forces and vote out the current management or board. Thus, when a new board is in control, then

management can be replaced, and the firm's policy can be changed. A proxy fight is therefore a direct fight for control of the firm. (Brealey et al., 2011)

3.2.2.2 Types of acquisitions

There are two main types of acquisitions, either of assets or stocks. Acquisition of assets is when the bidding firm purchases most of or all the assets in the target firm (Ross et al., 2011). According to Brealey et al. (2011) assets sale is another way of disposing the "poor fits". Thus, this type of acquisition is frequently used. On the other hand, acquisition of stocks is when the bidding firm acquirers stocks in the target firm for cash, shares or other securities. (Brealey et al., 2011) The acquisition may start as a private offer, but may lead to a tender offer over time, which is defined as a public offer (Ross et al., 2011). Subsequently, the offer will be announced publicly and directly aimed towards the shareholders in the target firm. In acquisitions the target firm's shareholders can either choose to accept or reject the offer. (Ross et al., 2011)

3.2.2.3 Types of mergers

There are three main types of mergers: horizontal, vertical, and conglomerate mergers. Brealey et al. (2011) outline horizontal mergers as two firms with similar value chains merging in the same type of industry, often offering the same product/service. This type of merger is primarily intended to achieve economies of scale, market power, and reduce costs. Consequently, horizontal mergers increase diversification and reduce the competition in the industry, since the corporations can share complementary resources and skills. On the other hand, the main challenges in horizontal mergers are culture clashes between the corporations and the lack of ability to exploit complementary skills and resources in an efficient way. (Brealey et al., 2011)

Vertical mergers occur between two firms, who offer different products/services along the value chain, often seen between a manufacturer and supplier. The main goal of vertical mergers is to exploit economies of scope by improving efficiency and reducing costs. Interestingly, firms often experience that the cost of control after the merge outweighs the beneficial cost reductions. Moreover, other disadvantages are corporate cultural diversity, lack of communication, and unwillingness if the merge is a hostile takeover. (Brealey et al., 2011)

Lastly, conglomerate mergers involve firms merging in unrelated lines of businesses and industries. According to Brealey et al. (2011) conglomerate mergers are divided into two types: pure and mixed

conglomerate mergers. Pure conglomerate mergers occur when two firms merge from separate and unrelated industries, whereas mixed conglomerate mergers happen between corporations within same markets that wish to expand their products or gain access to a broader market. The advantages of the latter merger type are diversification and cross selling. On the other hand, the disadvantages are lack of focus, and not least that the bidding firm may have no experience within the new industry, which could potentially reduce the value of the merged firm. (Brealey et al, 2011)

3.2.3 Winner's curse

Based on the winner's curse theory all of the above-mentioned M&A types lead to wealth loss for bidders, under the assumption of a common value auction, where the target firm has the same value to all bidders. The winner's curse theory is introduced by Capen, Clapp & Campbell (1971), three engineers who find that oil companies participating in oil drilling rights auctions suffer lower return year after year. They decided to study the bidding behaviour at an auction for oil drilling rights in Mexico. It is classified as a common value auction, since the oil in the ground essentially has the same value to all bidders. However, the exact quantity of oil reserves at each location is unknown to the bidders, and each bidder has imperfect estimates of the true economic value. Thus, the bidder may either over- or underestimate the true economic value. More interestingly, in competitive bidding, the "winner" with the highest estimated value and thus highest bid price, is the one with the highest overestimate of the true economic value. (Capen, Clapp & Campbell, 1971) Therefore, in M&As the most "successful" bidders may not be successful based on the winner's curse theory. Brealey et al. (2011) explain the winner's curse theory as the highest bidder in an auction, who overestimates the true value of the object, since the rest of the bidders are not willing to pay that high of an amount. In relation to M&As, the acquirer is the one with the highest bid, and thus perhaps overestimating the true value of the firm. Therefore, acquirers are often "cursed", since they tend to pay more than the assets true value. (Brealey et al, 2011)

This paper has a critical point of view on the winner's curse theory in M&As. The theory assumes a common value auction, where the object essentially has the same economic value to all bidders. Therefore, by applying the winner's curse theory in M&As, one wrongly only considers the target's stand-alone value. This is not true for M&As, as the target company has different economic values to the bidders, depending on their individual potential synergies as a result of the transaction. Synergies are one of the primary economic reasons of M&As and will be elaborated further in the following section.

3.3 Neoclassical theory

The purpose of this section is to present the neoclassical theory and discuss how it differs from earlier classical economic theories. In continuation, operating-, financial-, and managerial synergies are addressed, as synergies have been documented to be the primary reason of M&As. Further, criticism of financial synergies' existence in efficient capital markets are discussed. Finally, this paper argues that neoclassical theory has considerable explanatory power in short-term value creation from M&A announcements, however it fails to explain specific transaction characteristics' effect on short-term value creation from M&A announcements.

Neoclassical theory emerged in the late 19th century to compete with earlier classical economic theories. While on the contrary, classical economists argue that cost of production is the driving factor in a product's price, neoclassical economists argue that the consumer's perception of a product's value is the most important factor in its price. Therefore, neoclassical economic argues that the value of a product/service is not determined by the cost of production but rather the utility to consumers. This leads to the main assumption of neoclassical theory; rational economic decision-making and utility to consumers are the only considerations in purchase decisions. Neoclassical economists argue that competition results in efficient resource allocation within economies, as supply and demand create a market equilibrium. (Ross et al., 2011) Based on neoclassical theory, M&As should be considered as any other investment decision. In order to satisfy the shareholder wealth maximization of acquirers, the net present value (NPV) of the M&A must be greater than zero. This implies that the added value of the acquisition exceeds the acquisition cost. Correspondingly, target firms only accept deals that maximizes the wealth of their shareholders. Therefore, from a financial perspective, M&As only take place if they maximize the value of both target- and acquirer shareholders. Goergen & Renneboog (2003), among others, find that synergies are the primary economic reason for acquisitions. (Goergen & Renneboog, 2003) This argument is supported by Berkovitch and Narayanan (1993), who argue that the main motives for takeovers are the following; synergies, agency problems, and hubris behaviour. The first motive will be described in the following, whereas the other two motives will be discussed later in this paper, under the behavioural theory section.

Ross et al. (2011) defines synergies as the positive stepwise net gain related to M&As, thus a greater combined value than the sum of the firm's separate values. (Ross et al., 2011) In the following section, three categories of synergies will be discussed; operating-, financial-, and managerial synergies.

3.3.1 Operating synergies

Operating synergies are associated with increases in operating income and higher growth, and mainly arise from; economies of scale, higher levels of growth from expanded and new markets, a combination of different functional strength, and greater market power. Operating synergies are achieved through vertical, horizontal, or conglomerate mergers.

Especially vertical and horizontal mergers often lead to economies of scale, which allows the combined firm to be more cost efficient and profitable. Post-merger a firm's operation increases, and it can exploit economies of scale, since fixed costs are spread over a larger amount of goods, thus reducing unit cost. Therefore, economies of scale are especially relevant in industries or markets, where firms have high fixed costs. In addition, synergies from higher growth in new or existing markets are more remarkable if the merger is between two firms operating in different geographical areas, either domestically or internationally. Furthermore, operating synergies may arise as a result of combining different functional strengths. The synergies are more prominent if the merger includes two firms with different functional strengths. For example, if a bidder with a solid product line, acquirers a target with strong marketing skills. The synergies are often achieved within five functional departments of the firm. In the production department, a M&A transaction can result in synergies by merging the production, reducing the number of employees and product portfolios. In addition, it will increase efficiency in the procurement, since the firm purchases larger quantities and thus has stronger bargaining power. In the sales and distribution department, synergies may be achieved by eliminating overlapping production functions. Furthermore, synergies may arise by optimizing the warehouse and distribution, thus resulting in fewer and greater production lines that will generate a faster stock turnover and efficient distribution. In the marketing department, synergies can be achieved through savings, such as on advertising and media purchase. In addition, synergies can occur through exploiting cross sales. In the research and development (R&D) and administration department, firms can achieve cost synergies through closing overlapping functions, such as administrations, headquarters, human resources, IT, law, and R&D. Furthermore, operating synergies may arise in merged firms as they often achieve greater market power and higher margins due to increase in market share, lower competition and cost efficiency. Firms often engage in merger activities to increase market share or set

up entry barriers for potential competitors, the so-called monopoly effect. Especially in horizontal mergers, as they open the opportunity of a collusion, which results in higher revenue for the market participants. (Bisgaard et al., 2004)

3.3.2 Financial synergies

Financial synergies arise from improved efficiency of financing activities and is mainly associated with lowering cost of capital. Positive financial synergies are achieved through more efficient cost of capital, tax benefits, debt capacity, and diversification, among others.

First and foremost, merged corporations increase in size, thus they often have stronger bargaining power, which lowers cost of capital. Another type of financial synergy is tax benefits, which is unrelated to improvements in cost of capital. Tax synergies may occur when a profitable acquirer of a non-profitable target reduces its tax by exploiting the net operating losses of the target firm. In addition, acquirers can increase their depreciations post-merger, which leads to savings in tax costs. However, tax synergies are often a one-time effect and not a sustainable source of value creation. (Bisgaard et al., 2004) A third financial synergy is debt capacity. Merged entities increase substantially in size and have more assets in place, which increases their debt capacity (Lewellen, 1971). This argument is also supported by Bisgaard et al. (2004), who argue that M&As result in larger combined entities, which have larger cash flow and earnings, thus increasing their debt capacity. Merged firms often pay lower interest rates compared to smaller companies because they achieve more efficient capital structures, cash flow, and thus credit ratings. Furthermore, merged firms often acquire more debt, which can reduce the overall cost of capital. A fourth financial synergy is diversification, as diversified mergers may lower the systematic business risk, which results in lower cost of capital due to reduced cost of equity. This is achieved through competitive advantages, such as increased market share and expanded customer base. The reduction in cost of equity is highly dependent of the industry and the size of the firm. It has a larger effect in unrelated mergers, and when larger public firms, acquirer smaller private firms in a different industry. (Bisgaard et al., 2004)

Critical concerns of financial synergies have been raised by several academics. The main criticism is that financial synergies cannot be achieved in an efficient capital market. Supporting this, empirical research shows that there is no evidence of a lower systematic risk. Rational investors can diversify their own risk at a much lower costs than through diversified mergers. (Montgomery & Singh, 1984; Rumelt, 1986)

3.3.3 Managerial synergies

Manne (1965) is one of the first to argue that M&As is a way for more efficient management of the target's assets. The management efficiency is reflected in either an improvement of operating performance or a higher share price. (Manne, 1965) Further, Bisgaard et al. (2004) argue that managerial synergies occur when the bidding firm's management can manage the merged firm better than the target firm's management. The bidder's management may have experience or knowledge that is beneficial to the merged firm, while on the contrary the target firm may be making inefficient decisions. In extreme cases, target's management may even be replaced. On the other hand, managerial synergies may also occur by combining the two managements. They may have different experiences and know-how, that when combined leads to even more efficient managerial decisions. (Bisgaard et al., 2004)

3.3.4 Neoclassical theory fails to explain specific transaction characteristics' impact on short-term value creation from M&A announcements

Neoclassical theory underlies today's economics however critics argue that it cannot describe economies accurately. The main concern is the assumption of rational consumer behaviour. Critics argue that consumers do not behave rationally when making purchase decisions due to emotional responses. For example, Kahneman and Tversky (1979) demonstrate the loss aversion effect based on the prospect theory, which states that individuals respond differently to negative and positive changes to their status-quo. The study shows that the pain from losing for example USD10 can only be compensated by the utility of gaining USD20. Therefore, the prospect theory argues that losses psychologically weigh twice as much as gains. In addition, it argues that individuals do not make rational decisions when estimating the likelihood of different options. For example, individuals will rather choose a smaller, sure loss, than risking a larger loss, thus most people choose to pay for an insurance. Furthermore, individuals are often unwilling to make loss financial decisions, such as selling a stock that has dropped under the originally purchase price, even if selling may be the best financial decision. (Outreville, 1998)

Additionally, neoclassical theory assumes that the market is perfect, and making abnormal return is almost impossible. Therefore, neither investors nor insiders are able to consistently beat the market and make significant abnormal return. (Outreville, 1998) Neoclassical theory argues that merger

waves leading to abnormal return are explained through shocks in the economy, technology, and regulations. Economic shocks are reflected in economic expansion, thus motivating corporations to expand in order to keep up with the increased aggregate demand in the economy. M&A is often a faster way to expand than internal growth, which leads to more M&As when the economy thrives. Technological shocks may result in changes within existing industries or even create new ones, thus forcing corporations to merge in order to achieve a stronger market position. Regulatory shocks may occur when political decisions are made to eliminate barriers, which hinders M&As. This makes it more attractive for corporations to perform a M&A. (Gugler, Mueller & Weichselbaumer, 2012) Overall, neoclassical theory argues that external market shocks lead to increased merger activities. Thus, they argue there is correlation between merger activity and the stock market, assuming that M&A only happen if it increases shareholder value for both acquirer and target. (Andrade & Mitchell & Stafford, 2009)

3.3.5 Sub conclusion

This paper assesses that the way neoclassical theory refers to M&As has considerable explanatory power, however critical concerns can still be raised. Neoclassical economists concentrate on shocks at industry levels, but this does not explain why operations with specific transaction characteristics, such as payment method, diversified vs. focused M&As, and cross-border vs. domestic M&As create shareholder wealth, even when so-called shocks are not present. The market experiences anomalies due to specific transaction characteristics, which cannot be explained through the shock theory. For example, Ravenscraft and Scherer (1987) study conglomerates and find no significant abnormal return. During the exact same period, Healy, Palepu and Ruback (1992) find significant abnormal return by considering hostile takeovers. Hence, the abnormal return cannot be explained through economic-, technological-, or regulatory shocks, since the time periods in the studies are the exact same. It rather shows that specific transaction characteristics, in this case type of merger (hostile takeover) has a significant effect on abnormal return. Furthermore, neoclassical theory argues that M&As only happen when they increase shareholder value of both target and acquirer. However, several research studies find that target firms receive significant abnormal return, whereas acquirers often experience abnormal losses. Furthermore, the literature review of this paper shows that previous researchers have documented that especially payment method affect shareholder value creation, whereas the result of the cross-border effect and focused versus diversified M&As is more ambiguous. Overall, it can be argued that neoclassical theory fails to explain specific transaction characteristics' effect on short-term value creation from M&A announcements. Therefore, the next step of this paper is to assess to

what degree behavioural theory can explain short-term anomalies due to transaction characteristics. This is done by discussing some of the most recognized theories within the M&A market, such as agency theory, managerial hubris, asymmetric information, signalling theory, and leverage effect.

3.4 Behaviourism

This section presents the theories of behaviourism and discusses how they differ from neoclassical theory. In continuation, agency theory, managerial hubris, asymmetric information, signalling theory, and leverage effect are addressed, as these are the main behavioural theories affecting shareholder value creation from M&A announcements. Furthermore, critical concerns about behavioural theory are raised. However, even critics of behavioural theory tend to agree that behavioural biases and inefficiencies sometimes happen in the short-run but are then adjusted by market forces in the long-run. Therefore, the criticism is of as less concern to this paper, as this thesis focuses on short-term value creation from M&A announcements in Nordic market.

Neoclassical theory assumes strong market efficiency and rational consumer behaviour, whereas behaviourism argues that markets are not entirely efficient and that individuals have different behaviour that is developed through interaction with the environment. The behavioural psychology school, methodological behaviourism, is formally introduced by John B. Watson in 1913 in his publication of "Psychology as the Behaviourist Views it". Behaviourists study human behaviour and argue that all people are born with a tabula rasa (blank table), thus all behaviour is developed through interaction with the environment. They criticize previous psychology theories, such as cognitivism, as it is impossible to objectively study mental processes. Behaviourists insist that only observable behaviour shall be studied, as it objectively can be observed, described and measured. They accept internal events, such as emotions and mental processes. However, they insist that internal events cannot be observed and measured objectively. (Watson, 1913) Methodological behaviourism quickly grew to be the dominant school in psychology, due to it being clearly describable and measurable. Inspired by the work of John B. Watson, Skinner introduced radical behaviourism in 1936. He also recognizes internal mental events and agrees that they shall not be the object of study. However, he argues that internal events can be used to explain behaviour. In addition, contra methodological behaviourism, radical behaviourism argues that people are not born with a tabula rasa (blank table). Radical behaviourists argue that people are born with innate behaviours, thus genes and biological aspects also affect human behaviour. (Tennyson & Volk, 2015) Radical behaviourism quickly became more

recognized than the previous behavioural school of psychology; methodological behaviourism. Furthermore, radical behaviourists often use event studies, as events can be objectively observed, described and measured. (Tennyson & Volk, 2015) This paper's event study methodology is very similar to the one of radical behaviourism; only observable behaviour (share price changes) are observed and measured. Internal mental events, such as (hubris and signalling effect) are used to explain behaviour (share price changes). Therefore, linking radical behaviourism to the effect of M&A announcements on short-term value creation in Nordic market is likely to have considerable explanatory power.

3.4.1 Agency theory

Agency theory is used to explain and resolve problems that occur in the relationship between principals (shareholders) and their agents (managements). The principals have a contract with the agents ensuring that they will act on behalf of the principals' interest. (Zimmerman, 2017) However, according to Brealey et al. (2011) employees, shareholders, and managers are assumed to act rational and towards own utility maximizing. This may lead to a self-interested behaviour from the managements, resulting in agency problems, since interests of the principals and agents are not aligned. Zimmerman (2017) addresses two primary areas that often lead to agency problems; difference in risk aversion and an incongruence of goals. Managements are often more risk averse than shareholders, due to the fear of losing their jobs in case of bankruptcy. Therefore, managements often decline positive NPV investments that are beneficial to shareholders, such as M&As. Not least, M&As often mean that the management must corporate with an entirely new management, or even that one of the managements gets fired. Thus, managements following their own self-interest may be reluctant to accept a M&A even though it is beneficial to their shareholders. In addition, the incongruence of goals reflects the difference between the principals' and agents' objectives, often leading to agency costs. (Zimmerman, 2017) Agency cost is the decline in firm value due to the agents pursuing their own self-interest at the expense of the principals. There are two main types of agency costs; direct- and indirect agency costs. Direct agency costs can be measured and traced directly to the agents, and often have no value for the principals, such as the management flying in luxury jets and staying at exclusive hotels when on business trips. Not least, the principals' monitoring of the agents are associated with direct agency costs. Indirect agency costs are difficult to measure and trace, such as when the management refuses to execute a merger due to the fear of losing their jobs or rejects positive NPV investments because of the fear of bankruptcy. (Ackert & Deaves, 2009) Furthermore, agency costs often increase with the degree of asymmetric information. Principals are aware of this, and try to minimize agency losses

through contracts, incentivizing agents to act on behalf of the principals' interest. However, this requires that the principals know each of the agent's utility function, thus are able to construct optimal contracts. A complete optimal contract, incentivizing the management and aligning their interests with the principals', is unlikely (Plenborg & Petersen, 2017). Regarding the Nordic market, Robert Spliid (2014) find evidence that agents in the Nordic countries emphasises non-financial aspects more than agents in the U.S. Managerial incentives in Nordic countries are influenced by aspects, such as loyalty, consensus and equality, which often reduces agency conflicts. This strengthens the relationship between principals and agents and increases the likelihood of agents acting in the best interest of principals. Therefore, the focus on non-financial aspects in Nordic countries compared to the U.S., reduces the agency conflict. (Spliid, 2014)

3.4.2 Managerial hubris

According to Roll (1986) managerial hubris occurs when managers have unrealistic beliefs about their ability to manage the assets of a target firm more efficiently than its current management. Bidder management often overestimates potential synergies and thus the total value of the target firm, while underestimating risk factors that may lead to corporate failure. (Roll, 1986) Brealey et al. (2011) explain managerial hubris as managers being too confident in their estimation of the benefits contra cons of a corporate takeover activity. Therefore, managerial hubris often results in bidder firms overpaying for target companies. (Brealey et al., 2011) If investors believe in the managerial hubris hypothesis, the share price is expected to be affected negatively from M&A announcements on the short-term. However, on the long-term the share price should remain unaffected (Hayward & Hambrick, 1997). In relation to M&A announcements, the researcher Thomas Clarke (2007) argues that there is a greater possibility that the Nordic market experiences managerial hubris compared to the U.S. or UK market. This is because the corporate control in the U.S. and UK is stricter than in Nordic countries. The stronger corporate control in the U.S. and UK has the purpose of eliminating inefficient management, and hence trying to ensure that managers do not act with overconfidence when estimating potential synergies from M&As. Yet, the researcher also states that a common factor for Nordic firms is to have a supervisory board to compensate for the weaker corporate control. However, the study fails to find significant empirical evidence as to whether the Nordic market experiences more managerial hubris behaviour. (Clarke, 2007)

3.4.3 Asymmetric information and Signalling theory

Asymmetric information occurs when one party in an economic transaction possesses more information than the other party. In M&As, managements often have more information than outside investors, and target firms often have more information about the true value of their firm. (Luypaert & Caneghem, 2017) This is supported empirically by Cornett, Tayneri and Tehranian (2010) who find evidence that investors predict the value of bidder firms more accurately than of target firms, due to greater asymmetric information in target firms (Cornett et al., 2010). In addition, when great asymmetric information exists between the bidder and target, the transaction is often settled through stock offers, in alignment with a risk-sharing argument (Luypaert & Caneghem, 2017). Following the classic market for lemons theory by Akerlof (1970), asymmetric information may have significant consequences for the M&A market, as asymmetric information means that buyers cannot distinguish between a high-quality target firm "peach" and a low-quality target firm "lemon". Hence, bidders are only willing to pay a fixed price that averages the value of a "peach" and "lemon". However, target firms know whether they hold a "peach" or "lemon". Therefore, given the fixed average price, only target firms that hold "lemons" are willing to sell. This means that target firms holding "peaches" will leave the market. Theoretically, this theory is recognized by several academic papers. However, Borek, Buehler and Schmutzler (2004), among others, find no empirical evidence supporting the lemon theory in M&As.

The signalling theory is used to explain how managerial decision signals the management's assessment of the combined entity's true value, and how it affects share prices after M&A announcements. Signalling theory assumes that the market is inefficient, and that asymmetric information exists between the management and the market. More specifically, it assumes that managers have more information about the firm's true value than outside investors. Therefore, investors are often influenced by managerial decisions. This is exploited by managers, who often make financial decisions to influence or even fool the market (Yook, 2003). Travlos (1987), among others, finds evidence that when bidder firms announce to perform pure stock exchange, shareholders of bidders experience significant negative return. In contrast, when bidder firms announce they are performing cash offers, shareholders of bidders receive significant positive return. (Travlos, 1987) This is because managements often strategically choose between either stock- or cash offers, depending on their assessment of their own firm and the target firm's value. Thus, managerial decisions signal the management's assessment of the combined entity's true value. Shleifer and Vishny (2003) find that overvalued bidder companies are incentivized to make equity offers, since they expect their share price to decline in the long-term,

and vice versa in cash offers, all else equal. Therefore, managerial decisions often have great influence on investors, especially when substantial asymmetric information exists between the management and the market.

3.4.4 Leverage effect

The leverage effect entails that taking more debt can result in higher return on equity. This is true, as long as the cost of additional debt is lower than the total return on the investment. According to Ross et al. (2011) firms with higher expected profits are more likely to take on more debt, and vice versa. This is because higher debt results in higher interest reduction in pre-tax profits. Therefore, firms with higher expected profits have incentives to take on more debt, in order to exploit additional interest to deduct taxes from the higher earnings. Thus, rational investors associate firms with higher debt with a high firm value. (Ross et al., 2011) The leverage effect is also supported by the pecking order theory, which entails that asymmetric information increases the cost of financing. It argues that firms should prefer financing themselves internally through retained earnings. Only thereafter, firms should use debt as a financing tool. Finally, the last option should be raising capital through new equity. (Plenborg & Petersen, 2017) Companies that finance themselves internally send a signal to the market, that they are highly profitable. If companies finance themselves through debt, they express that they are able to meet their monthly obligations, and that they believe their projects will provide positive financial return. Lastly, by issuing new shares companies signal that they think their shares are overvalued, which often decreases the share price. This is supported empirically, as bidders offering cash rather than equity in M&As, experience substantial higher return. Firms making cash offers are more likely to have a higher level of debt, all else equal. Therefore, firms offering cash may receive higher return due to the signal of higher debt; the leverage effect. (Myers-Majluf, 1984) Lastly, this section focuses on the leverage effect, and not on other risks of debt, such as an increased default risk. Damodaran (2015) refers to debt as a "double-edged sword", as it has favourable and unfavourable aspects. (Damodaran, 2015)

3.4.5 Criticism of behaviourism

Radical behaviourism and other behavioural theories have received a lot of criticism. The most relevant criticism to the subject of this paper, M&A, is the assumption of market inefficiencies. Behaviourism argues that the market is inefficient and that over- and undervalued share prices are caused by irrational behaviour, such as managerial hubris, asymmetric information, signalling theory, and agency problems (Andrikopoulos, 2007). However, critics argue that the EMH developed by Fama

(1970) is assumed to hold up quite well in the long-run, and therefore behavioural theories are not valid (Andrikopoulos, 2007). Over- and undervalued share prices seem to appear sometimes, but in random split for both parties with none of them being dominant. (Fama, 1998) Though the market occasionally experiences behavioural biases and inefficiencies, it is assumed that market forces always adjust share prices back to rational levels in the long-term. Therefore, critics argue that irrational behaviour in stock markets is irrelevant. (Lo, 2005)

The above criticism argues that behavioural biases and inefficiencies happen on the short-run but are adjusted by market forces in the long-run. Therefore, this paper assesses that the criticism is of a less concern, since this study focuses on short-term value creation from M&A announcements. Furthermore, this paper finds the argument; occasionally the market experiences behavioural biases and inefficiencies but the market corrects them, less robust. It does not explain why such anomalies are happening in the short-term, especially considering an assumption of market efficiency. This critical concern is supported empirically, as several studies have documented systematic deviations from the EMH. Among one of these is Statman (2018), who argues that there is a big gap between standard economic theory and empirical evidence, and this is where behavioural theory takes place (Statman, 2018).

3.4.6 Sub conclusion

This paper assesses that behaviourism has substantial explanatory power regarding short-term anomalies that neoclassical theory fails to explain. This is based on the fact, that empirical evidence shows systematic deviations from the EMH. Further, several behavioural aspects have been documented in the M&A market, such as agency theory, managerial hubris, asymmetric information, signalling theory, and leverage effect. The evidence indicates that the market is not entirely efficient, as assumed by neoclassical economists. Therefore, the next step of this paper is to assess the degree of efficiency in the market based on the EMH by Eugene F. Fama (1970) and other research studies, both those supporting and criticizing the EMH.

3.5 Efficient market hypothesis

This last section of the theoretical framework discusses the EMH, as it is crucial in order to assess to what degree M&A announcements affect short-term shareholder wealth creation. Therefore, it starts with an elaboration and comparison of the three market forms; weak-, semi-strong, and strong market efficiency. Further, critical concerns regarding the EMH by Eugene F. Fama (1970) are raised.

Empirical evidence of specific elements show that the market is not perfectly efficient, thus this paper assesses that the market lies in a grey-zone between semi-strong and strong market efficiency. Furthermore, it is argued that behavioural theory is useful in explaining some of the "gaps" in the strong market efficiency theory. Lastly, the EMH is broadly recognized among economists, but has also been exposed to criticism. Theorists disagree on the EMH, and some may even agree on the same elements but understand the theory differently. Therefore, this paper assesses that it is important to point out specific empirical elements when criticizing the EMH, as people are more likely to agree on specific elements criticizing the EMH rather than abstract theories.

3.5.1 Weak-, Semi-strong and Strong market efficiency

The EMH is developed by economist Fama (1970) in 1960s, and consists of three forms; weak-, semi-strong, and strong market efficiency. The three levels of market efficiency differ on the degree of information reflected in the share prices. Weak market efficiency states that all past public information is reflected in the share prices. Investors may benefit from above market averages in the short-term through fundamental- and technical analysis, however no "patterns" exist in the long-term. In such markets it is not possible to make consistently superior profit by studying past prices, earnings, and volume. (Fama, 1970) This is supported by Brealey et al., (2011) arguing that past information about prices, earnings, and volume are independent of future prices. Past prices are reflected in today's and not tomorrow's share prices. Therefore, share price changes in one period is independent of changes in the next period, thus following a random walk. (Brealey et al., 2011) They agree with Fama (1970), and argue that making consistent super profit is impossible. In competitive markets superior profits do not last, even if investors take advantage of past prices, the future prices will adjust until the superior profit is absent.

Semi-strong market efficiency states that share prices reflect past prices and all other public information. Prices adjust immediately when public information, such as annual earnings, stock splits, and proposals to merge two firms are announced. Therefore, investors cannot benefit from neither fundamental- nor technical analysis, as new information is immediately priced into securities. (Brealey et al., 2011) Fama (1970) further elaborates that share prices adjust unbiased and rapidly to any new public information in a way that investors are unable to earn excess return when studying share prices. (Fama, 1970)

Strong market efficiency states that share prices reflect all information, both past, public, and private. Fama (1970) defines it as "The market in which prices fully reflect all available information" (Fama, p. 383, 1970). This means that all stocks trade at their true value, and investors are not able to beat the market, neither through analysing the firm nor the economy, as all information is already reflected in the share prices. Therefore, insiders cannot exploit inside information to earn excess return. The strong market efficiency theory does not state that investors cannot make excess return, in fact outliers will result in investors either beating or losing to the market. Hence, investors will either be lucky or unlucky, but no existence of superior investors that consistently beat the market. Further, the theory argues that anomalies often happen due to over- or underreaction by investors. (Brealey et al., 2011)

3.5.2 Criticism of the efficient market hypothesis

The EMH is broadly recognized among economists but has also been exposed to criticism. One main criticism is that the EMH assumes that all investors perceive information identically. This is not true, as investors may have different objectives. One may seek undervalued investment opportunities, while another looks for high growth firms. These two will arrive at different assessments of the share's true value. Therefore, investors may value shares differently, which makes it impossible to determine a share's true value in an efficient market. (Malkiel, 2003) In addition, the EMH assumes that investors cannot consistently beat the market. This is in accordance with the fact that many market experts argue that, the best investment strategy is to place capital into a passive index fund. However, empirical evidence shows that some active management funds and investors indeed do consistently beat the market, one of those being Warren Buffett who managed to obtain over average return year after year. Thus, these anomalies cannot simply be explained by chances of over- and underreaction by investors. (Malkiel, 2003) Furthermore, the EMH assumes no serial correlation between share prices in an efficient market. However, several research studies have documented short-term momentum strategies in the market, suggesting patterns between shares' future prices and their past prices. Lo and MacKinlay (1999) and Malkiel Burton G. (2003), among others, find statistical, but no economic significance of short-term momentum strategies. For example, the January effect hypothesis, which states that share prices increase more in January than in any other month. As soon as the information was made public, investors incorporated the strategy into their investment decisions, thus resulting in the effect disappearing. Thus, one can argue that the movement of share prices is not a random walk. (Malkiel, 2003) Furthermore, several research studies have documented insider trading. It indicates that people within the firm take advantage of private information which is unknown

to outside investors. This contradicts the EMH, which argues that all public and private information is reflected in the share prices (Malkiel, 2003).

3.5.3 Response to the criticism of the efficient market hypothesis

However, one shall not immediately assume that the market is not efficient based on the above empirical evidence. Even though share prices may not behave as a perfect random walk, one needs to distinguish between statistical- and economic significance. The statistically significant return are really small and will often not result in excess return for investors, when taking transactions costs into consideration. Therefore, the momentum strategies in the research studies will most likely not beat a buy-and-hold strategy. (Odean, 1999) This is also supported by David Lesmond, Michael Schill, and Chunsheng Zhou (2001), who find that the transactions costs make momentum strategies non-profitable even in times where there is clear statistical evidence of positive momentum strategies. (Lesmond, Schill, Zhou, 2003) Empirical evidence shows that momentum strategies resulted in positive return during the late 1999s but highly negative return during 2000. Therefore, it is far from clear that investors can exploit momentum strategies to obtain excess return. (Malkiel, 2003) In order to understand why momentum strategies appear in the first place, Schwert (2001) argues that researchers have a tendency to focus on results that challenge existing theories, and thus once in a while a combination of a sample and a curtain technique will lead to a statistically significant result that challenges the EMH. Further, investors quickly exploit momentum strategies to the point that it is no longer profitable, for example the January effect hypothesis. (Schwert, 2001)

3.5.4 Sub conclusion

Overall, this paper understands that the EMH is broadly recognized among economists, however specific elements and market anomalies have been documented. Including:

I. The assumption that all investors perceive information identically
II. No investors can consistently beat the market
III. Momentum strategies
IV. Insider trading

This suggests that the market is not perfectly efficient. Several critics have challenged the EMH, more interestingly even the paper of Fama (1970) suggests that the market is not entirely efficient. Fama (1970) says "We shall conclude that, with but a few exceptions, the efficient markets model stand up well" (Fama, p. 76, 1970). On the other hand, Fama (1970) finds no significant evidence against the

hypothesis tests of the weak and semi-strong market efficiency, and thus states that share prices adjust efficiently to publicly available information.

This paper assesses that the market is not perfectly efficient, based on the empirical evidence and the quote from Fama (1970) himself. Therefore, the assumption of strong market efficiency by Fama (1970) and neoclassical theory lacks stronger empirical evidence. Furthermore, this paper assesses that behavioural theory is useful in explaining some of the "gaps" in the strong market efficiency theory. For example, behavioural theorists argue that individuals develop different behaviour through their interaction with the environment, and thus it is expected that empirical evidence shows that the assumption that all investors perceive information identically (strong market efficiency), does not hold.

In addition, simply assuming that, the market is semi-strong is assessed to be unjust. The semi-strong market efficiency assumes that share prices only reflect all announced public information. However, Graham, Lemmon and Wolf (2002), among others, have documented that investors often anticipate M&A announcements, which affects the share prices before the announcement is public (Graham & Lemmon & Wolf, 2002). This is also supported by the whole structure of event studies, as one must pick a long enough event window to capture rumours, as well as leaked information prior to the announcement date (MacKinlay, 1997). If the market is assumed to be semi-strong, there would be no need of an event window prior to the M&A announcements, as investors would not be able to anticipate the event prior to it being public.

In summary, this paper argues that the three market forms of Fama (1970) are not as black and white as described. It is assessed that the market lies in a grey-zone between semi-strong and strong market efficiency. This is based on empirical evidence of specific elements against a perfectly efficient market, and at the same time evidence against the simple assumption of semi-strong efficiency, as investors have been documented to anticipate information before it being public.

4. Literature review

The purpose of this chapter is to gain knowledge from previous research studies on short-term value creation in M&A announcements, primarily in the U.S., UK and Europe, as there is a lack of empirical evidence from the Nordic market. Therefore, the results from non-Nordic markets are essential for

this paper's hypotheses. The value creation is measured as the cumulative average abnormal return (CAAR) but simply referred to as abnormal return throughout this paper. In addition, all the abnormal return are significant unless otherwise stated. Estimating abnormal return requires a time period before and after the M&A announcement, which is referred as the event window. Furthermore, this paper discusses the similarities, differences, and raises analytical concerns on previous research studies.

4.1 Value creation

In summary, previous studies tend to agree that M&A announcements create wealth for shareholders of target firms with most of the wealth creation surrounding the announcement date. The abnormal return is significant regardless of industry, observation period, type of transaction (merger or tender offer), and measurement method of CAAR. In addition, abnormal return is also detected in the days prior to the M&A announcements, which suggests that the market anticipates the transaction. Furthermore, synergies seem to be the primary economic value-adding cause for acquisitions. The empirical evidence for acquirers is more ambiguous, as previous studies are evenly divided between those who report a slightly positive, negative, and zero abnormal return. The value destruction can be explained through behavioural theory with the primary reasons being agency problems, managerial hubris, and winner's curse.

4.1.1 Theoretical evidence

Goergen and Renneboog (2003) study large European acquisitions. The authors find abnormal return of 9% for target shareholders, not least a CAAR including the price run-up of 23% in the two months period up to the announcement date. However, shareholders of bidders only receive abnormal return of 0.7%. In addition, they register a significant positive correlation between the wealth effects of targets' shareholders and the total wealth effect from the merger, as well as between the wealth effect of targets'- and acquirers' shareholders. Thus, concluding that synergies are the primary economic reason for acquisitions. Furthermore, they find that hostile acquisitions trigger substantially larger share price reactions compared to friendly M&As. (Goergen & Renneboog, 2003)

Danbolt (2004) argues that acquisitions may not only be driven by maximization of shareholder wealth. The bidding company's management might be interested in maximizing their own utility; power, status, and salary. Hence, the management is more likely to pay a higher premium in order to serve their own interests, which leads to agency conflicts. This will result in higher abnormal return

for target shareholders at the expense of bidder shareholders. (Danbolt, 2004) The agency conflict theory is supported by Firth (1991) who finds that managements of UK bidder firms gain from M&As regardless of whether it is value-adding or value-destroying for their shareholders (Firth, 1991).

Roll (1986) argues that empirical evidence supports the managerial hubris theory in M&As as much, as it supports other theories, such as synergies, taxes, and inefficient target management. Management of bidder firms often overestimate the economic benefits of the merger, thus paying a higher price premium. The bid premium may therefore be a result of valuation error due to managerial overconfidence, which leads to higher abnormal return for target shareholders at the expense of bidder shareholders. (Roll, 1986)

Varaiya and Ferris (1987) find evidence of the winner's curse. They argue that in the event of multiple bidders for a takeover, the "successful" bidder is the one that overestimates the target firm's value the most, and the bid premium often exceeds the expected takeover gain. Therefore, the winner's curse is expected to increase the wealth creation for target shareholders at the expense of bidder shareholders. (Varaiya & Ferris, 1987) This is also in alignment with the findings of Bradley, Desai and Kim (1988). They find that competition between bidding firms decreases the return to acquirers and increases abnormal return to targets. (Bradley, Desai & Kim, 1988)

Asquith (1982) finds that successful target firms' average excessive return rises when the probability of a merge increases at the press and until the merge date. However, for bidding firms, Asquith (1982) finds that both in successful and unsuccessful mergers the excessive return is small and insignificant. One explanation is the level of competency of the bidding's management during the merge attempt. Hence, Asquith (1982) concludes that the failure of a merge only has little effect on the value of the bidding firm, but it is the information contained in the merge process that has an effect on the value. (Asquith, 1982)

4.1.2 Critical point of view on longer event windows

Langetieg (1978) analyses 149 M&As from 1929 to 1969 with an event window of (-120,0) days surrounding the announcement. The findings show that target shareholders receive abnormal return of 10.63% upon announcement. However, shareholders of bidders experience abnormal return of -1.61%. (Langetieg, 1978) One could criticize the length of the event window, since measuring abnormal return 120 days prior to the announcement may mean that the share price reflects other public

announced information that has nothing to do with the market anticipating the M&A announcement. Furthermore, the study does not detect any changes in share prices in the days following the announcement. Thus, the study assumes that all information from the M&A announcement is effectively captured in the share price on the day of the announcement. This is a concern, since research studies have documented evidence against the EMH. In addition, Langetieg (1978) uses the transaction completion date as event date for mergers. Therefore, abnormal return for acquisitions are measured from 120 days prior to and including the announcement date, whereas abnormal return for mergers are measured from 120 days prior to and including the date on which the certificate is filled. This is a concern, especially for bigger gaps between the announcement and transaction completion date. Example, if the transaction completion date is 150 days after the announcement, abnormal return will only be detected from 30 days after the announcement and up until the transaction completion date. This means that all abnormal return prior to and up until 30 days after the announcement will not be detected. The same concern can be raised regarding the study of Servaes (1991), who finds that target shareholders receive abnormal return of 24.64% compared to -1.07% of bidder shareholders, based on 704 M&As from 1972 to 1987 in the U.S. with an event window (-1, close). (Servaes, 1991) Furthermore, Varaiya and Ferris (1987) examine 96 acquisitions between 1974 and 1983 with a long event window (20,100). They find abnormal losses for shareholders of acquiring companies measured over the period 20 days before to 100 days after the announcement date. In 58% of the acquisitions in which the bid premium is higher than the expected takeover gain, the acquirer companies receive an average abnormal return of -14%. In the cases, which the bid premium does not exceed the expected takeover gain, acquirer companies receive an average abnormal return of 13.4%. (Varaiya & Ferris, 1987)

4.1.3 Critical point of view on shorter event windows

Dennis and McConnell (1986) study 76 M&As from 1962 to 1980 with an event window (-1,0). The researchers find that target shareholders receive abnormal return of 8.56%. Shareholders of bidders experience insignificant abnormal return of -0.12%. (Dennis & McConnell, 1986) One could criticize the small event window, as it only detects stock changes from the day prior to and on the announcement date. It is important to have a long enough event window to capture rumours, as well as leaked information prior to the announcement date (MacKinlay, 1997). Thus, the small event window may not have captured all information prior to the announcement date. This may explain the substantially lower abnormal return compared to other studies. This argument is supported empirically by Smith and Kim (1994) who study 177 tender offers from 1980 to 1986. They find that target shareholders

receive abnormal return of 30.19% in the event window (-5,5) and only 15.84% in the event window (-1,0). In addition, bidder shareholders receive insignificant abnormal return of 0.50% in the event window (-5,5) and insignificantly -0.23% in the event window (-1,0). (Smith & Kim, 1994) Furthermore, Mulherin (2000) analyses 202 incomplete acquisitions from 1962 to 1997 with an event window (-1,+1). The findings show that target shareholders receive abnormal return of 10.14% compared to 0.85% for shareholders of bidders. (Mulherin, 2000) Based on the previous discussed research studies, the small event window may have resulted in lower abnormal return. However, since Mulherin (2000) only studies incomplete acquisitions, one may expect that a longer event window would mean that the market has a higher probability of anticipating the transaction failure. Thus, unlike previous stated, a longer event window in this study may lead to lower abnormal return.

4.1.4 Tender offers create higher shareholder wealth

Bradley, Desai, Kim (1998) examine 236 tender offers from 1963 to 1984 with an event window (-5,5). The researchers find steady abnormal return around 31% during the period, whereas bidder excessive return increases from roughly 19% to 35% during the same period. (Bradley, Desai & Kim, 1998) However, one must consider that the sample size only consists of tender offers, which empirically has shown to generate higher abnormal return. This is supported by Loughran and Vijh (1997) who study 947 acquisitions from 1970 to 1989 with an event window (-2,1250). The findings show that target shareholders receive abnormal return of 126.9% in tender offers compared to 29.6% in mergers. One must consider that the five-year post acquisitions event window may explain the substantial higher abnormal return compared to other studies. However, it does not change the fact that tender offers generate significantly higher abnormal return than mergers. (Loughran & Vijh, 1997) Furthermore, Jarrell and Poulsen (1989) study 526 tender offers in the U.S. from 1963 to 1986 with an event window (-20,10). The researchers find abnormal return of 28.99% to target shareholders and 0.92% to bidder shareholders. (Jarrell & Poulsen, 1989) In roughly the same time period, Lang, Stulz and Walkling (1991) analyse 87 successful tender offers with an event window (-5,5). The findings show abnormal return of 40.3% and an insignificant 0% to bidder shareholders. (Lang, Stulz & Walkling, 1991) Interestingly, the study by Lang et al. (1989) shows substantially higher abnormal return for target shareholders compared to Jarrell and Poulsen (1989). This may be because the latter only studies successful tender offers, thus resulting in higher abnormal return. This argument is supported empirically by the following researchers, whom all find higher abnormal return for successful tender offers compared to unsuccessful tender offers; Dodd and Ruback (1977), Kummer and Hoffmeister (1978), Bradley (1980), and Asquith, Bruner and Mullins (1983). Healy, Palepu and Ruback

(1992) study the 50 largest U.S. mergers during 1979 to 1984 with an event window (-5,5). The researchers find abnormal return of 45.6% to target shareholders and an insignificant -2.2% to bidder shareholders. (Healy, Palepu & Ruback, 1992) During roughly the same time period, Kaplan and Weisbach (1992) find abnormal return of 26.9% to target shareholders and -1.49% to bidder shareholders, based on 209 M&As with an event window (-5,5). (Kaplan & Weisbach, 1992) The substantial difference in abnormal return may be due to the fact that the first study only examines mergers and larger firms, whereas the second study includes smaller firms and both mergers and tender offers.

4.1.5 M&As in the financial sector

Campa and Hernando (2005) study M&As in the European Union financial industry in the period 1998 to 2002. They state that the main efficiency advantages for M&As in the financial sectors are i) economies of scale ii) cutting costs by avoiding overlapping operations. In addition, they find that target shareholders receive abnormal return around the date of the announcement, whereas bidder shareholders on average experience zero abnormal return. (Campa & Hernando, 2005) Beitel and Schiereck (2001) study 98 large national and international M&As within the financial sector, including banks, insurance, and security companies. The findings show that target shareholders receive considerable abnormal return, while the result for bidder shareholders is insignificant. More interestingly, they find a positive correlation between negative abnormal return and the size of the acquiring bank. In addition, international mergers within Europe tend to destroy shareholder wealth. (Beitel & Schiereck, 2001) DeLong (2001) studies 280 M&As in which at least one party is a bank from 1988 to 1995 with an event window (-10,1). The findings show that target shareholders receive abnormal return of 16.61% compared to -1.68% of bidder shareholders. (DeLong, 2001) In addition, Houston, James and Ryngaert (2001) study 64 deals in which both parties are banks from 1985 to 1996 with an event window (-4,1). They find abnormal return of 20.80% to target shareholders. More specifically, the findings show lower abnormal return of 15.58% from 1985 to 1990 compared to 24.60% from 1991 to 1996. In addition, the findings show abnormal return of 4.64% to bidder shareholders from 1985 to 1990 and an insignificant -2.61% from 1991 to 1996. (Houston et al., 2001) One could criticize the relatively small event windows, especially after the announcement date. Thus, all information from the announcement may still not be captured in the share price due to the slight evidence against the strong market efficiency (Fama, 1970).

4.2 Method of payment

In summary, previous research studies show that cash offers compared to stock offers create higher abnormal return for shareholders of both the target and bidder firm. Target shareholders' abnormal return vary a lot by the payment method, and shows positive abnormal return for cash offers, and either negative or substantial smaller abnormal return for equity financed offers. In addition, bidder shareholders also receive higher abnormal return from cash offers. The three primary theories explaining why cash offers generate higher abnormal return are:

I. Signalling effect
II. Leverage effect
III. Agency costs of free cash flow

Even though these theories are recognized by several research studies, there is a lack of convincing empirical verification, especially for the signalling effect. This is mainly because it is difficult to measure the information asymmetry with reliable proxies (Cornett et al., 2011).

4.2.1 Signalling effect

The major difference between cash and stock offers is that cash offers are immediately taxable, thus seller must pay tax on gains. In stock offers the seller can defer paying tax. Not taking other considerations into account, one would only expect to see stock acquisitions. However, cash acquisitions may lead to tax savings because dividend payment are taxed as personal income. Thus, if personal income taxes on dividends are higher than capital gains taxes, then cash acquisitions may be more tax efficient. (Harris, Franks & Mayer, 1987) This is supported by King (1986) who argues that, cash acquisition is an efficient way of distributing trapped equity to shareholders in the absence of share repurchases (King, 1986).

Another major consideration is that the market and management do not have the same information at all time, thus leading to information asymmetry. When information asymmetry is present, the management's choice of payment method signals their assessment of the true value of the combined entity's assets. Rational acquirers would pay in cash (stock) if they believe their own assets are undervalued (overvalued). The signalling effect is documented by Schleifer and Vishny (2003), who developed a model showing that bidders have incentives to make cash offers for undervalued targets. Therefore, the market should react negatively to all-equity acquisitions, which results in abnormal losses for shareholders of both target and bidder firms. (Shleifer & Vishny, 2003) In addition, the Myers and Majluf (1984) model states that debt is preferred to equity when external finance is

required, thus supporting the pecking order hypothesis. The pecking order theory states that firms due to asymmetric information prioritizes finance resourcing in the following order; internal financing (retained earnings), external financing (debt issuance), and external financing (equity issuance). Myers and Majluf (1984) assume that management know more about the firm's true value than investors. Therefore, debt finance is more favourable to existing shareholders than stock issue, since it signals that the firm's assets are undervalued, which drives up the share price. In addition, firms making cash offers are more likely to have a higher level of debt, all else equal. Therefore, companies performing cash offers may receive higher abnormal return due to financing through debt. (Myers & Majluf, 1984)

The criticism of several previous research studies is that they do not consider, that mergers are often paid through stocks, whereas tender offers are paid through cash. Tender offers generate higher shareholder wealth, as previously stated in this paper. Therefore, research studies may wrongly claim that cash offers lead to higher abnormal return than due to majority of them being tender offers. Travlos (1987) takes this into account and finds that acquirers announcing to perform pure cash offers experience abnormal return, whereas pure stock offers lead to abnormal losses. The findings are significant regardless of the takeover bid type (merger or tender offer) and bid outcome. (Travlos, 1987) However, criticism can also be raised against Travlos (1987) since the study does not adjust for relative firm size, which has been documented to be related to abnormal return by Asquith, Bruner and Mullins (1983), among others.

4.2.2 Empirical evidence from the UK and the U.S.

Harris, Franks and Mayer (1987) examine over 2,500 acquisitions in the UK and U.S. over the period 1995 to 1985. The researchers find that acquirers tend to make cash offers for low-valued targets and equity offers for over-valued targets. In both countries target shareholders gain substantially higher abnormal return from cash offers even after controlling for the takeover bid type. In the U.S., bidders making all-equity offers experience abnormal losses, whereas the result is insignificant in the UK. This may be because equity offers in the UK typically are underwritten. Interestingly, they find that bidding firms making cash offers receive substantial higher abnormal return post-merger, compared to equity offers. This indicates that in cash offers there is a higher increase in share prices post-merger, which may mean that the target company is undervalued prior to the merger. This is in alignment with the argument that bidders make cash offers for undervalued companies. (Harris, Franks & Mayer, 1987)

One could criticize the study's comparison between the UK and the U.S., since there are well-documented differences in the share price reaction to announcements in the two countries. In addition, there are significant institutional differences in regulations, which affects taxation and corporate financing activities. These regulations have been documented to affect the choice of payment method. More specifically, the UK government has been critical towards share repurchases, whereas the U.S. government has had a more liberal attitude. (Harris, Franks & Mayer, 1987)

4.2.3 Leverage effect

Ross et al. (2011) argue that the advantages of the leverage effect outweigh the disadvantages. Two of the most recognized arguments are:

I. Interest reduction in pre-tax profits
II. Signalling that return on equity on new projects are higher than the cost on debt

Therefore, the leverage effect signals that the firm expects higher value in the future. Investors are thus more likely to pay a premium for the firm's stock, which leads to higher abnormal return for the current shareholders. In addition, firms making cash offers are more likely to have a higher level of debt, all else equal. Therefore, companies performing cash offers may receive higher abnormal return due to the leverage effect. (Ross et al., 2011)

4.2.4 Agency costs of free cash flow

Jensen (1986) introduced the hypothesis of agency costs of free cash flow, which states that managers with a lot of free cash flow are more likely to spend it on negative NPV investments, instead of distributing it out to shareholders through either dividends or share buyback. The main argument is that shareholders benefit from anything (including cash acquisitions) that can decrease agency costs by preventing managers from spending free cash flow wastefully. (Jensen, 1986) Based on Jensen's theory, Lang, Stulz and Walkling (1991) test the free cash flow hypothesis on bidder return using Tobin's q (Total Market Value of Firm/Total Asset Value of Firm) in order to distinguish between firms with good and bad investment opportunities. A high Tobin's q implies that the firm is overvalued, since its stock are more expensive than the the replacement cost of the firm's assets. The researchers find that the relation between targets' abnormal return and cash flow differs significantly depending on the level of Tobin's q. In addition, for bidding firms with a low Tobin's q the abnormal return is significantly negatively related to cash flow, but not for bidder firms with a high Tobin's q. Therefore, the greater free cash flow undervalued bidders possess, the lower is the shareholder wealth

creation. (Lang, Stulz & Walkling, 1991) In addition, Goergen and Renneboog (2001) examine the free cash flow hypothesis from the point of view of 240 London Stock Exchange target firms. They argue that large cash flow is attractive to target firms as it signals the acquiring firm has strong financing. However, they do not find significant evidence of this hypothesis. (Goergen & Renneboog, 2001) In addition, Yook (2003) finds that mature companies with large free cash flow, low growth, and unspent borrowing power are more likely to do low-value or even value destroying acquisitions, thus leading to agency costs (Yook, 2003). One could criticize the study for not controlling for differences in required cash holding depending on factors, such as company size and industry. Harford, Mansi and Maxwell (2008) take this into account by analysing firms' cash reserves in M&As in the U.S. They find that companies with weaker corporate governance structures have smaller cash reserves. These firms often choose to distribute cash to shareholders through repurchasing rather than increasing dividends. Weakly controlled managers are more likely to spend cash on capital expenditures and acquisitions, instead of saving it. The researchers describe this phenomenon as opportunistic beliefs, and state that excessive cash is the primary driver for opportunistic beliefs. However, the evidence that excess cash explains the overall relation between profitability and governance is only limited. (Harford, Mansi & Maxwell, 2008)

Furthermore, in cash acquisitions the acquirer either uses up saved liquidity or issue debt, thus forcing the management to continuously pay out future cash flow. The high leverage makes the management work harder due to the threat of bankruptcy. In addition, it reduces the agency costs of free cash flow, since managers have less cash flow available for spending. Managers with too much liquidity often overinvest, such as acquiring firms that are less profitable. Hence, cash offers can reduce agency costs of free cash flow, since debt creation legally binds managers to pay out future cash flow, thus making their interest more aligned with the interest of stockholders. (Yook, 2003) An important criticism of the study of Yook (2003), among others, is that they only analyse the relation between abnormal return and level of leverage prior to the acquisition. Yet, it is important to analyse the change of level post the acquisition and its correlation to shareholder return. Maloney, McCormick and Mitchell (1993) take this into account by analysing the relation between acquirer return at the announcement and the level of leverage prior to the acquisition as well as the leverage change post acquisition. They find a significant positive correlation between acquirer return and both pre-existing level of leverage as well as change in leverage. Thus, concluding that debt makes managerial decision more efficient. (Maloney, McCormick & Mitchell, 1993)

4.3 Diversified vs. focused M&A

Theoretically, there has been arguments for diversified mergers both increasing and reducing shareholder wealth. Research studies and theoretical arguments developed in 1960 to 1980 generally address the benefits of diversification:

I. Managerial economies of scale
II. Economies of scope
III. Internal capital markets
IV. Joint taxation

In the 1980s firms show a change towards focus and specialization. For example, in 1988 55.7% of exchange-listed American companies had a single business segment compared to 38.1% in 1979. The change is primarily a result of diversified companies' failure to exploit financial economies of scope; reliance on internal capital markets and/or coinsurance of debt. (Comment & Jarrell, 1995) Thus, more recent research papers have criticized the four theoretical arguments above. Despite theories showing both benefits and disadvantages of diversification, empirical evidence broadly agrees that the costs outweigh the benefits. Thus, diversified M&As tend to generate lower shareholder wealth.

4.3.1 Theoretical evidence

M&As may be an effective way to expand a firm's business and can typically be done through a focused acquisition where the bidder acquirers a firm within the same industry or a diversified acquisition where the bidder acquirers a firm within another industry. Chandler (1977) argues that diversified corporations have a more specialized management team than the firms would have separately, since their skillset is more focused and specialized towards coordination. Therefore, they make better managerial decisions and are more cost efficient. (Chandler, 1977) On the other hand, Myerson (1982) argues that conglomerates have higher cost due to the information asymmetry that arises between the top management and divisional managers. This is especially true if the information within the firm is more dispersed. (Myerson, 1982)

Nayyar (1993) argues that diversified corporations are more likely to exploit economies of scope; the joint cost of producing multiple outputs is less than summing the costs of producing each output individually. Cost-savings can be achieved by sharing tangible assets from one firm to another, such as resources, equipment, and facilities. The firm can also share intangible assets, such as know-how

and operational skills. Sharing these assets makes the firm able to maximize limited constraints, and thus exploit economies of scope. (Nayyar, 1993)

Weston (1970), Williamson (1975), Stein (1997), Maksimovic and Philips (2007), and Gertner and Scharfstein (2013) all argue that internal capital markets can be more efficient for resource allocation compared to external capital markets. The primary economic reason of internal capital markets is the avoidance of deadweight transaction cost in external capital markets. Diversified corporations have bigger internal capital markets, thus allocating resources more efficiently and avoiding transaction costs from external capital markets. (Weston, 1970) On the contrary, the cost of internal resource flexibility is explained through the overinvestment agency problem. For example, diversified corporations have access to larger free cash flow than if the entities are separate, and Jensen (1986) argues that managers of companies with larger free cash flow are more likely to pursue low-value or even value destroying investments. Therefore, Jensen (1986) argues that diversified companies invest in less profitable projects than if the two entities are separate. (Jensen, 1986)

Furthermore, Lewellen (1971) argues that combining companies with imperfectly correlation income streams gives diversified entities a greater debt capacity. The benefits are increased interest tax shields and tax advantages, due to the tax treatment of economic losses and gains in joint taxation. (Lewellen, 1971) Majd and Myers (1987) argue that undiversified entities have a tax disadvantage, since they pay tax of positive income but receive no tax refund when income is negative. Thus, if one of the companies experience a loss, the combined entity pays less in taxes than if the entities are separate. The tax disadvantage is only slightly reduced by the governments tax carry back and carry forward system. (Majd & Myers, 1987) In contrast, Meyer, Milgrom and Roberts (1992) argue that diversified companies have a greater loss of failing business segments. If the company is operated on its own, the value loss of the failing business cannot be below zero. However, if two entities operate as a conglomerate with cross-subsidies the value can be negative. (Meyer, Milgrom & Roberts, 1992)

4.3.2 Empirical evidence

Previous empirical evidence tends to agree that diversified companies lead to lower abnormal return. Doukas, Holmen and Travlos (2001) analyse Swedish acquisitions from 1980 to 1995 and find that acquisitions within the same industry generate a higher value due to the exploitation of strategic synergies. In addition, Comment and Jarrell (1995) find a small economic penalty to diversified companies when comparing stock return in focused and diversified acquisitions. Berger and Ofek (1995)

examine U.S. M&As and compare the sum of the target's and acquirer's stand-alone values to the new entity's actual value. The findings show that diversified mergers during 1986 to 1991 suffer a value loss of 13%-15%. The value loss is smaller when acquirer and target are in the same two-digit SIC code. Furthermore, they find that the value loss is only reduced slightly by the benefits of tax diversification. (Berger & Ofek, 1995) If one must be critical, then the diversification penalty stated in several research studies, including the ones above, may not show the true diversification discount. The studies compare the sum of the two firms' stand-alone values to the new entity's actual value, thus implicitly assuming that, when valuing the divisions of conglomerates, stand-alone companies are a valid benchmark. This can be misleading, since the discount may be a result of firm characteristics that make firms diversify. Not taking these firm characteristics into account, wrongly leads to an overestimation of the diversification discount. This is supported by the fact that research studies with focus on the endogeneity of the diversification show a lower diversification discount (Campa & Kedia, 2001). In addition, Graham, Lemmon and Wolf (2002) find that target firms prior to acquisitions often experience abnormal losses due to firm characteristics. More specifically, targets have an abnormal return averaging -10% in their last year of operation as stand-alone companies. Acquirers experience a -7% reduction in abnormal return prior to acquisitions, which can be explained by the already "discounted" targets. Therefore, they conclude that firms doing diversified mergers have specific firm characteristics; more likely to be "struggling" prior to the acquisition, which wrongly reinforces the diversification discount. (Graham, Lemmon & Wolf, 2002)

Contradictory to the overall findings of previous empirical evidence, is the study of Maquieira, Megginson and Nail (1998). They analyse 47 conglomerate and 55 non-conglomerate stock-for-stock mergers in 1963 to 1996 with an event window (-60,60). The findings show that target shareholders in conglomerate mergers receive abnormal return of 41.65% compared to 38.08% of non-conglomerate mergers. Thus, shareholders of conglomerate mergers receive slightly higher abnormal return. (Maquieira, Megginson & Nail, 1998) However, this paper finds several critical concerns of the study of Maquieira et al. (1998). First and foremost, they do not take the payment method into account. Stock offers generate substantially lower shareholder wealth, as previously stated in this paper. Thus, if the study also included cash offer mergers, the abnormal return for both conglomerate and non-conglomerate mergers may have been higher. In addition, they only examine mergers, which have been argued to generate substantial lower abnormal return compared to tender offers. Therefore, if the study had included tender offers one would have expected even higher abnormal return. Lastly,

they do not distinguish between unrelated and related diversification. Related diversifications may outperform conglomerates with the main argument that related diversifications can use their skills and resources in related markets. Thus, economies of scope often result from related diversifications. (Rumelt, 1974)

4.4 Domestic- vs. cross-border transactions

Theoretically, the beneficial arguments of cross-border transactions have been i) market access ii) exchange rate effect iii) international portfolio diversification. However, recent studies have challenged the exchange rate effect hypothesis, claiming that it adds no economic value to cross-border transactions. In addition, research studies are critical towards the third argument, arguing that investing in multinational firms is not a valid substitute to international portfolio diversification. On the contrary, the primary theoretical obstacles of cross-border transaction are political, economic, cultural, legal, and transactions barriers. Similar to the theoretical arguments, the empirical evidence is slightly ambiguous. However, a partial majority of previous research studies tend to agree that the cross-border effect decreases shareholder wealth.

4.4.1 Theoretical evidence

Pringle (1991) argues that the main motive for foreign acquisitions is market access. International acquisitions are motivated by needs, such as expanding into new markets, operating locally, and economies of scale. Foreign companies who find market access important will most likely pay a higher premium bid. Higher premium bids will result in higher abnormal return for target shareholders, all else equal. Bidder shareholders can benefit too, if the higher premium bid does not exceed the expected economic benefits of synergies from the cross-border transaction. (Pringle, 1991)

Froot and Stein (1991) examine exchange rate effects on M&As in the U.S. They argue that foreigners holding a bigger proportion of their wealth in non-dollar currency, experience a relative higher wealth position when the dollar depreciates. This lowers their relative cost of capital and enables them to bid more aggressively for assets. In this case, one will expect higher bid premiums in cross-border transactions, which leads to higher abnormal return for target shareholders, possibly at the expense of bidder shareholders. (Froot & Stein, 1991) In addition, Kang (1993), Servaes and Zenner (1990), Harris and Ravenscraft (1991), and Swenson (1993) all find that target shareholders receive higher abnormal return in cross-border acquisitions when the currency of the acquirer's country is relative stronger compared to the target's country. Nevertheless, not all research studies support the exchange

rate effect. Cakici, Hessel and Tandon (1996) and Dewenter (1995) find that the exchange rate effect has no significant impact on abnormal return. In addition, Vasconcellos and Kish (1998) argue that while a devalued dollar enables the foreign acquirer to buy American companies at a discount, the following dollar cash flow post-merger is correspondingly less valuable, when exchanged back into the foreign currency at the current exchange rate. Thus, fluctuations in exchange rates should not affect acquirers bid. (Vasconcellos & Kish, 1998)

Furthermore, empirical studies have documented that international portfolio diversification results in lower volatility of return and simultaneously higher average return compared to well-diversified domestic portfolios. Investors can benefit from international diversification through either investing in i) different stock markets ii) multinational firms. (Jacquillat & Solnik, 1978) Markides and Ittner (1994) argue that cross-border acquisitions are beneficial to investors under certain market inefficiencies. Multinational corporation allows investors to diversify their portfolios indirectly. In addition, the management of the company may be able to make better investment decisions than the shareholders due to information asymmetry. If international portfolio diversification is valuable for foreign bidders, one would expect higher abnormal return for target shareholders in cross-border acquisitions. (Markides & Ittner, 1994) Yet, Jacquillat and Solnik (1978) among others, find empirical evidence that investing in multinational firms is not a valid substitute to international portfolio diversification. Hence, simply diversifying through cross-border acquisitions does not result in an efficient portfolio. (Jacquillat & Solnik, 1978)

4.4.2 Empirical evidence

Danbolt (2004) analyses the wealth effect of target shareholders based on 514 domestic and 116 cross-border acquisitions in the UK from 1986 to 1991. Contradicting the overall conclusion from majority of research studies, Danbolt (2004) finds that domestic targets receive abnormal return of 18.76% compared to 19.60% of cross-border targets. However, the small cross-border effect of 0.84%-points is not statistically significant. In addition, the findings indicate no support of the market access theory. Furthermore, whether the acquirer already has operations in the UK has no significant impact on the abnormal return to UK targets. Contradictory to the exchange rate effect theory, the researcher finds that target shareholders receive insignificant higher abnormal return, when target country has a relatively weaker currency compared to the acquirer country. In addition, there is only limited empirical evidence of the international portfolio diversification hypothesis. Danbolt (2004) concludes that the cross-border effect seems to be driven by payment method; cash offers lead to higher abnormal return

and simultaneously a larger proportion of cross-border acquisitions are cash offers. Thus, cash offers seem to account for most of the cross-border effect of target companies. The researcher also find evidence that other bid characteristics, such as bid outcome and industrial sector have a significant effect on the cross-border effect. When controlling for payment method and other bid characteristics there is no evidence of a residual cross-border effect for target companies in the UK. (Danbolt, 2004)

Campa and Hernando (2004) analyse European M&As in the period 1998 to 2000. They find that both target and bidder shareholders receive lower abnormal return when the merger involves companies from different countries. The primary obstacles, such as political, economic, cultural, legal, and transaction barriers limit the probability of a successful merger, and thus reduces the expected value. (Campa & Hernando, 2004) The findings are also supported by Martynova and Renneboog (2006) who examine M&As in 28 continental European countries, the UK, and Ireland from 1993 to 2001. They find higher abnormal return for shareholders of target firms in domestic acquisitions compared to cross-border M&As. The findings are significant even after taking into account payment method (cash or equity), takeover type (negotiated acquisitions or tender offer), and bid attitude (friendly or hostile). (Martynova & Renneboog, 2006) Goergen and Renneboog (2003) reach the same conclusion based on European M&As, even after controlling for characteristics, such as takeover regulation, information transparency, ownership concentration, and shareholder rights. (Goergen & Renneboog, 2003) The empirical evidence is also supported in the U.S., where Hazelkorn, Zenner, and Shivdasani (2004) find higher abnormal return for domestic acquisitions based on 1,500 completed transactions. In addition, Kang (1993) examines Japanese M&As in the U.S. The findings show that both Japanese bidders and U.S. targets gain abnormal return from cross-border transactions, however they are lower than comparable domestic transactions. Consistent with previous literature, bidder characteristics and exchange rate effects are useful when explaining the cross-border effect. (Kang, 1993) Furthermore, Thorburn and Eckbo (2000) analyse 332 domestic and cross-border M&As between Canada (domestic) and the U.S. (foreign) from 1964 to 1983. The researchers find that target shareholders receive abnormal return of 7.45%, whereas bidder shareholders receive -0.30%. More interestingly, shareholders of both target and bidders receive higher abnormal return in domestic compared to cross-border transactions. (Thorburn & Eckbo, 2000) One could criticize the study of Thorburn and Eckbo (2000) for not adjusting for relative firm size, which has been documented to be related to abnormal return by Asquith, Bruner and Mullins (1983) among others. In addition, they use an event window (-40,0). Measuring abnormal return 40 days prior to the announcement may indicate that other

information that has nothing to do with the market anticipating the M&A announcement is reflected in the share price. Furthermore, by not measuring abnormal return on the day after the announcement, Thorburn and Eckbo (2000) assume that all information from the M&A announcement is effectively captured in the share price on the day of the announcement. This is a concern, since research studies including Fama (1970) finds slight evidence against the strong market efficiency theory.

4.5 Critics to measuring M&A performance

This last section in literature review elaborates on a research study that challenges the way of measuring and analysing M&A performance. This study emphasises that it is important to argue for every decision and choice made. According to Meglio and Risberg (2011) it is not possible to talk about M&A performance as a universal construct. They challenge the dominant way M&A performance is understood and suggest different perspectives to identify the inconsistency in M&A research. Especially, how studies are measuring organizational performance and the methods used.

First and foremost, they argue that if M&A performance is understood as an umbrella construct, then M&A performance has various meanings (Meglio & Risberg, 2011). Umbrella construct consists of ambiguous concepts and diverse sets of phenomena (Hirsch & Levin, 1999). Thus, the research study states that one of the problems is the lack of clarity in constructing different measures and comparing these results to find explanations of the variance in performance. They recommend that the different measures all have something to explain about the M&A performance, but they are all different stories expressed for different audiences. The problem occurs when research studies treat M&A performance as a unitary construct and generalize the results. (Meglio & Risberg, 2011)

Further, the research study assesses what, where, how, and when M&A performance are measured from a sample of 101 journals. The research study, among others, reveals that the time scale appears to be taken for granted and not clearly defined, and the reason why studies primarily choose market- or accounting-based measures are because of objectivity and accessibility. They criticize that studies lead to the result that M&A performance is only for market and accounting issues, but instead highlights that M&A performance is related to different indicators and dimensions, and hence suggest that studies should use various types of measures in the different domains. Lastly, they argue that studies use and rely on former studies' findings even if it may not be suitable for their research questions. Overall, the research study criticizes the method and measurement of M&A performance. It implies

that in order to understand M&A performance, studies must not only consider the scope conditions, but also the operationalization and conceptualization of the construct. Hence, various performance measures express different stories for different audiences. (Meglio & Risberg, 2011)

4.6 Sub conclusion

In conclusion, the empirical evidence from previous research studies shows that target shareholders receive substantial higher abnormal return than acquirer shareholders. In addition, cash offers yield higher abnormal return than stock offers. Further, focused transactions yield higher abnormal return than diversified. The evidence from domestic- compared to cross-border transactions is more ambiguous. However, recent research studies tend to agree that domestic transactions result in higher abnormal return. Lastly, focused transactions yield higher abnormal return than diversified. These results assist with an understanding of short-term value creation from M&A announcements, and how the results have developed through the years. The previous research studies are mainly from non-Nordic markets, which means that they are not directly applicable, yet attributes with inspiration and knowledge around the topic. Furthermore, several critical points in the literature review on how to measure M&A performance have been discussed. This paper takes these critical concerns into consideration, by clearly defining and arguing for the choices regarding the data collection and event study methodology. Hence, the next chapter will elaborate further on the applied method, collected data, and data quality.

5. Methodology

This chapter is divided into three sections, initially the method used for the research, secondly the collected data, and thirdly the quality of the data. This paper is examining the short-term value creation from M&A announcements in the Nordic market through an event study. According to MacKinlay (1997) “Using financial data, an event study measures the impact of a specific event on the firm’s value” (MacKinlay, p. 13, 1997). Therefore, event studies are known to measure changes in share price due to effect of events, such as M&A-, issues of shares-, and dividends announcements. (MacKinlay, 1997) The methodology of event studies will be elaborated further on in chapter seven.

5.1 Philosophy of science

This study analyses short-term value creation from M&A announcements by executing an event study. Therefore, a statistical method is applied to analyse the data, share prices. Similar to radical

behaviourism, this study focuses on observable behaviour (share prices), which are then explained through internal mental events (agency theory, hubris and signalling theory) (Tennyson & Volk, 2015).

According to Yin (2009) a research design is defined as: "a logical plan for getting here to there, where here may be defined as the initial set of questions to be answered, and there is some set of conclusion (answers) about these questions." (Yin, p. 26, 2009). Thus, the design is the plan that connects the empirical data to the study's research questions and then conclusion. This paper uses a similar design, as the empirical data on M&A announcements is tested in our hypotheses. The results in combination with relevant theories then answer the sub-questions, which then answer the problem statement of what the short-term value creation in the Nordic market is (conclusion). Yin (2009) points out that the plan is logical and not logistical, meaning that the evidence specifically answers the research question. (Yin, 2009) This paper addresses the same design by applying theories that are relevant in order to answer the sub-questions. Moreover, the empirical data and applied theories focus on M&A announcements in the Nordic market and deselects non-relevant information to keep the plan towards the problem statement. Therefore, this paper assesses that the event study follows a similar design as the one described by Yin (2009).

Furthermore, Yin (2009) discusses "single-case designs" type 1 (holistic) and type 2 (embedded). The holistic case involves one unit/a whole, whereas the embedded case consists of different units/components. (Yin, 2009) This paper applies a holistic case, as the event/case of M&A announcements as a whole is examined. Further, an examination of transaction characteristics is applied. The advantage of this approach is the strong link from theory to answering the sub-questions. On the other hand, the challenge of applying a holistic approach is the lack of investigating in the specific units of analysis. Hence, the analysis is conducted on an abstract level. (Yin, 2009)

Even though this paper applies an event study approach, the single case design is still applied in some extent. The event of this study is similar to Yin's (2009) representative or typical single case, as the objective is to capture the conditions and circumstances in the event. (Yin, 2009) Likewise, the purpose with the representative or typical single case is to be informative, which is in alignment with the purpose of this study; inform investors and other researchers performing event studies on short-term value creation from M&A announcements in the Nordic market.

Lastly, research studies can be conducted in either an inductive, deductive, or abductive approach. The thesis applies a deductive approach, since the methodology goes from a general to specific perspective. General theories and research studies, such as financial statement analysis, neoclassical-, behavioural theory, and the literature review form the foundation of this paper's hypotheses, which are then tested and analysed in order to give a specific conclusion to the problem statement.

5.2 Data collection

The data collection consists of four main sources; academic textbooks, research studies, the financial platform Capital IQ, and NASDAQ. In the following, the four main sources will be discussed in relation to primary- and secondary data.

Primary data

According to Wilson (2014) primary data is collected by the researcher through a range of collection tools, such as interviews, observations and questionnaires. (Wilson, 2014) Consequently, this study does not apply primary data due to the nature of the topic. It is assessed that interviews, observations and questionnaires will have little impact on the conclusion on the problem statement. This is mainly due to the fact, that share prices show a much better picture of shareholder value creation than collecting accounting data from each firm. Further, it is assessed that interviews and questionnaires may be relevant, however simply interviewing the management of a single firm does not indicate that the findings can be applied to all firms within the Nordic countries.

Secondary data

Secondary data is data that has been published by other researchers (Wilson, 2014). This paper uses secondary data in both quantitative- and qualitative forms. The benefit of applying secondary data is the range of easily available sources. Moreover, secondary data attributes to supplementary knowledge from various aspects around the topic. In contrast, the consequence of using secondary data is that it may have different purposes for the researchers. (Andersen, 2013)

This paper's theoretical framework is based on academic textbooks and research papers, such as Ross et al. (2011), Plenborg and Petersen (2017), Bisgaard et al. (2004), and Brealey et al. (2011). These materials are purely qualitative data, with the purpose of serving as a theoretical foundation of M&As. One of the main academic papers used in this study is Fama (1970). The research study is 50 years

old but still the most recognized study of the EMH. However, majority of these academic textbooks and research papers are from the U.S. and outside of the Nordic countries. The paper is aware of the issues, and thus all the academic textbooks and papers have been evaluated and discussed critically to reduce biases in this study's analysis.

The literature review consists of secondary data, since literature is sources of published material. The literature review assists with an understanding of what is relevant around the topic, and how the topic has evolved through the years. This paper evaluates, compares, and raises critical concerns towards published literature about the topic. Further, it tries to limit biases by investigating the sources behind the research studies, as researchers often have different intentions, which can lead to biases. As mentioned in the motivation section, several research studies have been conducted in the U.S, UK and Europe. In the Nordic market there is a lack of empirical evidence, and thus the results from the literature review serve as an inspiration for the Nordic market even though it is not directly applicable. Further, majority of the research studies are more than 20 to 40 years old. Various barriers, such as the economy, culture, regulations, and politics have changed throughout the years. Therefore, these changing factors most likely have an impact of this paper's findings. In addition, a research study criticizing the way of analysing and measuring M&A performance has been included to finish the section off.

Lastly, the applied data in the analysis is secondary quantitative data extracted from Standards & Poor's (S&P) Capital IQ platform. The platform provides detailed information and analysis over the stock market to investing shareholders, advisory firms, banks, corporations, universities, private equities, and so forth. The platform collects more than 135 data points, and thus is the leading provider of financial research. (S&P Global, 2020) An in-depth description of the data extracted from the database is presented in chapter seven and eight. Moreover, all the share prices used for the analysis are collected from NASDAQ.

5.3 Quality of data

Yin (2009) argues that a research design represents a logical set of statements, and therefore the quality of any design can be assessed through four logical tests; construct-, internal-, external validity, and reliability.

Validity refers to how accurately a method measures the indented objective. More specifically, construct validity involves a clearly specified research question, study aim, and how the objectives will be measured. Different measures will increase the construct validity, assuming they are measuring the same construct. (Yin, 2009) This paper assesses that share prices and the market model are valid when measuring abnormal return. However, to increase construct validity one may benefit from supplementing the market model with other models, such as the CAPM, factor models, constant mean return model, market-adjusted return model, and APT model.

Internal validity concerns the causality between causes and outcomes (Yin, 2009). This paper's method (event study) and the analysed data (share prices) are commonly used when examining shareholder value creation from M&A announcements. Event studies are recognized methods when analysing events, such as M&A announcements. Further, movements in share prices are a good indication of shareholder wealth, as these reflect changes in shareholder wealth through capital income. However, if illiquid shares are included in the data sample, share prices may not be priced correctly, and thus not reflect the true value creation from M&A announcements.

External validity addresses the validity of generalizing the conclusion of the findings (Yin, 2009) This is similar to adequacy, which implies that the researcher does not conclude more than the empirical- or theoretical evidence support. MacKinlay (1997) argues that the researcher may increase the adequacy of the results from event studies by shortening the event window, increasing the sample size, or developing more specific predictions to test**.** (MacKinlay, 1997) The first recommendation is taken into account by choosing a shorter event window of ± 10 trading days around the announcement date. The second recommendation is of a higher concern, as the sample size is limited to 144 M&A transactions. It is impossible to increase the sample size based on the set ten criteria in the data collection. Further, this paper's hypotheses are assessed to be more general, which contradicts MacKinlay (1997) recommending more specific predictions to test. Therefore, MacKinlay (1997), among other readers of this paper, may wish for a more specific examination of whether behavioural theory aspects, such as asymmetric information, agency problems, managerial hubris, and winner's curse affect short-term value creation from M&A announcements in the Nordic market. If this paper examined for example the U.S., UK or Europe, it would make less sense to write a more general overview of value creation from M&A announcements, as several studies already have done so. However, due to the lack of empirical evidence in the Nordic market, it is assessed that a general examination of

value creation is more essential than examining a specific behavioural theory factor's impact on value creation.

Reliability refers to the consistency of a measuring method's results, and thus a researcher conducting the analysis with the exacts same procedures should arrive at the same findings and conclusions (Yin, 2009). This paper assesses that the results have a high reliability, as a recreation of the event study with the exact same criteria will result in the same findings. The data is collected from Capital IQ's database, which is one of the leading providers of financial research. Further, the analysis is based on the market model and multiple regression analysis.

6. Hypotheses

This chapter determines the eight hypotheses that will be analysed upon. The hypotheses are based on the theoretical framework and literature review and will serve as the guide for the empirical research.

Value creation

This paper first and foremost investigates whether M&A announcements create shareholder wealth and to whom. Previous research studies show that target shareholders receive substantial abnormal return. However, the empirical evidence for bidders is more diverse, with studies showing both slight positive-, zero-, and negative abnormal return. Hence, the first two hypotheses will be the following:

Hypothesis 1: Bidder shareholders experience zero abnormal return from M&A announcements

Hypothesis 2: Target shareholders receive abnormal return from M&A announcements

Payment method

From a neoclassical theory point of view, the payment method should not affect share prices. This is under the assumption that securities are priced correctly and that all relevant information is fully reflected in the share price. However, previous literature show significance of behavioural theory aspects, such as the signalling-, leverage effect, and agency costs of free cash flow. This is documented empirically, where both shareholders of target and bidder firms receive higher abnormal return from cash acquisitions. In addition, this paper tests whether cash offers generate higher abnormal

return for target and bidder shareholders separately. This is due to the concern that testing them jointly may lead to a biased result. For example, empirical evidence shows that target shareholders receive substantial higher abnormal return, thus by combining target and bidder shareholders in one hypothesis, several factors must be taken into account.

Hypothesis 3: Cash offers result in higher abnormal return than stock offers for bidder shareholders

Hypothesis 4: Cash offers result in higher abnormal return than stock offers for target shareholders

Diversified vs. focused M&A

Theoretically, previous research studies are more ambiguous as to whether diversified M&As increase or reduce shareholder wealth. However, it seems that older research papers address the benefits of diversification, whereas newer studies focus on criticizing these. The most recognized beneficial theoretical arguments for diversification are managerial economies of scale, economies of scope, internal capital markets, and joint taxation. These theories have been criticized by more recent studies, thus leading to a more unclear theoretical evidence on diversification. Despite, theoretical evidence being more ambiguous, empirical evidence broadly agrees that focused M&As tend to yield higher abnormal return for both bidder- and target shareholders.

Hypothesis 5: Focused M&As yield higher abnormal return than diversified M&As for bidder shareholders

Hypothesis 6: Focused M&As yield higher abnormal return than diversified M&As for target shareholders

Cross-border vs. domestic transactions

The last two hypotheses are testing whether domestic- or cross-border transactions yield the highest abnormal return. The hypotheses are based on foreign direct investment theory and empirical evidence. Theoretically, the views are ambiguous. The beneficial arguments of cross-border transactions are market access, exchange rate effect, and international portfolio diversification. On the other hand, the theories also claim that cross-border transactions are not adding value, because of political, economic, cultural, and legal transactions barriers. Similar, the research studies are unclear in their findings, however majority of empirical evidence conclude that cross-border transactions destroy value.

Further, researchers, such as Campa and Hernando (2004) and Martynova and Renneboog (2006) find evidence that target shareholders receive higher abnormal return compared to bidder shareholders. Thus, the last two hypotheses will be as follow:

Hypothesis 7: Domestic transactions yield higher abnormal return for bidder shareholders

Hypothesis 8: Domestic transactions yield higher abnormal return for target shareholders

In summary, the eight hypotheses will be examined in the analysis in order to assess whether share price movements differ based on transaction characteristics. Before conducting the analysis on the empirical data, the following chapters will discuss the methodology and data collection of this paper's event study. These chapters discuss the most essential choices and assumptions made during the methodology and data collection of the event study.

7. Event study methodology

The analysis in this paper consists of two main parts. First, the abnormal return of each company is estimated through an event study. The abnormal return is then accumulated in order to achieve the cumulative abnormal return, which are used to test hypotheses one and two. Next, several regressions of independent variables are run against the cumulative abnormal return. The results from the regressions are used to test hypotheses three to eight. In the following, the methodology of the event study is explained, followed by an explanation of cross-sectional regression analysis. Further, there is no unique structure for an event study, however MacKinlay (1997) argues that there is a general guideline that the analysis should follow. Therefore, this paper's event study is inspired by the framework of MacKinlay (1997). The formulas of this chapter are based on Newbold, Carlson and Thorne (2013).

7.1 Event study

There are several methods to measure the effect of M&A announcements. Majority of research studies have used event studies to examine events, such as issuing shares, issuance of new debt, M&A-, and dividend announcements. (MacKinlay, 1997) This paper uses the event study to analyse movements in share prices for each firm before, during, and after the event (M&A announcement date). The share prices reflect the true value of the firm if the market is efficient, thus assuming, that all

information is reflected in the share price. In addition, investigating share prices is more valid compared to accounting-based measures of profit, since these do not depend on accounting standards and cannot easily be manipulated by managers. Thus, share prices are often used in event studies to analyse the short-term value creation of events. The disadvantage of analysing share prices is that several research studies have documented that the market is not entirely efficient. Supporting this argument is MacKinlay (1997) arguing that the event window shall include the days surrounding the event, as share prices do not reflect all available information on the day of the M&A announcement. This indicates that the market is not entirely efficient, as all information is not captured immediately on the M&A announcement day. Further, the event window shall include days prior to the event in order to capture rumours, as well as leaked information before the announcement date (MacKinlay, 1997). This indicates that it is wrong simply assuming a semi-strong market efficiency, as there would be no need of an event window prior to the M&A announcements, as investors would not be able to anticipate the event prior to it being public. Therefore, the definition of event window by MacKinlay (1997) supports this paper's assessment, that the market efficiency is a grey-zone between semi-strong and strong market efficiency.

This paper's event study methodology is in accordance with Bowman (1983) who argues that one first needs to calculate the actual return, which is the change in share price and any dividends paid, divided by the closed share price the day before. The abnormal return is then calculated as the actual return deducted by the expected return. (Bowman, 1983)

7.1.1 Event study in a five-step process

The theoretical event study is standardized in a five-step process (Bowman, 1983).

1. Identify the event of interest
2. Model the security price reaction
3. Estimate the excess return
4. Organize and group the excess return
5. Analyse the results

However, as each event study is unique, the following event study is adapted to this paper's analysis, with inspiration from the five-step process.

1. Determine the time period

2. Calculate the expected return
3. Estimate the abnormal return
4. Organize and accumulate the abnormal return
5. Statistically test the abnormal return

The first step assesses the time period. In order to determine the estimation period correctly, the data sample needs to represent the true market reactions of the firms, so that no sampling errors in the coefficients exist. In addition, the event window must be defined as the period where the market most likely has absorbed the news from the event. An important consideration is that the news may become available to the market before the public announcement. Previous research papers have focused on the effective dates around the merger rather than the exact date of first public announcement. It is likely that the event of interest happens earlier than the public announcement of the merger, example through leaked insider information or rumours. Another important consideration is the presence of confounding events, for example if M&A announcements are accompanied by dividend- or earnings announcements. Confounding events frequently exist in event studies and can have a significant impact on the results. (Bowman, 1983)

The second step calculates the expected return, which is the estimated return in case of no events. This is done through an appropriate model, and the results and validity of the model is analysed. The third step estimates the abnormal return, as the difference between the actual return in the event window and the expected return. The fourth step organizes and accumulates the abnormal return of each firm. The fifth step statistically tests the abnormal return in order to conclude whether M&A announcements in the Nordic market affect short-term shareholder value creation. In the following sections, the five-step process will be elaborated further on.

7.1.1.1 Determine the time period

Estimating the expected return requires a time period of daily share prices prior to the event (M&A announcement date), often referred to as the estimation period. This usually ranges from 200 to 250 trading days (MacKinlay, 1997), and therefore this paper assesses that 250 trading days represent the true and normal stock return. Thus, it is assumed that there are no sampling errors in the coefficients as the variance moves towards zero. A shorter estimation period than used in the project can lead to insufficient share price information. Conversely, a longer estimation period may return the data set

to another economic cycle. In the following, these terms are used: Length of estimation period, L1, first day of estimation period, T0, and the last day, T1.

Estimating the abnormal return requires a time period before and after the event, often referred to as the event window. The period before the announcement date captures rumours as well as leaked information affecting the share price, thus accounting for the first main consideration in the first step of the event study. The period following the day of the M&A announcement ensures that all relevant information is captured by the share price. This is necessary because this paper assumes that the market is not entirely efficient, thus all public and private information is not captured efficiently and immediately. The length of the event window, L2, should preferably span between ± 10 days around the announcement date (MacKinlay, 1997). The event window is based on trading days, so the abnormal return is identified for the specific days around the announcement date, and thus not affected by weekend days. In order to account for the second consideration, this paper identifies and excludes firms that have confounding events around the M&A announcement date. In the following, these terms are used: Length of event window, L2, first day of event window, T1, and the last day, T2.

7.1.1.2 Calculate the expected return

Several recognized models have tried to estimate the true stock return of firms. This paper argues for the chosen model, the market model, and its assumptions. Not least, it discusses the deselection of alternative models.

Overall, the models can be categorized as either statistical or economic. The statistical models are based on statistical assumptions regarding the behaviour of asset return and do not consider any economic causes. The main assumption is that asset return is independently and identically distributed through time, and jointly multivariate. This assumption is necessary in order to specify the market model and the constant mean return model correctly. The assumption is generally not a problem in practice. Further, one can simply adjust the statistical model so that it accounts for autocorrelation and heteroskedasticity. (MacKinlay, 1997) The economic models are based on both statistical assumptions and assumptions regarding investors' behaviour. Thus, the potential advantage of economic models is not to exclude statistical assumptions, but the possibility of more accurate estimates of the return using economic factors. Economic models can be seen, as restrictions on the statistical models to achieve more constrained normal return models (MacKinlay, 1997). This paper has considered four statistical models, the constant mean return model, the market model, the factor model,

and the market-adjusted return model. In addition, two economic models have been considered, respectively the Capital Asset Pricing Model (CAPM) and the Asset Pricing Model (APT).

The constant mean return model uses historical returns to estimate the expected return. It is one of the simplest models, however Brown and Warner (1985) argue that its results are similar, to those of more sophisticated models. This is due to the fact, that the variance of the abnormal return is often not reduced much by choosing a more sophisticated model. The constant mean return model's main disadvantage is the lack of adaptation to market movements and the systematic risk, thus the market model is often preferred. (MacKinlay, 1997)

The market model regresses the return of any given security against the market return. Therefore, the return of the stock is modelled as a linear function of the market return over a given period. The market model is more accurate than the constant mean return model as it excludes the return that is caused by variation in the market return, thus the variance of the abnormal return is reduced. This increases the ability to detect event effects. The accuracy of the market model will depend on the R^2 of the market model regression. The greater the R^2 the lower the variance of the abnormal return, and the more accurate estimates. (MacKinlay, 1997) Even though the market model is the most applied model in the analysis of M&As, Conn and Connell (1993) and Gregory (2003) argue that the model has limitations, especially regarding the assumption of stationary alpha and beta value.

The factor model seeks to reduce the variance in the abnormal return by explaining more of the return's variation. An example of a one factor model is the market model. Examples of multifactor models are index models with factors based on industry classification. The benefit of using multifactor models for event studies are limited as the marginal explanatory power of additional factors is small, and thus the reduction in the abnormal return' variance is little. The reduction in variance will be greater in event studies where all the companies have a common characteristic, such as being in the same industry or being concentrated in one market capitalization group. (MacKinlay, 1997)

The market-adjusted return model uses the actual market return to estimate the event effects on the general market. It can be described as a restricted market model, as the alpha is assumed to be zero while beta is one. Therefore, the coefficients are predetermined, which means an estimation period is not required in order to obtain parameter estimates. The market-adjusted return model is mostly used

in analysis with limited data. However, several researchers recommend that the market-adjusted return model should only be used if necessary due to the possible biases arising from the restrictions. (MacKinlay, 1997)

The CAPM describes the relationship between the expected return and systematic risk for assets, especially stocks. In the 1970s the CAPM was a common model in event studies. However, since then the validity of the restrictions the CAPM sets on the market model has been questioned. The market model assumes that the error term is equal to zero for all firms, in contrast to the CAPM that leads to biased results due to the problem with parameter stationarity. This problem can be solved by using the market model, and therefore the use of CAPM in event studies has almost ceased. (MacKinlay, 1997)

The APT model, like the factor model, has little marginal explanatory power of additional factors, and thus the reduction in the abnormal return's variance is small. The main advantage of using the ATP model is to eliminate biases that is created by CAPM. However, since statistical models also eliminate these biases, the ATP model is rarely used. (MacKinlay, 1997)

In summary, it is assessed that the market model is the most efficient model for the event study. It is argued to be the most accurate and precise model when using event studies (MacKinlay, 1997; Dyckman, Philbrick & Stephan, 1984). Therefore, the market model in combination with the event study has been used in several research studies (MacKinlay, 1997). This is also supported by the fact that majority of the research studies from this paper's literature review use the market model in their event studies. However, a few research studies use other models, sometimes in combination with the market model. Langetieg (1978) uses a two-factor model based on CAPM. MacKinlay (1997) argues that a two-factor model is favoured when all the companies have a common characteristic, such as being in the same industry or being concentrated in one market capitalization group (MacKinlay, 1997). Indeed, Langetieg (1978) introduces a non-merging control group in the analysis, and thus favours a two-factor model based on CAPM. Other research studies applying the CAPM are Harris, Franks and Mayer (1987), Campa and Hernando (2005), and Danbolt (2004). Further, Healy, Palepu and Ruback (1992) use the market-adjusted return model. They argue that the return estimated by this model is similar, to the risk-adjusted return computed by using the market model to calculate pre-merger-announcement estimates.

In the market model, stock return is modelled as a linear function of the market return over a given period. Therefore, the market model is a time series regression and follows a linear function:

$$y_{it} = \beta_0 + \beta_1 x_{1it} + \cdots \beta_K x_{Kit} + \varepsilon_{it}$$

The market model regresses the return on the market portfolio against the return of each firm:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad where \quad E(\varepsilon_{it}) = 0 \; and \; Var(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$$

In addition, ordinary least squares regression (OLS) is applied in the times series regression in order to minimize the sum of squared residuals (SSR). The Gauss-Markov theorem states that if the linear regression model fulfils the five assumptions, then the OLS regressions' results are unbiased estimates with the smallest variance of any linear model estimator.

The OLS is based on Gauss-Markov's five assumptions (Hallin, 2014):

1. Linearity
2. No perfect multicollinearity
3. Normality of errors
4. Homoscedasticity
5. No autocorrelation

The first assumption states that the time series regression follows a linear model. The market model has linear parameters, and thus this assumption is not violated.

The second assumption implies that no perfect multicollinearity exists. The biggest challenge to this assumption is illiquid stocks. If stocks are not traded daily the relative return equals zero and might even occur constant if they are not traded for a longer period. Therefore, illiquid stocks have been omitted from the sample by only including share prices that are traded in more than 3/4 of the observed days. Further, perfect multicollinearity is more likely to occur when several variables explain the same objective. This paper analyses the effect of several transaction characteristics on short-term value creation from M&A announcements and are thus aware of this assumption when performing

the multiple regression analysis. If perfect multicollinearity exists, then the OLS model cannot be used.

The third assumption states that the expected error term is equal to zero for any given explanatory variable or time. Thus, each error term is uncorrelated with each explanatory variable at any given time. If the assumption holds, the data is exogenous, which means that the error term is uncorrelated with the explanatory variable, the market return. The main challenges to this assumption are business cycles and systematic risk factors, as they can create a correlation between the error term and the explanatory variable. This paper's relatively high sample size and the 20-year time frame are assumed to remove any correlation from business cycles and systematic risk factors.

The fourth assumption requires that the error term has a constant variance over time for each firm in the sample. Otherwise, the model suffers from heteroskedasticity and the standard deviation, but not the estimated parameters, will be biased. Therefore, it affects the t-tests and F-tests but not the estimates. This paper takes heteroskedasticity into account by applying robust standard errors in the regression analysis.

The fifth assumption is possibly the most important, as any autocorrelation in the time series regression means that the residuals are correlated. This breaks with the normal distribution assumption. Autocorrelation exists if (Hallin, 2014):

$$Corr(u_i u_j) \neq 0 \; i \neq j$$

Autocorrelation does not affect the OLS estimates, as these are still linear, constant and normally distributed. It affects the residuals, and therefore the hypothesis tests as the variances in the t-tests and F-tests are underestimated. A positive autocorrelation will underestimate the standard errors, thus assuming the parameter estimates to be more accurate. Therefore, there is a tendency to reject hypotheses that should not be rejected. (Hallin, 2014) To detect any autocorrelation the Durbin-Watson test is applied:

$$d = \frac{\sum_{t=2}^{n}(e_t - e_{t-1})^2}{\sum_{t=1}^{n} e_t^2}$$

The Durbin-Watson can be shortened to the following:

$$d = 2(1 - r)$$

If there is no autocorrelation in the errors, then r is approximately 0 and d approximately 2. Therefore, it is tested whether d is statistically different from 2. If so, the null hypothesis of no autocorrelation is rejected. Opposite the t-test and F-test, there are no critical values for the Durbin-Watson test. However, one may use a with upper and lower bounds, which depend solely on the number of observations, n, and regressors, k.

7.1.1.3 Estimate the abnormal return

The market model calculates the expected return, R_{it}. The expected return is a linear function of the firm's performance in comparison to the market index benchmark (a_i), and the firm's volatility in relation to the overall market (β_i) multiplied with the market return (R_{mt}). Where beta is estimated as the covariance between the market index and the firm's performance during the estimation period. Further, the error term is equal to the excess return, which can be isolated in the equation.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$
$$\varepsilon_{it} = R_{it} - \left(\hat{a}_i + \hat{\beta}_i R_{mt}\right)$$
$$\varepsilon_{it} = AR_{it}$$
$$AR_{it} = R_{it} - (\hat{a}_i + R_{mt})$$

AR_{it} is equal to the abnormal return for the individual firm during the event window, whereas R_{it} is equal to the expected return.

7.1.1.4 Organize and accumulate the abnormal return

Wooldridge (2009) is used as inspiration for the calculations up to section 7.3 (Cross-sectional regressions analysis). CAR for each company is calculated by summing all its abnormal return from the event window:

$$CAR(t_1 + 1, t_2) = \sum_{t=t_1+1}^{t_2} AR_{it}$$

Average abnormal return (AAR) is equal to the abnormal return divided by the number of observations (Ackert & Deaves, p. 62, 2009):

$$AAR_{it} = \frac{1}{N}\sum_{i=1}^{N} AR_{it}$$

Finally, Cumulative abnormal return (CAAR) is calculated by summing all AARs from the event window:

$$CAAR(t_1 + 1, t_2) = \sum_{t=t_1+1}^{t_2} AAR_{it}$$

7.1.1.5 Statistically test the abnormal return

Event studies focusing on abnormal return must include a parametric test that can be supplemented with a nonparametric test (MacKinlay, 1997). It is a valid assumption that the abnormal return is not normally distributed in the event window, hence this paper supplements the analysis with non-parametric tests. More specifically, rank tests (Corrado, 1989) and sign tests (Cowan, 1992) are used. These will be elaborated further in the following sections.

7.1.1.5.1 7.1.1.5.1 Parametric test

The parametric test is used for the specific event window and assesses whether the estimated AR, AAR, CAR, and CAAR are significantly different from zero. AR is tested through a student t-test with the following hypotheses:

$$H_0 = \textit{No abnormal return in event window}$$
$$H_1 = \textit{Abnormal return in event window}$$

If the null hypothesis is rejected at a significance level of 5%, one can with 95% certainty conclude a significant AR in the specified event window. In addition, this paper assumes that the estimation period of 250 trading days is equal to the population, and thus the sampling errors are equal to zero. Therefore, the residual variance can be calculated as:

$$\hat{\sigma}_{\varepsilon_i}^2 = \frac{1}{L_1 - 2} \sum_{t=T_0+1}^{T_1} (AR_{it})^2 = \sigma^2(AR_{it})$$

The variance of AR is defined as SSR divided by the length of the estimation period minus two degrees of freedom. Furthermore, the parametric test assumes that AR is normally distributed with a mean of zero.

$$AR_{it} \sim N\left(0, \sigma^2(AR_{it}) = \sigma_{\varepsilon_i}^2\right)$$

AR for a specific time is less relevant in this paper, however the variance for AR is necessary in order to calculate the variance for respectively CAR, AAR and CAAR. CAR and its variance are calculated as:

$$CAR(t_1 + 1, t_2) = \sum_{t=t_1+1}^{t_2} AR_{it} \quad and \quad \sigma_i^2(t_1 + 1, t_2) = L_2 \sigma_{\varepsilon_i}^2$$

In addition, it should be pointed out, that CAR is normally distributed with:

$$CAR_i(t_1 + 1, t_2) \sim N\left(0, \sigma_i^2(t_1 + 1, t_2)\right)$$

To examine whether specific days in the event window generally outperform, the cross-sectional performance for each individual day is analysed. The return and variance for AAR are calculated as:

$$AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{it} \quad and \quad \sigma_i^2(AAR_t) = \frac{1}{N} \sum_{i=1}^{N} \sigma_{\varepsilon_i}^2$$

CAAR is the most relevant indicator of the short-term value creation from M&A announcements as it cumulates AAR across all companies and days in the event window. CAAR and its variance are calculated as:

$$CAAR(t_1+1,t_2)=\sum_{t=t_1+1}^{t_2} AAR_t \quad and \quad \sigma_i^2 CAAR(t_1+1,t_2)=\sum_{t=t_1+1}^{t_2} \sigma_i^2 AAR_t=\sigma_i^2(AAR_t)L_2$$

In addition, CAAR is distributed with:

$$CAAR(t_1+1,t_2)\sim N\left(0,\sigma_i^2 CAAR(t_1+1,t_2)\right)$$

The above formulas are used to calculate the return and variance. Thereafter, t-tests are applied to test the return against the standard deviation, to obtain the critical values for respectively AAR, CAR, and CAAR, which are then used to conclude on the hypothesis tests.

$$t=\frac{AAR_t}{\sqrt{\sigma_i^2(AAR_t)}} \quad and \quad t=\frac{CAR_i(t_1+1,t_2)}{\sqrt{\sigma_i^2(t_1+1,t_2)}} \quad and \quad t=\frac{CAAR_i(t_1+1,t_2)}{\sqrt{\sigma_i^2 CAAR(t_1+1,t_2)}}$$

7.1.1.5.2 Non-parametric test

The parametric t-test is supplemented by two non-parametric tests that follow the same procedure as the t-test. These do not lead to an absolute value but indicate whether AR is positive or negative in the specified event window. Historically, rank tests have outperformed sign tests (Corrado, 1989), thus the rank test is assessed to weigh more in the significance assessment.

7.1.1.5.2.1 Rank test

The rank test ranks all AR's on the remaining observations for each company (AR_{it}), both under the estimation period and event window. Thereafter, the variable (K_{it}) are standardized as values between 0 and 1:

$$K_{it}=\frac{Rank(AR_{it})}{1+L_1+L_2} \quad and \quad \sigma_K^2=\frac{1}{L_1+L_2}\sum_{t=T_0}^{T_2}(\overline{K}-0.5)^2$$

Where $\overline{K}_t$ is the sum of the mean of the remaining event window ranking, and is calculated as:

$$\bar{K}(T_1+1,T_2)=\frac{1}{L_2}\sum_{t=T_1+1}^{T_2}K_{it}$$

Finally, the rank test is calculated as:

$$t_{Rank}=\sqrt{L_2}(\frac{\bar{K}(T_1+1,T_2)-0.5}{\sqrt{\sigma_K^2}}$$

The advantage of the rank test is that it indicates, whether there is an AR. Moreover, it considers extreme outliers, in contrast to the parametric t-test. The limitation is that the estimated AR's do not reflect an absolute value because of the standardization. In addition, the rank test is more sensitive to increases in the length of the event window, increases in the return variance, as well as illiquid shares. These limitations have been considered by having a relatively short event window and omitting illiquid shares, as they must be traded for more than 3/4 of the observed days.

7.1.1.5.2.2 Sign test

The sign test measures each AR and examines if it is significantly different from zero. A positive AR is classified as [1], while a negative AR is classified as [0]. If the sign test shows an AAR greater than 0.5 it indicates an average positive AR.

$$t_{Sign}=\sqrt{N}\left(\frac{\hat{p}-0.5}{\sqrt{0.5(1-0.5)}}\right)$$

7.2 Cross-sectional regression analysis

The regression analysis tests the hypotheses. The dependent variable is the calculated CAR from the event study, whereas the independent variables consist of relevant transaction characteristics depending on the specific hypothesis. Multiple regression analysis allows this paper to test for several transaction characteristics simultaneously, and thus to test whether specific transaction characteristics affect the short-term value creation from M&A announcements. In addition, control variables are added to minimize the error term. Hence, the hypotheses are tested via a multiple regression that theoretically can be written as:

$$CAR_i(t_1 + 1, t_2) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_K x_K + u$$

8. Data

This paper's research question and hypothesis tests form the basis for the data collection. Thus, the data collection is based on M&A transactions from the Nordic countries; Denmark, Norway, Sweden, and Finland, collected through the database, Capital IQ. The data selection consists of two processes, the first is setting six criteria for the data collection, while the second is setting four additional criteria that are important for the method section.

8.1 Data selection

8.1.1 Selection process 1

The following criteria are set up in Capital IQ's search function:

1. Both acquirer and target are from Nordic countries
2. The merging companies are listed
3. The transaction must be closed before 31.12.2019
4. The transaction must be announced in the period 01.01.2000 - 31.12.2019
5. The acquirer must acquire at least 50% of the target
6. The transaction must be either a complete cash- or share offer

The first criterion ensures that the data is limited to the focus of the study; only Nordic countries' short-term value creation from M&A announcements. The data collection is simplified to the Nordic countries, as they are generally similar, to one another economically, politically, and culturally. The Nordic countries show similar characteristics concerning risk profiles regarding legal- and corporate control systems (La Porta et al., 1998). In addition, the Nordic countries are all part of the NASDAQ OMX Group, thus covered by the same stock exchange rules.

The second and third criterion ensures that daily share prices are available and that the value creation of the M&A transaction can be measured, which is an essential element for performing an event study. Moreover, it increases the data validity as completed transaction reflect the true value of the share price.

The fourth criterion clarifies that the transaction must be announced in the period 01.01.2000 to 31.12.2019. The period of 20 years ensures that the data collection covers different economic cycles and M&A activity cycles.

The fifth criterion ensures that the acquirer achieves majority and thus the opportunity to control the firm and value creation. It is assumed that the acquirer achieves full control of the firm by owning at least 50% of the shares, although this is not always the case in practice. In practice there are many elements influencing whether the acquirer achieves full control. It depends on elements, such as the corporate governance system, rights to majority board members, the legal issues in the various scenarios and different ownerships. (La Porta et al., 1998) In addition, the method ensures that there theoretically is no price difference between A and B shares, as voting rights are redundant.

Further, the sixth criterion ensures that the M&A offer consists of 100% cash or share. Therefore, offers that example consist of example 70% cash and 30% shares are omitted. If one simply assumes that it is then a cash offer it will bias the results. Consequently, by filtering out offers that are not completely cash or shares offers it decreases the numbers of M&A transactions included in the data selection.

Overall, these six criteria limit the sample to 144 M&A transactions, which consists of 144 acquirers and 144 targets, since all the deals are matching. This means that there is data on both the acquirer and target company that fulfils the criteria in selection process 1.

8.1.2 Selection process 2

The following four criteria from the method section are manually filtered, as they are not part of Capital IQ's search function. These criteria will cover the missing functions and contribute to the analysis.

7. Available share price data, at least 250 trading days before and 10 days after the announcement date
8. The share price is traded for more than 3/4 of the observed days
9. Internal transactions are omitted
10. Sufficient financial data before the announcement

The seventh criterion ensures that the share price data must be available 250 trading days before and 10 days after the announcement day. This is essential in order to secure most efficient share price data as discussed previously.

The eighth criterion ensures that illiquid shares are omitted, as their relative return approach zero and becomes constant. In addition, these often reflect smaller companies that have a greater risk profile (Woolridge, 2009). Finally, illiquid shares are often traded with a liquidity discount, which is partly avoided through this criterion.

The ninth criterion ensures that internal transactions are omitted. This is because these are often not priced at Arm's Length, and thus will lead to a biased CAAR (Wittendorff, 2011).

If the M&A transaction meets criteria one to nine, it is included in the event study's calculation of CAAR. To be included in the cross-sectional regression analysis, it must meet the tenth criterion that collects independent variables for the cross-sectional regression analysis.

Finally, M&A transactions from financial institutions are included in the event study's calculation of value creation, as well as the hypothesis tests. However, these are excluded from the cross-sectional regression analysis, as there are specific regulatory requirements for financial institutions' financial statements and capital adequacy, such as Basel I, II, III (Chen, 2018). Thus, comparing financial institutions to non-financial institutions will lead to a biased result.

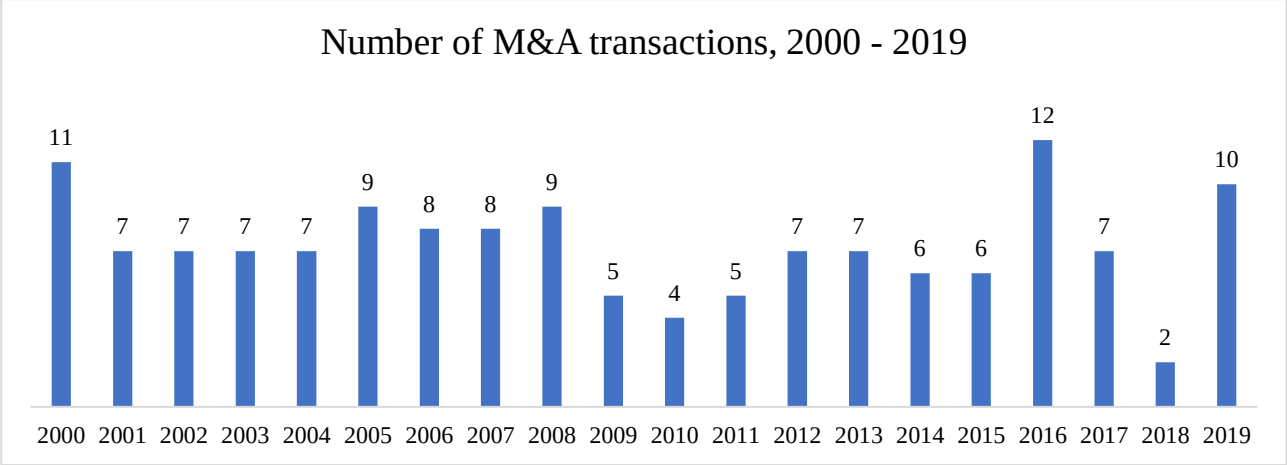
The final sample is limited to 144 M&A transactions with 141 acquirer and 139 target companies. The second data selection process removed three acquirer and five target companies, since they did not fulfill the criteria. In addition, the total number of matching transactions where this paper has data on both the acquirer and target company is 136.

8.2 Descriptive statistics

This section presents the final dataset through descriptive statistics. The bar charts and tables give an understanding of the final data sample, and how it is distributed over time, across Nordic countries, and transaction characteristics.

Figure 1: Number of M&A transaction, 2000 - 2019

The bar chart illustrates the number of M&A transactions in the period between 2000 - 2019. The final sample is on 144 observations, where the event is defined as the announcement date of the M&A transaction.



Source: own calculations based on the data sample from Capital IQ

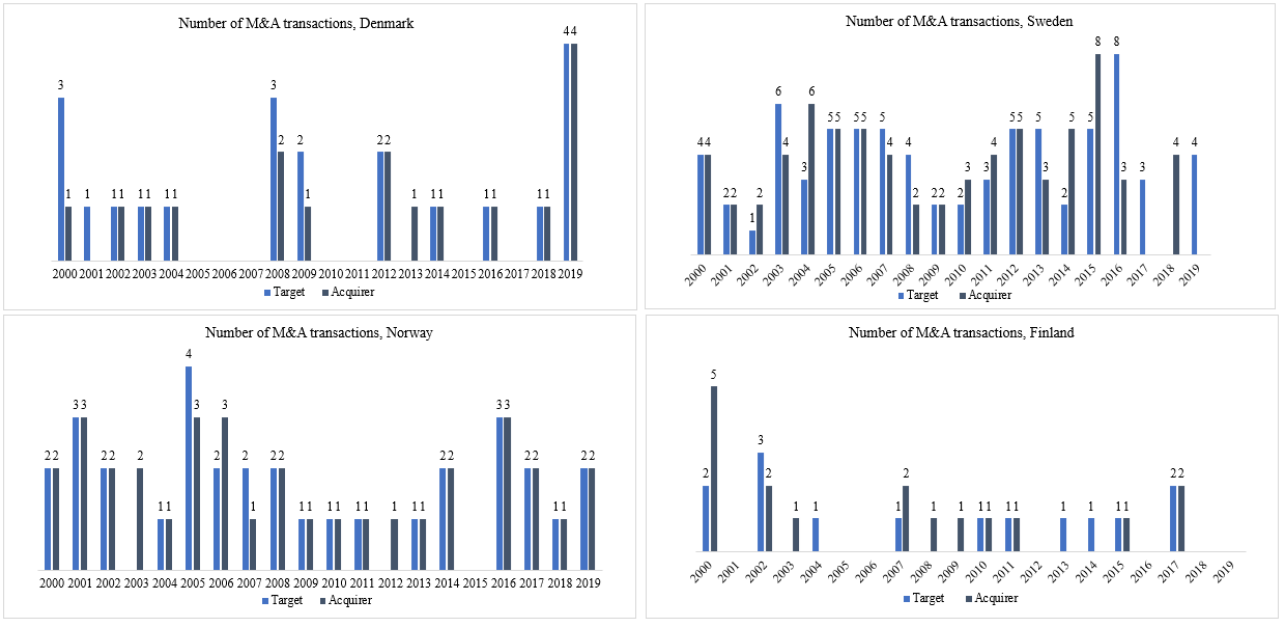
The number of M&A transactions in the Nordic market over the period 2000 - 2019 show an ambiguous trend. According to Stata (2020), the worldwide trend on M&A transactions is increasing, as M&As has become a popular and recognized method of firms to grow. (Stata, 2020) However, the bar chart illustrates an ambiguous development in M&A activity from 2001 – 2008 and fluctuations from 2016 to 2019. The reason the trend in the figure does not correspond with the worldwide trend from Stata is due to the strict data selection in this paper. Moreover, the number of listed firms in the Nordic market is limited, and thus the fluctuations during the years in the bar chart are more frequent compared to the whole market. Therefore, it is harder spotting a trend in the bar chart in contrast to the whole M&A market, due to the limited sample size.

Going further in depth, the bar chart illustrates a stabile development, with an average of 7.75 transactions from 2001 – 2008. After the financial crisis the number of transactions decreases from nine transactions in 2008 to four transactions in 2010. In 2012, M&A transactions increase to seven and in 2016 it peaks with 12 transactions. It is important to emphasize that in 2018 the number of transactions decreases to two transactions, which may be due to the strict data selection criteria. Example, criterium five deselects all transactions of minority stakes. Secondly, the sixth criteria states that only fully cash- or share offers are included, however in 2017 many M&A transactions were a mixture between the two (Capital IQ). Thus, the criteria limit the data collection and exclude various transactions. Overall, the bar chart shows signs of an increasing trend after 2010 which peaks in 2016. Yet,

it can be expected that after 2016 the number of M&A transactions is increasing, but it is in not visible in the bar chart due to the selection criteria.

Figure 2: Number of M&A transaction, across Nordic countries

The bar chart illustrates the number of M&A transactions across country during the period of 01-01-2000 to 31.12.2019. The vertical axes present the number of M&A transactions.



Source: own calculations based on the data sample from Capital IQ

Figure 2 shows the number of transactions in the Nordic market across countries. Sweden is the country with highest M&A activity, both for target and acquirer firms. This illustration supports the statistics from Stata (2020), which also states that in the Nordic countries, Sweden has the highest M&A activity level. Next, Norway shows high M&A activity level, which is consistent with the general trend for the Nordic market. For the rest of the Nordic countries, it is difficult to see patterns, as the sample size is small due to the data selection.

Finally, this paper presents table 1 – 4 which show the transaction characteristics for target and acquirer companies in absolute and percentage terms. These transaction characteristics are essential, since they are used for testing the hypotheses.

Table 1: Transaction characteristics, absolute values (Target)

Number of M&A transactions	Denmark	Sweden	Norway	Finland	Total
Cash transactions	7	16	14	2	**39**
Share transactions	14	57	18	11	**100**
Total	21	73	32	13	**139**
Diversified transactions	4	14	12	1	**31**
Focused transactions	17	59	20	12	**108**
Total	21	73	32	13	**139**
Cross-border transactions	5	15	12	4	**36**
Domestic transactions	16	58	20	9	**103**
Total	21	73	32	13	**139**

Table 2: Transaction characteristics, percentage (Target)

Number of M&A transactions	Denmark	Sweden	Norway	Finland	Total
Cash transactions	33.3%	21.9%	43.8%	15.4%	**28.1%**
Share transactions	66.7%	78.1%	56.3%	84.6%	**71.9%**
Total	100.0%	100.0%	100.0%	100.0%	**100.0%**
Diversified transactions	19.0%	19.2%	37.5%	7.7%	**22.3%**
Focused transactions	81.0%	80.8%	62.5%	92.3%	**77.7%**
Total	100.0%	100.0%	100.0%	100.0%	**100.0%**
Cross-border transactions	23.8%	20.5%	37.5%	30.8%	**25.9%**
Domestic transactions	76.2%	79.5%	62.5%	69.2%	**74.1%**
Total	100.0%	100.0%	100.0%	100.0%	**100.0%**

Table 3: Transaction characteristics, absolute values (Acquirer)

Number of M&A transactions	Denmark	Sweden	Norway	Finland	Total
Cash transactions	3	16	15	5	**39**
Share transactions	13	57	20	12	**102**
Total	16	73	35	17	**141**
Diversified transactions	4	17	12	2	**35**
Focused transactions	12	56	23	15	**106**
Total	16	73	35	17	**141**
Cross-border transactions	1	14	14	8	**37**
Domestic transactions	15	59	21	9	**104**
Total	16	73	35	17	**141**

Table 4: Transaction characteristics, percentage (Acquirer)

Number of M&A transactions	Denmark	Sweden	Norway	Finland	Total
Cash transactions	18.8%	21.9%	42.9%	29.4%	**27.7%**
Share transactions	81.3%	78.1%	57.1%	70.6%	**72.3%**
Total	100.0%	100.0%	100.0%	100.0%	**100.0%**
Diversified transactions	25.0%	23.3%	34.3%	11.8%	**24.8%**
Focused transactions	75.0%	76.7%	65.7%	88.2%	**75.2%**
Total	100.0%	100.0%	100.0%	100.0%	**100.0%**
Cross-border transactions	6.3%	19.2%	40.0%	47.1%	**26.2%**
Domestic transactions	93.8%	80.8%	60.0%	52.9%	**73.8%**
Total	100.0%	100.0%	100.0%	100.0%	**100.0%**

Table 1 - 4 show that in general from target (acquirer) perspective 39 (39) transactions are cash offers and 100 (102) observations are share offers. Thus, 71.9% (72.3%) of the total M&A transactions in the Nordic market for target (acquirer) shareholders are share offers. Based on this paper's literature review, cash offers are often the preferred method of payment. For instance, the research study of Goergen and Renneboog (2003) shows that 45% of their observations are pure cash offers, 31% pure share offers, and 24% are either unknown or a mixture of both offers. They have more cash offers in their data sample, which can be due to different time periods, geographical areas, sample size, and objectives. Lastly, this paper only includes M&A transactions that are either fully cash or share offers, which may explain the difference.

Further, table 2 from target perspective, shows 22.3% diversified transactions whereas 77.3% are focused transactions. From the acquirer point of view, 75.2% are focused transactions and 24.8% diversified transactions. Therefore, the percentages from target- and acquirer perspectives are quite similar. On the contrary, previous research studies, such as Delong (2001) shows a data sample of 168 diversified transactions and 112 focused transactions. Thus, a higher number of observations with diversified- rather than focused transaction. (Delong, 2001) The deviations in this paper's results from previous research studies are as previously mentioned due different time periods, geographical areas, sample size, objectives, and selection criteria.

From target perspective, 74.1% of the M&A transactions in the Nordic market are domestic and 25.9% are cross-border transactions. From acquirer perspective, the percentage is 73.8% for domestic transactions and 26.2% for cross-border. This paper defines domestic M&As as transactions within the same country. Previous research studies reveal similar results, indicating substantial higher domestic transactions. Danbolt (2004), among others, shows a data sample of 514 domestic and 116 cross-border transactions. (Danbolt, 2004)

From both target and acquirer perspectives, Sweden is the country with the highest number of transactions that perform share offers, focused-, and domestic transactions. From target point of view, Sweden accounts for 57 share offers out of 100, and from acquirer perspective, 57 share offers out of 103. In Finland, majority of the transactions of both targets and acquirers are share offers and focused transactions. Further, from target perspective, 69.2% are domestic transactions compared to 52.9% from acquirer perspective. Like Finland, majority of transactions in Denmark consist of share offers,

domestic-, and focused M&A transactions. Moreover, from target perspective, 93.8% are domestic transactions. The transactions in Norway show a more conservative picture, however share offers, domestic-, and focused transactions still dominate.

In summary, the data sample shows that transactions in the Nordic market from 2000 – 2019 mainly consist of share offers, domestic-, and focused transactions. The number of M&A transactions demonstrate an increasing trend after 2010 which peaks in 2016. Moreover, the data sample from Sweden shows evidence of the highest activity level within the Nordic market, with 73 transactions from both target- and acquirer. Lastly, due to different time periods, geographical areas, sample size, objectives, and selection criteria this paper does not reveal similar result regarding the weight of transactions characteristics in the data sample.

9. Empirical results

This chapter presents the empirical results from testing our hypotheses on short-term value creation in the Nordic market. The hypotheses have been run through parametric t-tests, non-parametric t-tests, and cross-sectional regression analysis (multiple regression model). These models complement one another and therefore contribute with substantial analytical levels. The chapter divides the sections regarding to the hypotheses that are investigated; value creation, payment method, diversified against focused, and domestic against cross-border M&A transactions.

9.1 Value creation

This section tests whether CAAR is significant for respectively acquirer and target via hypotheses one and two. Firstly, AAR and CAAR are estimated through an event study based on three different event windows; ± 1, ± 5 and ± 10 trading days around the M&A announcement date. Thereafter, the significance of the results is tested through a parametric student t-test, with significance levels of 10%, 5%, and 1%. The parametric t-test shows absolute values of CAAR for each event window. However, since abnormal return is simply an average, extreme outliers may affect the results, and thus leading to non-normally distributed abnormal return. Therefore, the parametric tests will be supplemented by two non-parametric tests, which do not show absolute values but standardized return that are either lower or higher to an average, and thus indicating either abnormal return or abnormal losses. Non-parametric tests assess whether there is a significant abnormal return throughout the event window, and not only for some extreme observations on the M&A announcement date. Therefore,

non-parametric rank tests dominate parametric tests when using event studies to analyse abnormal return on a single day, because share prices are not normally distributed (Kolari & Pynnonen, 2011). Lastly, the results from this section are used as independent variables in the cross-sectional regression analysis later in this paper.

9.1.1 Hypothesis 1

The first hypothesis investigates whether M&A announcements create wealth for acquirer shareholders. As discussed in the theoretical framework and literature review, value in M&As is primarily created through synergies, which is in alignment with neoclassical theory. On the other hand, M&As may also destroy value due to behavioural theory aspects, such as asymmetric information, agency problems, managerial hubris, and winner's curse. The evidence of wealth creation for acquirers is ambiguous, as previous studies are divided between those who report a slightly positive, negative, and zero abnormal return. Thus, the first hypothesis is the following:

Hypothesis 1: Bidder shareholders experience zero abnormal return from M&A announcements

The hypothesis will be tested through a parametric t-test of CAAR and AAR, and subsequently non-parametric Rank- and Sign tests, in order to assess whether acquirer shareholders experience abnormal return from M&A announcements.

9.1.1.1 Parametric t-test

Table 5: Parametric t-test of CAAR (Acquirer)

The results from the parametric t-test for CAAR in the event study is presented in this table. The different event windows ±1, ±5, and ±10 trading days surrounding the M&A announcement date are used as dependent variables.

Event window	CAAR	t-value	p-value	No. Acquirers (N)
± 1 trading days	0.8%	1.84*	6.79%	141
± 5 trading days	0.6%	0.54	59.90%	141
± 10 trading days	-0.4%	-1.17	24.40%	141

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 5 shows that CAAR is highest for the shorter event windows, and thus indicating that acquirer shareholders experience higher abnormal return closer to the M&A announcement date. More specifically, acquirer shareholders receive insignificant -0.4% abnormal return ± 10 trading days surrounding the M&A announcement. In the shorter event window ± 1 trading days, acquirer

shareholders experience significant (10%) abnormal return of 0.8%. However, table 5 does not show whether acquirer shareholders experience significant abnormal return on the day prior to-, post-, or on the M&A announcement date. This will be assessed in table 6, showing the AAR for each day in the event window.

Table 6: Parametric t-test of AAR (Acquirer)

The results from the parametric t-test for AAR in the event study is presented in this table. The dependent variables are each day in the event window ±10 trading days surrounding the M&A announcement date.

Event window	AAR	t-value	p-value	No. Acquirers (N)
+ 10 trading days	0.13%	0.24	81.07%	141
+ 9 trading days	-0.29%	-1.42	15.78%	141
+ 8 trading days	-0.56%	-1.98**	4.97%	141
+ 7 trading days	0.18%	0.86	39.12%	141
+ 6 trading days	-0.08%	-0.14	88.89%	141
+ 5 trading days	0.02%	0.19	84.96%	141
+ 4 trading days	-0.47%	-2.01**	4.63%	141
+ 3 trading days	-0.04%	-0.46	64.62%	141
+ 2 trading days	-0.31%	-1.38	16.98%	141
+ 1 trading days	0.14%	0.33	74.19%	141
M&A announcement date	0.37%	1.89*	6.08%	141
- 1 trading days	0.33%	1.41	16.07%	141
- 2 trading days	0.29%	0.77	44.26%	141
- 3 trading days	-0.42%	-0.52	60.39%	141
- 4 trading days	0.64%	1,9*	5.95%	141
- 5 trading days	0.03%	0.31	75.70%	141
- 6 trading days	-0.18%	-1.13	26.04%	141
- 7 trading days	-0.53%	-2.01**	4.63%	141
- 8 trading days	0.42%	0.88	38.04%	141
- 9 trading days	0.08%	0.34	73.44%	141
- 10 trading days	-0.19%	-1.72	8.76%	141

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 6 shows both significant abnormal return and abnormal losses, which supports the ambiguous results of previous research studies. More specifically, seven days prior to the M&A announcement date acquirer shareholders receive significant (5%) abnormal return of -0.53%, compared to significant (10%) abnormal return of 0.64% four days prior to the event. Therefore, the findings show both significant abnormal return and abnormal losses prior to the event, which may be due to rumours, as well as leaked information prior to the M&A announcement date. This may indicate that acquirer shareholders who knew about the M&A transaction prior to it being publicly announced, where

conflicted as to whether it would create wealth, just like the ambiguous previous research studies, which may explain both the significant abnormal return and abnormal losses prior to the M&A announcement date. On the M&A announcement date acquirer shareholder experience a significant (10%) abnormal return of 0.37%, which however is adjusted by abnormal losses post the M&A announcement date. More specifically, abnormal return of -0.47% and -0.56%, respectively four and eight trading day post the M&A announcement, both at a 5%-significance level.

The substantial lower abnormal return for acquirer shareholders compared to target shareholders can be explained through three main factors; agency problems, managerial hubris, and winner's curse. Agency problems have been documented in previous research studies, such as Danbolt (2004) who argues that M&As may not only be driven by maximization of shareholder wealth. The acquirer company's management might focus on own interests, such as maximizing own status, salary, and power. Therefore, the management is more likely to pay a higher premium in M&As in order to serve their own interest, which results in agency problems. This leads to lower abnormal return for acquirer shareholders. (Danbolt, 2004). The agency problem in M&As is also documented by Firth (1991) who finds that managements of UK acquirer firms gain from M&As regardless of whether it is creating or destroying value for their shareholders (Firth, 1991). In addition, managerial hubris in M&As is documented by several research studies. Roll (1986) finds that, empirical evidence supports the managerial hubris in M&As as much, as it supports other theories, such as synergies, taxes, and inefficient target management. The management of acquirer firms often overestimate the economic benefits, and thus pay a higher price premium. Therefore, the higher price premium may be a result of a valuation error due to managerial overconfidence, which leads to higher abnormal return for target shareholders at the expense of acquirer shareholders. (Roll, 1986) Further, winner's curse in M&As has been empirically documented by several research studies, including Varaiya and Ferris (1987) who argue that when there are multiple bidders for a takeover, the most "successful" bidder is the one that overestimates the target firm's value the most. Therefore, the winner's curse often increases the wealth creation for target shareholders at the expense of acquirer shareholders. (Varaiya & Ferris, 1987) The winner's curse in M&As is also documented by Bradley, Desai and Kim (1988) who find that competition between bidding firms decreases the return to acquirer shareholders (Bradley, Desai & Kim, 1988).

9.1.1.2 Non-parametric t-test

The non-parametric tests are used to see if there are abnormal return throughout the event windows, and not only a few extreme outliers on specific trading days surrounding the M&A announcement date. The Rank test is developed by Corrado (1989) and shows how many observations that are above an average, for example more 1's than 0's. Therefore, an event window average above 50% with significant results, indicates that the event window has more trading days with positive- rather than negative abnormal return. (Corrado (1989) One could criticize the Rank test, as the abnormal return from the M&A announcement date will affect the significance of the whole event window. Therefore, the Rank test is supplemented with the Sign test by Cowan (1992). The Sign test does not include the abnormal return's size, and thus the higher abnormal return on the M&A announcement date does not affect the significance of other trading days in the event window.

Table 7: Non-parametric Rank test (Acquirer)

The results from the non-parametric Rank test is presented in this table. If the event window average is higher than 50% it indicates abnormal return. The different event windows ±1, ±5, and ±10 trading days surrounding the M&A announcement date are used as dependent variables.

Event window	Event window average	t-value	p-value	Trading days in event window (N)
± 1 trading days	50.98%	1.02	38.28%	3
± 5 trading days	50.27%	0.46	65.45%	11
± 10 trading days	49.03%	-0.38	70.78%	21

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 7 shows an event window average above 50% in the two shorter event windows, and thus indicating abnormal return. The event window average is below 50% in the longer event window, which indicates abnormal losses. However, none of the results are statistically significant. Therefore, the Rank test indicates that there is no significance of abnormal return nor abnormal losses in neither of the event windows when accounting for non-normal distributions.

Table 8: Non-parametric Sign test (Acquirer)

The results from the non-parametric Sign test is presented in this table. If the event window average is higher than 50% it indicates abnormal return. The different event windows ±1, ±5, and ±10 trading days surrounding the M&A announcement date are used as dependent variables.

Event window	Event window average	t-value	p-value	Trading days in event window (N)
± 1 trading days	49.66%	-0.21	84.71%	3
± 5 trading days	48.97%	-0.57	58.01%	11
± 10 trading days	46.98%	-0.63	53.55%	21

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 8 shows an event window average below 50% in the three event windows, and thus indicating abnormal losses. However, the results are not significant. Therefore, the Sign test indicates that there is no significance of abnormal return nor abnormal losses in the event windows when accounting for non-normal distributions and the abnormal return's size.

9.1.1.3 Sub conclusion

The parametric tests indicate that acquirer shareholders experience on average a slightly positive abnormal return of 0.8% with a 10% significance level in the three days surrounding the M&A announcement date. Majority of the abnormal return is derived from the M&A announcement day. The two non-parametric tests show no significant abnormal return in neither of the three event windows when accounting for non-normal distributions and the abnormal return's size. Based on the empirical findings; small abnormal return of 0.8% and only significant at 10% level, this paper concludes that abnormal return to acquirer shareholders as a result of M&A announcements is limited. The behavioural factors, such as agency problems, managerial hubris, and winner's curse dominate the economic benefits of potential synergies. Therefore, this paper fails to reject the first hypothesis, which means acquirer shareholders experience zero abnormal return as a result of M&A announcements. This is in alignment with majority of previous research studies, including Goergen and Renneboog (2003), Dennis and McConnell (1986), Smith and Kim (1994), Healy, Palepu and Ruback (1992), among others.

9.1.2 Hypothesis 2

The second hypothesis assesses whether M&A announcements create wealth for target shareholders. As discussed in the theoretical framework and literature review, value in M&As is primarily created through synergies, which is in alignment with neoclassical theory. Further, behavioural theory aspects that may destroy value in M&As, such as agency problems and managerial hubris are also applicable for target shareholders, however the following analysis will not focus on these, since they have been discussed in the previous hypothesis. The empirical evidence for target shareholders is clear, and

majority of research studies find evidence of significant abnormal return to target shareholders as a result of M&A announcements. Therefore, the following hypothesis is:

Hypothesis 2: Target shareholders receive abnormal return from M&A announcements

9.1.2.1 Parametric t-test

Table 9: Parametric t-test of CAAR (Target)

The results from the parametric t-test for CAAR in the event study is presented in this table. The different event windows ±1, ±5, and ±10 trading days surrounding the M&A announcement date are used as dependent variables.

Event window	CAAR	t-value	p-value	No. Targets (N)
± 1 trading days	22.7%	28.73***	0.00%	139
± 5 trading days	24.0%	14.72***	0.00%	139
± 10 trading days	25.3%	11.83***	0.00%	139

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: Own calculations based on the data sample from Capital IQ

Table 9 shows significant (1%) abnormal return for target shareholders in the three event windows ± 1, ± 5, and ± 10 trading days. The abnormal return tends to increase with the length of the event window. However, table 9 does not reveal whether the significant abnormal return occurs the day before-, under-, or after the M&A announcement. This will be highlighted in table 10.

Table 10: Parametric t-test of AAR (Target)

The results from the parametric t-test for AAR in the event study is presented in this table. The dependent variables are each day in the event window ±10 trading days surrounding the M&A announcement date.

Event window	AAR	t-value	p-value	No. Targets (N)
+ 10 trading days	-0.17%	-0.82	41.36%	139
+ 9 trading days	0.19%	0.67	50.40%	139
+ 8 trading days	0.17%	0.18	85.74%	139
+ 7 trading days	0.04%	0.12	90.47%	139
+ 6 trading days	0.15%	0.38	70.45%	139
+ 5 trading days	-0.18%	-0.43	66.79%	139
+ 4 trading days	0.13%	0.22	82.62%	139
+ 3 trading days	0.06%	0.11	91.26%	139
+ 2 trading days	-0.04%	-0.29	77.22%	139
+ 1 trading days	1.21%	1.96*	5.19%	139
M&A announcement date	19.88%	43.27***	0.00%	139
- 1 trading days	1.63%	3.14***	0.21%	139
- 2 trading days	-0.09%	-0.42	67.51%	139
- 3 trading days	1.32%	2.79***	0.60%	139
- 4 trading days	0.29%	1.03	30.48%	139
- 5 trading days	-0.17%	-0.58	56.29%	139
- 6 trading days	0.53%	1.51	13.33%	139
- 7 trading days	0.42%	1.76*	8.06%	139
- 8 trading days	-0.16%	-0.83	40.80%	139
- 9 trading days	-0.07%	-0.56	57.64%	139
- 10 trading days	0.13%	0.17	86.53%	139

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 10 shows significant (10% and 1%) abnormal return ranging from 0.42% - 1.63% to target shareholders on the seventh, third and first day prior to the M&A announcement. On the M&A announcement date the abnormal return peeks at 19.88% and is in addition the most significant trading day. Further, target shareholders receive significant (10%) abnormal return of 1.21% the first trading day post the M&A announcement date.

This paper assesses that the abnormal return for both acquirer and target shareholders is limited due to the data sample. As discussed in the descriptive statistics section, from target (acquirer) perspective 71.9% (72.3%) of the M&A transactions in the sample are share offers. For instance, the research study from Goergen and Renneboog (2003) shows that 45% of their observations are pure cash offers, 31% pure share offers, and 24% are either unknown or a mixture of both offers. The literature review of previous research studies show that cash offers is often the preferred method of payment, as it leads to substantial higher abnormal return of both acquirer- and target shareholders. Therefore, this paper argues that the limited amount of cash M&A transactions in the sample decreases the abnormal return of both acquirer- and target shareholders.

However, the findings still show significant abnormal return to target shareholders, which is in alignment with majority of previous research studies who tend to agree that M&A announcements create wealth for target shareholders. The main driver of wealth creation in M&As seem to be synergies (Goergen & Renneboog, 2003). As mentioned in neoclassical theory, synergies are the positive stepwise net gain related to M&As (Ross et al., 2011). Synergies may result in abnormal return, as the synergies create a higher value for the target shareholders than the value of the individual firms. The synergies are categorized in operational-, financial-, and managerial synergies. Operational synergies can be cost reduction, higher growth, and greater market power. The financial synergies arise from improved efficiency in financial activities, and managerial synergies can occur through more efficient managements. Therefore, the three synergies may explain the abnormal return for target shareholders in the Nordic market. Previous research studies also argue that behavioural theory aspects, such as winner's curse and managerial hubris, may result in higher abnormal return. Varaiya and Ferris (1987) argue that winner's curse increases the value for the target company, since the bidding company is overestimating the value of the target company. Additionally, Roll (1986) among others, finds evidence that managerial hubris, as well as synergies and inefficient management leads to abnormal return for target shareholders at the expense of the bidder shareholder.

Furthermore, this paper's findings contradict the EMH theory. As previously discussed, the EMH theory argues that in efficient markets the stock prices contain all private- and public information, and thus all relevant information should be captured on the M&A announcement date. Therefore, there should be no significant abnormal return in the days before or after the M&A announcement day. (Fama, 1970) Contradictory, this paper and previous research studies find that target shareholders receive significant abnormal return post the M&A announcement date, which indicates that the market does not capture all relevant information immediately. Therefore, this paper's empirical evidence contradicts the EMH theory. Furthermore, the above findings show significant abnormal return in the days prior to the M&A announcement, which may be due to rumours or leaked information. This also supports this paper's assessment that it is wrong simply assuming a semi-strong market efficiency, as investors would not be able to anticipate the M&A announcement prior to it being public. Therefore, this paper's assumption that the market efficiency is a grey-zone between semi-strong and strong market efficiency is also supported by the empirical findings.

9.1.2.2 Non-parametric t-test

Table 11: Non-parametric Rank test (Target)

The results from the non-parametric Rank test is presented in this table. If the event window average is higher than 50% it indicates abnormal return. The different event windows ±1, ±5, and ±10 trading days surrounding the M&A announcement date are used as dependent variables.

Event window	Event window average	t-value	p-value	Trading days in event window (N)
± 1 trading days	63.74%	5.94***	0.95%	3
± 5 trading days	57.12%	3.81***	0.28%	11
± 10 trading days	53.82%	3.01***	0.67%	21

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

The non-parametric Rank test for target shareholders displays average event window on 63.74%, 57.12%, and 53.82%, respectively ± 1, ± 5, and ± 10 trading days surrounding the M&A announcement day. The results in the three event windows are all statistically significant at a 1% significance level. Therefore, the Rank test indicates that there is significant abnormal return in all three event windows even when accounting for non-normal distributions. However, it is important to underline that the abnormal return from the M&A announcement date can affect the significance of the rest of the event window's trading days. Therefore, the analysis is supplemented with a Sign test.

Table 12: Non-parametric Sign test (Target)

The results from the non-parametric Sign test is presented in this table. If the event window average is higher than 50% it indicates abnormal return. The different event windows ±1, ±5, and ±10 trading days surrounding the M&A announcement date are used as dependent variables.

Event window	Event window average	t-value	p-value	Trading days in event window (N)
± 1 trading days	57.06%	2.92	6.15%	3
± 5 trading days	51.68%	0.96	35.77%	11
± 10 trading days	48.73%	-0.78	44.41%	21

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

The Sign test shows that the two event windows ± 1 and ± 5 trading days indicate abnormal return. However, only the shortest event window is statistically significant (10%). In contrast, the longer event window ± 10 trading days show insignificant abnormal losses. Therefore, unlike the Rank test, the Sign test indicates that only the shortest event window of ± 1 trading days is statistically significant when accounting for non-normal distributions and the abnormal return' size.

9.1.2.3 Sub conclusion

In summary the parametric t-test of CAAR and AAR demonstrate high and significant return for target shareholders on the day of announcement. The parametric t-test of AAR shows significant average abnormal from 0.42% - 1.63% on the seventh, third, and first day prior to the M&A announcement. The abnormal return peeks at 19.88%, which is on the most significant M&A trading day. In addition, the non-parametric tests show that the day prior to- and following the announcement date have positive and significant impact on the abnormal return, which may indicate rumours or even insider trading. Further, the significant abnormal return on the day after the M&A announcement date indicates that the market is not entirely efficient as argued by Fama (1970). Conclusively, this paper cannot reject the hypothesis, which indicates that target shareholders in the Nordic market receive significant abnormal return from M&A announcements. This contradicts both Fama (1970) and the neoclassical theory. Similar results have been documented by previous research studies, such as Goergen and Renneboog (2003), Danbolt (2004), Roll (1986), Asquith (1982), and Varaiya and Ferris (1987), despite the fact, that the thesis purpose and data sample is not completely identical. Furthermore, this paper assesses that the abnormal return for both acquirer- and target shareholders is limited due to the limited amount of cash M&A transactions in the data sample.

9.2 Payment method

This section presents hypotheses three and four, which investigate whether the payment method affects wealth creation for shareholders of acquirer- and target firms. Neoclassical theory argues that payment method should not affect shares prices, provided that all securities are priced correctly and that the share prices fully reflect all relevant information. However, empirical evidence shows that cash offers create higher abnormal return for shareholders of both acquirer- and target firms. Previous research studies reveal that behavioural theory aspects, such as the signalling-, leverage effect, and agency costs of free cash flow affect shareholder wealth creation. Therefore, this section seeks to examine whether the payment method affects abnormal return for shareholders of acquirer- and target firms.

9.2.1 Hypothesis 3

The third hypothesis investigates whether cash offers result in higher abnormal return than share offers for acquirer shareholders. From a purely theoretical point of view, neoclassical theory argues that abnormal return should not be affected by the payment method (Ross et al., 2011). However, previous research studies argue that behavioural factors, such as signalling-, leverage effect, and agency costs

of free cash flow may result in cash offers yielding higher abnormal return than share offers for acquirer shareholders. Hence, the third hypothesis is the following:

Hypothesis 3: Cash offers result in higher abnormal return than stock offers for bidder shareholders

The hypothesis will be examined through a multiple regression analysis, which tests CAAR in the three event windows. The regression is run on the dependent variables, cash- and share offers. Moreover, these variables are dummy variables, which means they are equal to 1 for cash offers, and equal to 0 for share offers. Further, control variables regarding industry classifications are included in order to see if they affect the dependent variables, and thus the shareholder wealth creation.

9.2.1.1 Multiple regression analysis

Table 13: Multiple regression analysis (Acquirer)

CAAR in the three event windows are used as independent variables. The intercept (cash offers) is set as benchmark and equals 1 if the payment method is cash, whereas share offers equal zero. The control variables consist of industry classifications, and (service) is set as benchmark. The t-values are calculated through heteroskedasticity robust standard errors.

	CAAR [-1;1]			CAAR [-5;5]			CAAR [-10;10]		
Variables	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Intercept (cash offers)	0.035	1.34	18.24%	0.011	0.48	63.20%	0.026	0.87	38.58%
Stock offers	-0.003	-0.56	57.64%	0.001	0.36	72.31%	-0.002	-0.42	67.51%
Control variables:									
Advertising	0.002	0.47	63.91%	0.004	0.56	57.64%	0.001	0.47	63.91%
Air Freight and Logistics	-0.004	-0.53	59.69%	0.002	0.62	53.63%	-0.002	-0.18	85.74%
Construction and Engineering	0.061	0.66	51.03%	0.042	0.73	46.66%	0.055	0.82	41.36%
IT Consulting & Software	-0.009	-0.42	67.5125	-0.004	-0.38	70.45%	-0.002	-0.55	58.32%
Manufacturing	0.003	0.24	81.07%	0.004	0.18	85.74%	0.005	0.34	73.44%
Retail	0.011	0.39	69.71%	0.006	0.56	57.64%	0.009	0.61	54.28%
Science	-0.005	-0.31	75.70%	0.001	0.16	87.31%	-0.003	-0.37	71.19%

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 13 displays that cash offers in the ± 1 event window generate abnormal return of 3.5% to acquirer shareholders. Share offers result in abnormal return of 3.2% (0.035 + (-0.003)). For the event window ± 5 trading days, bidder shareholders experience abnormal return of 1.1% from cash offers, compared to 1.2% (0.011 + 0.001) from stock offers. Therefore, abnormal return from share offers compared to cash offers is higher in this event window, which contradicts previous research studies. It is important to stress that the result is not statistically significant. Finally, in the ± 10 event window bidder shareholders receive abnormal return of 2.6% from cash offers, and slightly lower 2.4% (0.026

+ (-0.002)) abnormal return from stock offers. However, none of the dependent variables nor control variables are statistically significant. Based on the fact, that the empirical results are not statistically significant from acquirer's point of view, this paper assesses that it is more relevant discussing the theoretical factors, such as signalling-, leverage effect, and agency costs of free cash flow in hypothesis four.

9.2.1.2 Sub conclusion

Overall, the results from the multiple regression analysis show slightly higher acquirer abnormal return from cash- rather than stock offers. However, none of the dependent variables nor control variables are statistically significant. Therefore, this paper rejects the third hypothesis, which means that there is no empirical evidence that payment method affects acquirer shareholder abnormal return as a result of M&A announcements in the Nordic market. This is in alignment with majority of previous research studies, including Harris, Franks & Mayer (1987), King (1986), Shleifer & Vishny (2003), among others.

9.2.2 Hypothesis 4

The fourth hypothesis investigates whether cash offers result in higher abnormal return than share offers for target shareholders. Same as for the previous hypothesis, neoclassical theory argues that abnormal return should not be affected by the payment method (Ross et al., 2011). However, empirical evidence from previous research studies show that target shareholders' abnormal return varies substantial by the payment method. More specifically, empirical evidence shows positive significant abnormal return for cash offers and negative or substantially smaller significant abnormal return for share offers. This is mainly explained through the three recognized behavioural factors; signalling-, leverage effect, and agency cost of free cash flow. Thus, the following hypothesis is:

Hypothesis 4: Cash offers result in higher abnormal return than stock offers for target shareholders

The multiple regression analysis is similar to the one in hypothesis 3 but from the point of view of target shareholders. Therefore, the dependent variables are still cash- and share offers, and control variables regarding industries are still included.

9.2.2.1 Multiple regression analysis

Table 14: Multiple regression analysis (Target)

CAAR in the three event windows are used as independent variables. The intercept (cash offers) is set as benchmark and equals 1 if the payment method is cash, whereas share offers equal zero. The control variables consist of industry classifications, and (service) is set as benchmark. The t-values are calculated through heteroskedasticity robust standard errors.

	CAAR [-1;1]			CAAR [-5;5]			CAAR [-10;10]		
Variables	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Intercept (cash offers)	0.283	2.21**	2.87%	0.279	1.71*	8.95%	0.281	1.42	15.78%
Stock offers	-0.042	-1.98**	4.97%	-0.035	-1.56	12.10%	-0.039	-1.59	11.41%
Control variables:									
Advertising	-0.042	-0.67	50.40%	-0.028	-0.77	44.26%	-0.031	-0.82	41.36%
Air Freight and Logistics	0.117	1.12	26.46%	0.092	1.04	30.01%	0.083	0.94	34.88%
Construction and Engineering	0.154	1.18	24.00%	0.126	1.33	18.57%	0.144	1.07	28.65%
IT Consulting & Software	-0.082	-0.73	46.66%	-0.049	-0.61	54.29%	-0.052	-0.81	41.93%
Manufacturing	0.123	1.21	22.83%	0.138	1.12	26.46%	0.141	1.04	30.01%
Retail	-0.039	-0.45	65.34%	0.013	0.35	72.69%	-0.018	-0.62	53.63%
Science	-0.038	-0.63	52.97%	-0.019	-0.58	56.29%	-0.025	-0.76	44.85%

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 14 shows significant and positive CAAR coefficients in two out of three event windows. The event window ± 1 trading days shows that target shareholders receive a significant (5%) abnormal return of 28.3% from cash offers, compared to a significant (5%) abnormal return of 24.1% (0.283 + (-0.042)) from share offers. In the event window ± 5 trading days target shareholders experience significant (10%) abnormal return of 27.9%, whereas share offers yield insignificant abnormal return of 24.4% (0.279 + (-0.035)). The event window ± 10 trading days shows abnormal return of 28.1% from cash offers and 24.2% (0.281 + (-0.039)) from share offers, however they are both insignificant. Lastly, none of the control variable are statistically significant.

Overall, the abnormal return in the event windows is higher from cash offers compared to share offers. This contradicts neoclassical theory but can explained through three recognized behavioural theory aspects within M&As; signalling-, leverage effect, and agency costs of free cash flow. The signalling effect occurs when asymmetric information is present, as investors are often influenced by managerial decisions. (Cornett et al., 2010) When the market and management do not have the same information, the management's choice of payment method signals their assessment of the true value of the combined firm's assets. Hence, rational acquirers will pay in cash (stock) if they believe the true value is undervalued (overvalued). Therefore, cash offers signal that the target firm is undervalued, which drives up the share prices, all else equal. Schleifer and Vishny (2003) developed a model based on the signalling effect, showing that acquirers have incentives to make cash offers for undervalued targets, as they expect their stock price to increase in the long-term, and vice versa. Thus, the market

should react negatively to share offers, which results in abnormal losses for shareholders of both target and bidder firms. (Shleifer & Vishny, 2003)

By extension, higher abnormal return from cash offers may be due to the leverage effect. Myers-Majluf (1984) find evidence that bidders offering cash rather than equity in M&As, experience substantial higher return. Firms making cash offers are more likely to have a higher level of debt, all else equal. Therefore, firms offering cash may receive higher return due to the signal of higher debt; the leverage effect. (Myers-Majluf, 1984) The leverage effect entails that taking on more debt results in higher return on equity if the cost of additional debt is lower than the total return on the investment. If asymmetric information is present then the leverage effect signals that the firm is highly profitable, as it is financing itself internally. Firms that finance themselves through debt send a signal that they are able to meet their monthly obligations, and that they believe their projects will provide positive financial return. (Ross et al., 2011)

Further, the higher abnormal return from cash offers may be due to the agency costs of free cash flow. The main argument is that shareholders benefit from anything (including cash acquisitions) that prevent managers from spending free cash flow wastefully, and thus decreases agency costs. Jensen (1986) argues that managers with a lot of free cash flow are more likely to spend it on negative NPV investments, instead of distributing it out to shareholders through either share buyback or dividends. The hypothesis of agency costs of free cash flow is empirically supported by Lang, Stulz and Walkling (1991), Goergen and Renneboog (2001), Yook (2003), Harford, Mansi and Maxwell (2008), among others.

9.2.2.2 Sub conclusion

In summary, the event window ± 1 trading days shows a significant (5%) abnormal return of 28.3% from cash offers, compared to a significant (5%) abnormal return of 24.1% from share offers. In the event window ± 5 trading days target shareholders experience significant (10%) abnormal return of 27.9%, whereas share offers yield insignificant abnormal return of 24.4%. Further, the abnormal return of both cash- and share offers are insignificant in the event window ± 10 trading days. Overall, the results from the multiple regression analysis show substantial higher and significant abnormal return from cash offers, especially in the shorter event windows. This contradicts neoclassical theory but can explained through three recognized behavioural theory aspects within M&As; signalling-, leverage effect, and agency costs of free cash flow. The findings of this paper are in alignment with

majority of previous research studies. Therefore, this paper fails to reject the fourth hypothesis, which means that there is empirical evidence in the shorter event windows that cash offers yield higher abnormal return to target shareholders, as a result of M&A announcements in the Nordic market.

9.3 Diversified vs. focused M&A

The next section investigates to what extent diversified- or focused M&As generate the highest abnormal return. When one wishes to expand the firm's business, M&As is an effective solution. Through either a focused M&A, where the bidder and target companies are within the same industry, or a diversified M&A, where the bidder and target firms are within different industries. Theoretically, previous research literature is more ambiguous as to whether diversified M&As increase or reduce shareholder wealth. The older research studies address benefits of diversification, such as managerial economies of scale, economies of scope, internal capital markets, and join taxation. In contrast to newer studies that are criticizing the lack of empirical evidence of the above stated aspects, and not least the diversification effect. Despite the fact, that theoretical statements are more ambiguous, empirical evidence broadly agrees that focused M&As tend to yield higher abnormal return both for bidder- and target shareholders.

9.3.1 Hypothesis 5

Hypothesis five investigates the type of M&A (focused vs. diversified) from acquirer shareholders' point of view. Focused M&As involve firms within the same industry, in contrast to diversified M&As that involve firms in unrelated industries (Brealey et. al., 2011). Previous research studies reach various conclusions for bidder shareholders. However, more recent research studies find empirical evidence that focused M&As generate higher abnormal return for acquirer shareholders. Therefore, the fifth hypothesis is the following:

Hypothesis 5: Focused M&As yield higher abnormal return than diversified M&As for bidder shareholders

9.3.1.1 Multiple regression analysis

Table 15: Multiple regression analysis (Acquirer)

CAAR in the three event windows are used as independent variables. The intercept (focused M&As) is set as benchmark and equals 1 if it is focused transactions, whereas diversified transactions have the value zero. The control

variables consist of industry classifications, and (service) is set as benchmark. The t-values are calculated through heteroskedasticity robust standard errors.

	CAAR [-1;1]			CAAR [-5;5]			CAAR [-10;10]		
Variables	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Intercept (focused M&As)	0.028	1.81*	7.25%	0.013	1.52	13.08%	0.019	1.56	12.10%
Diversified M&As	-0.009	-2.01**	4.64%	-0.011	-1.02	30.95%	0.001	0.98	32.88%
Control variables:									
Advertising	0.003	0.74	46.05%	0.002	0.81	41.93%	-0.001	-0.34	73.44%
Air Freight and Logistics	0.011	0.98	32.88%	0.008	1.01	31.43%	0.009	0.84	40.24%
Construction and Engineering	0.009	0.72	47.27%	0.012	0.84	40.24%	0.014	1.04	30.01%
IT Consulting & Software	0.015	0.26	79.52%	0.011	0.35	72.69%	0.013	0.65	51.68%
Manufacturing	0.004	0.52	60.39%	0.007	0.69	49.13%	0.008	0.71	47.89%
Retail	0.008	0.49	62.49%	0.005	0.58	56.29%	0.003	0.42	67.51%
Science	0.002	0.33	74.19%	0.004	0.29	77.22%	0.004	0.41	68.24%

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

The multiple regression analysis in table 15 demonstrates significant coefficients in the days surrounding the event window ± 1 trading days. Focused M&As reveal significant (10%) CAAR of 2.8%, whereas diversified M&As yield significant (5%) CAAR of 1.9%. The rest of the control variables and coefficients display insignificant and minor abnormal return. The longer event windows show insignificant results, which indicates that information regarding the M&A type is absorbed in the share prices the day before, on, and after the M&A announcement. From a theoretical perspective Brealey et al. (2011) explain that conglomerate M&As (diversified M&A) occur when two firms merge from separate and unrelated industries. Consequently, the benefits of conglomerates are diversification and cross selling. On the other hand, the drawback are the lack of focus and experience in the new industry. These disadvantages could explain the lower abnormal return compared to focused M&As. Advantages of focused M&As are reduced cost and competition in the market, because of increased market power. At the same time, the disadvantages are cultural clashes and the lack of ability to exploit complementary skills and resources in an efficient way. Thus, the expected negative- and positive synergies from the M&A types are attributing to a minor CAAR. The CAARs are around 2%, which is substantial lower than the abnormal return when testing on payment methods.

The previous research studies find ambiguous evidence. Nayyar (1993) argues that diversified M&A have a higher probability of experiencing economies of scope, through cost savings, sharing know-how, and operational skills (Nayyar, 1993). Subsequently, Chandler (1977) argues that diversified M&As result in better managerial decisions and cost efficiency. By performing a diversified M&A, the two firms will have a more specialized management team together than separately, as their skills are focused and specialized. (Chandler, 1977) In contrast, previous research studies, such as Comment

and Jarrell (1995) find a small economic penalty to diversified M&As when comparing share return in focused- and diversified M&As. The empirical evidence tends to agree that diversified M&As lead to lower abnormal return than focused M&A, which Doukas, Holmen and Travlos (2001), Berger and Ofek (1995), among others, also agree on.

9.3.1.2 Sub conclusion

From the analysis of acquirer's perspective, it can be concluded that empirical evidence on focused- versus diversified M&As is ambiguous. Like previous research studies, this paper reveals that both diversified- and focused M&As generate significant positive abnormal return closest to the event window. The rest of the event windows' coefficients are statistically insignificant. Focused M&As yield a higher CAAR than diversified M&As for acquirer shareholders. Hence, this paper fails to reject the hypothesis, which indicates higher abnormal return from focused M&As to acquirer shareholders.

9.3.2 Hypothesis 6

The sixth hypothesis focuses on target shareholders. This paper expects that target shareholders experience higher abnormal return from focused M&As. As previously, the theoretical evidence is ambiguous, however more recent empirical evidence tends to agree that focused M&As generate higher return than diversified M&As. Therefore, the sixth hypothesis is formulated as:

Hypothesis 6: Focused M&As yield higher abnormal return than diversified M&As for target shareholders

9.3.2.1 Multiple regression analysis

Table 16: Multiple regression analysis (Target)

CAAR in the three event windows are used as independent variables. The intercept (focused M&As) is set as benchmark and equals 1 if it is focused transactions, whereas diversified transactions have the value zero. The control variables consist of industry classifications, and (service) is set as benchmark. The t-values are calculated through heteroskedasticity robust standard errors.

	CAAR [-1;1]			CAAR [-5;5]			CAAR [-10;10]		
Variables	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Intercept (focused M&As)	0.241	1.89*	6.08%	0.258	1.44	15.21%	0.196	0.83	40.80%
Diversified M&As	-0.063	-1.76*	8.06%	-0.041	-1.32	18.90%	-0.052	-0.91	36.44%
Control variables:									
Advertising	-0.064	-0.49	62.49%	-0.082	-0.57	56.96%	-0.051	-0.73	46.66%
Air Freight and Logistics	0.091	1.21	22.83%	0.128	1.72*	8.77%	0.155	1.24	21.71%
Construction and Engineering	0.022	0.87	38.58%	0.041	0.67	50.40%	0.037	1.05	29.55%
IT Consulting & Software	0.045	1.23	22.08%	0.052	1.09	27.76%	0.068	1.48	14.11%
Manufacturing	0.118	1.74*	8.41%	0.166	1.59	11.41%	0.131	1.52	13.08%
Retail	0.089	1.12	26.46%	0.131	1.22	22.45%	0.117	1.34	18.24%
Science	-0.023	-0.71	47.89%	-0.029	-0.91	36.44%	-0.335	-0.86	39.13%

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 16 shows significant CAAR coefficients for target shareholders in the event window surrounding the M&A announcement day. Focused M&As (diversified M&As) display significant CAAR of 24.1% (17.8%), which is substantial higher than the abnormal return for acquirer shareholders. The previous hypothesis for bidder shareholders shows a CAAR level around 2%, whereas target shareholders experience CAAR of around 20%. Moreover, table 16 illustrates that the control variable manufacturing is significant (10%). Hence, manufacturing firms experience abnormal return that is 11.8% higher than service firms, the benchmark. However, as the paper's final data sample is limited, it is expected that the control variables have insignificant influence on the M&A transaction type. This is also supported by all the control variables being insignificant in the previous hypotheses, which could indicate that this is a one-time incident.

In general, the results are ambiguous, which is in alignment with previous research studies. (Graham, Lemmon & Wolf, 2002) concludes that focused M&As generate higher abnormal return. (Doukas, Holmen & Travlos, 2001) finds that diversified M&As result in higher abnormal return. Therefore, previous research studies have ambiguous conclusions, however more recent research papers tend to agree that focused M&As yield higher abnormal return. According to Brealey et al. (2011) the advantages of executing a focused M&A are economies of scale, market power, and reducing costs. On the other hand, the disadvantages are cultural differences and not being able to use the resources in an efficient way. The advantages of diversified M&As are cross selling, more specialized management team, and diversification. The risks are the absence of focus and no experience within the new industry. (Brealey et al., 2011) These sources are attributing in destroying- and adding value to target shareholders.

9.3.2.2 Sub conclusion

Conclusively, this paper fails to reject the hypothesis, since target shareholders experience higher abnormal return from focused M&As compared to diversified M&As in the Nordic market. Therefore, target shareholder wealth increases when the M&A involves firms within the same industry.

9.4 Cross-border vs. domestic transactions

The two hypotheses of this section test whether domestic or cross-border transactions result in the highest abnormal return. Previous research studies argue that the theoretical advantages of cross-border transactions are market access, exchange rate effect, and international portfolio diversification (Pringle, 1991). Moreover, Pringle (1991) argues that international acquisitions are motivated by needs, such as expanding into new markets, operating locally, and economies of scale. However, Jacquillat and Solnik (1978), among others, find empirical evidence that investing in multinational firms is not a valid substitute to international portfolio diversification. Therefore, simply diversifying through cross-border transactions does not result in an efficient portfolio. (Jacquillat & Solnik, 1978) In addition, several research studies claim that cross-border transactions do not create value due to political, economic, cultural, and legal transactions barriers. (Campa & Hernando, 2004) Overall, a partial majority of previous research studies tend to agree that the cross-border effect decreases shareholder wealth.

9.4.1 Hypothesis 7

The seventh hypothesis examines whether domestic M&As result in higher abnormal return than cross-border transactions for acquirer shareholders. Previous empirical evidence seems to be ambiguous as to whether the cross-border effect increases or decreases shareholder wealth. However, a partial majority of researchers tend to agree that the cross-border effect slightly decreases value for bidder shareholders. Thus, the seventh hypothesis is the following:

Hypothesis 7: Domestic transactions yield higher abnormal return for bidder shareholders

The theoretical advantages of cross-border transactions; market access, exchange rate effect, and international portfolio diversification tend to favour target shareholders, and therefore this paper assesses that it is more relevant discussing these theoretical factors in hypothesis 8.

9.4.1.1 Multiple regression analysis

Table 17: Multiple regression analysis (Acquirer)

CAAR in the three event windows are used as independent variables. The intercept domestic M&As) is set as benchmark and equals 1 if is focused transactions, whereas diversified transactions have the value zero. The control variables consist of industry classifications, and (service) is set as benchmark. The t-values are calculated through heteroskedasticity robust standard errors.

	CAAR [-1;1]			CAAR [-5;5]			CAAR [-10;10]		
Variables	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Intercept (domestic M&As)	0.031	1.02	30.95%	0.024	0.67	50.40%	0.026	0.61	54.29%
Cross-border M&As	-0.016	-0.93	35.40%	-0.013	-1.15	25.21%	-0.017	-0.82	41.36%
Control variables:									
Advertising	0.004	0.40	68.97%	0.007	0.77	44.26%	0.005	0.65	51.68%
Air Freight and Logistics	0.012	0.57	56.95%	0.028	0.96	33.87%	0.022	0.71	47.89%
Construction and Engineering	0.008	0.66	51.03%	0.015	0.92	35.92%	0.011	0.89	37.50%
IT Consulting & Software	0.012	0.51	61.09%	0.008	0.88	38.04%	0.01	1.02	30.95%
Manufacturing	0.008	0.34	73.44%	0.015	0.52	60.39%	0.011	0.48	63.20%
Retail	-0.005	-0.47	63.91%	0.003	0.74	46.06%	-0.009	-0.39	69.71%
Science	0.003	0.95	34.38%	0.004	0.62	53.63%	0.002	0.28	77.99%

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 17 displays that in the ± 1 event window domestic transactions generate abnormal return of 3.1%, compared to 1.5% (0.031 + (-0.016)) from cross-border M&As. In the event window ± 5 trading days, acquirer shareholders experience abnormal return of 2.4%, whereas cross-border transactions result in abnormal return of 1.1% (0.024 + (-0.013)). Further, in the ± 10 event window acquirer shareholders receive abnormal return of 2.6% from domestic M&As, and 0.9% (0.026 + (-0.017)) from cross-border M&As. The three event windows show slightly higher abnormal return from domestic M&As, which is in alignment with a partial majority of previous research studies as they seem to agree that the cross-border effect slightly decreases abnormal return. However, none of the dependent variables nor control variables in table 17 are statistically significant.

9.4.1.2 Sub conclusion

Overall, the results from the multiple regression analysis show slightly higher acquirer abnormal return from domestic- rather than cross-border M&As in the Nordic market. However, the results are not statistically significant, and therefore this paper rejects the seventh hypothesis, which means that there is no empirical evidence that the cross-border effect affects shareholder abnormal return. This is in alignment with previous research studies, such as Harris, Franks & Mayer (1987), King (1986), Shleifer & Vishny (2003), among others.

9.4.2 Hypothesis 8

The eight hypothesis investigates whether domestic M&As lead to higher abnormal return than cross-border transactions for target shareholders. The theoretical advantages of cross-border transactions; market access, exchange rate effect, and international portfolio diversification tend to favour target shareholders. Even though previous empirical evidence seems to be ambiguous as to whether the cross-border effect creates or destroys value, a partial majority of researchers tend to agree that the cross-border effect slightly decreases shareholder wealth. Therefore, the eighth hypothesis is:

Hypothesis 8: Domestic transactions yield higher abnormal return for target shareholders

9.4.2.1 Multiple regression analysis

Table 18: Multiple regression analysis (Target)

CAAR in the three event windows are used as independent variables. The intercept domestic M&As) is set as benchmark and equals 1 if is focused transactions, whereas diversified transactions have the value zero. The control variables consist of industry classifications, and (service) is set as benchmark. The t-values are calculated through heteroskedasticity robust standard errors.

	CAAR [-1;1]			CAAR [-5;5]			CAAR [-10;10]		
Variables	Coefficient	t-value	p-value	Coefficient	t-value	p-value	Coefficient	t-value	p-value
Intercept (domestic M&As)	0.291	1.44	15.21%	0.196	0.94	34.88%	0.221	0.79	43.09%
Cross-border M&As	0.032	1.51	13.33%	0.013	1.02	30.95%	0.018	0.91	36.44%
Control variables:									
Advertising	0.082	1.05	29.55%	0.119	1.14	25.62%	0.096	0.93	35.40%
Air Freight and Logistics	0.161	1.48	14.11%	0.217	1.61	10.97%	0.182	1.57	11.87%
Construction and Engineering	0.136	1.32	18.90%	0.184	1.47	14.38%	0.15	1.18	24.00%
IT Consulting & Software	0.166	1.19	23.61%	0.217	1.32	18.90%	0.181	0.97	33.37%
Manufacturing	0.252	1.69*	9.33%	0.288	1.52	13.08%	0.235	1.34	18.24%
Retail	0.134	0.93	35.40%	0.177	1.02	30.95%	0.153	1.11	26.89%
Science	0.083	1.04	30.01%	0.102	0.83	40.80%	0.099	0.88	38.04%

Significance level of 10%, 5% and 1% are illustrated through *, ** and ***.

Source: own calculations based on the data sample from Capital IQ

Table 18 shows that domestic transactions in the ± 1 event window generate abnormal return of 29.1% to target shareholders, whereas cross-border transactions result in abnormal return of 32.3% (0.291 + 0.032). For the event window ± 5 trading days, target shareholders experience abnormal return of 19.6% from domestic M&As, compared to 20.9% (0.196 + 0.013) from cross-border M&As. Further, in the ± 10 event window target shareholders receive abnormal return of 22.1% from domestic transactions, and slightly higher 23.9% (0.221 + 0.018) abnormal return from cross-border transactions. Interestingly, all three event windows show higher abnormal return to target shareholders in cross-border transactions. The findings contradict this paper's hypothesis and a partial majority of previous

research studies who tend to agree that the cross-border effect decreases shareholder wealth. However, none of the dependent variables nor control variables in table 18 are statistically significant.

Even so, table 18 shows that the cross-border effect is more "significant" for this paper's sample of target firms compared to acquirer firms, due to the lower p-values. This is in alignment with the statement that the theories of market access, exchange rate effect, and international portfolio diversification tend to favour target shareholders. Pringle (1991) argues that the main motive for cross-border transactions is market access, which is motivated by needs, such as expanding into new markets, operating locally, and economies of scale. Foreign companies who value market access are more likely to pay higher premium bids, which result in higher abnormal return for target shareholders, all else equal. Acquirer shareholders may benefit too, if the higher premium bid does not exceed the expected synergies from the cross-border transaction. (Pringle, 1991) In addition, Froot and Stein (1991) argue that the cross-border effect has a larger impact on target shareholders due to the exchange rate effect. They find evidence that foreigners holding a bigger proportion of their wealth in non-dollar currency, experience a relative higher wealth position when the dollar depreciates. This lowers their relative cost of capital and enables them to bid more aggressively for assets. Therefore, one would expect higher bid premiums in cross-border transactions, which leads to higher abnormal return for target shareholders, possibly at the expense of acquirer shareholders. (Froot & Stein, 1991) In addition, Kang (1993), Servaes and Zenner (1990), Harris and Ravenscraft (1991), and Swenson (1993) all find that target shareholders receive higher abnormal return in cross-border acquisitions when the currency of the acquirer's country is relative stronger compared to the target's country. Furthermore, empirical studies have documented that international portfolio diversification result in lower volatility of return and simultaneously higher average return compared to well-diversified domestic portfolios. Investors can benefit from international diversification through either investing in i) different stock markets ii) multinational firms. (Jacquillat & Solnik, 1978) Markides and Ittner (1994) argue that cross-border acquisitions are beneficial to investors under certain market inefficiencies. Multinational corporation allows investors to diversify their portfolios indirectly. If international portfolio diversification is valuable for foreign bidders, one would expect higher abnormal return for target shareholders in cross-border acquisitions. (Markides & Ittner, 1994)

However, this paper does not find significant empirical evidence of the cross-border effect, which is in alignment with the ambiguous results of previous research studies. Not all research studies support

the theories of market access, exchange rate effect, and international portfolio diversification. Danbolt (2004), among others, finds no evidence of the market access theory. Further, contradictory to the exchange rate effect theory, Danbolt (2004) finds that target shareholders receive insignificant higher abnormal return, when target country has a relatively weaker currency compared to the acquirer country. Further, the researcher finds only limited empirical evidence of the international portfolio diversification hypothesis. Danbolt (2004) Cakici, Hessel and Tandon (1996), and Dewenter (1995) also find empirical evidence against the exchange rate effect. In addition, Vasconcellos and Kish (1998) argue that while a devalued dollar enables the foreign acquirer to buy American companies at a discount, the following dollar cash flow post-merger is correspondingly less valuable, when exchanged back into the foreign currency at the current exchange rate. Thus, fluctuations in exchange rates should not affect acquirers bid. (Vasconcellos & Kish, 1998) Further, Jacquillat and Solnik (1978), among others, find empirical evidence that investing in multinational firms is not a valid substitute to international portfolio diversification. Hence, simply diversifying through cross-border acquisitions does not result in an efficient portfolio. (Jacquillat & Solnik, 1978) Lastly, obstacles, such as political, economic, cultural, and legal transactions barriers limit the probability of a successful merger, and thus reduces the expected value of cross-border M&As (Campa & Hernando, 2004). However, as previously discussed, this paper assesses that it is of a smaller concern in the analysis as the Nordic countries show similar characteristics concerning risk profiles regarding legal- and corporate control systems (La Porta et al., 1998). In addition, the Nordic countries are all part of the NASDAQ OMX Group, thus covered by the same stock exchange rules.

9.4.2.2 Sub conclusion

In summary, the results from the analysis show slightly higher target abnormal return from cross-border transactions compared to domestic M&As. The findings contradict a partial majority of previous research studies, as they seem to agree that the cross-border effect slightly decreases abnormal return. However, none of the dependent variables nor control variables are statistically significant, and thus this paper rejects the eight hypothesis. Therefore, there is no empirical evidence that the cross-border effect affects target shareholder abnormal return as a result of M&A announcements in the Nordic market. This conclusion is in alignment with previous research studies, such as Harris, Franks & Mayer (1987), King (1986), Shleifer & Vishny (2003), among others.

10. Conclusion

M&A is a recognized method to create value. Moreover, the ultimate purpose of firms is to maximize shareholder value. Therefore, this paper measures value creation through movement in share prices, as these reflect changes in shareholder wealth through capital income. Interestingly, several theories disagree on whether share prices show the true value of the firm. Neoclassical theory assumes strong market efficiency and rational consumer behaviour, and therefore argues that share prices show the true value of firms. However, critics argue that the market is not entirely efficient, based on empirical evidence. In addition, they argue that consumers do not behave rationally when making purchase decisions due to emotional responses. This paper assesses that neoclassical theory has considerable explanatory power regarding short-term value creation from M&A announcements, however critical concerns can still be raised. Neoclassical economists concentrate on shocks at industry levels, but this does not explain why specific transaction characteristics, such as payment method, diversified vs. focused M&As, and cross-border vs. domestic M&As create shareholder wealth, even when so-called shocks are not present. The market experiences anomalies due to specific transaction characteristics, which cannot be explained through the shock theory. Therefore, it is argued that neoclassical theory fails to explain specific transaction characteristics' impact on short-term value creation from M&A announcements in the Nordic market.

Contradictory to the neoclassical theory, behavioural theory argues that the market is inefficient and that over- and undervalued share prices are caused by irrational behaviour. It is assessed that behavioural theory has substantial explanatory power regarding short-term anomalies that neoclassical theory fails to explain in the Nordic market. This is based on previous research studies and the findings in this paper, both showing systematic deviations from the EMH. These deviations can be explained through several documented behavioural theory aspects in the M&A market, such as agency theory, managerial hubris, asymmetric information, signalling theory, and leverage effect. In summary, the evidence indicates that the market is not entirely efficient, as assumed by neoclassical economists and Fama (1970).

Moreover, this paper argues that the three market forms of Fama (1970) are not as black and white as described. It is assessed that the market lies in a grey-zone between semi-strong and strong market efficiency. This is based on empirical evidence of specific elements against a perfectly efficient market, and at the same time evidence against the simple assumption of semi-strong efficiency. Research

studies have documented specific elements, such as insider trading, momentum strategies, and investors who consistently beat the market, which all contradict the EMH. This is also supported by the fact, that this paper finds empirical evidence of abnormal return to target shareholders in the days after the M&A announcement, which indicates that the market does not efficiently absorb all information immediately. Further, the abnormal return to target shareholders in the days prior to the M&A announcement indicates that the share prices reflect information that is not yet publicly available, which contradicts the semi-strong market efficiency. Therefore, this paper assesses that the market lies in a grey-zone between semi-strong and strong market efficiency, as empirical evidence contradicts both the semi-strong efficiency and the strong market efficiency by Fama (1970) and neoclassical theory.

Finally, this paper finds empirical evidence that specific transaction characteristics create shareholder wealth in the Nordic market, in contrast to the argument of neoclassical theory. Despite, neoclassical theory arguing that the payment method should not affect share prices, this paper finds that cash offers yield substantial higher abnormal return compared to share offers. Furthermore, this paper finds that focused M&As result in slightly higher abnormal return for both target- and acquirer shareholders, especially closer to the M&A announcement date. Lastly, this paper fails to find empirical evidence of abnormal return differences between domestic- and cross-border M&As.

In conclusion, this paper finds that M&A announcements in the Nordic market from 2000 to 2019 have resulted in average short-term abnormal return of 25.3% to target shareholders, based on 144 M&A transactions. More specifically, target shareholders receive abnormal return of 19.88% on the M&A announcement date, compared to 1.63% on the day prior to, and 1.21% on the day after the public announcement. For acquirer shareholders the empirical evidence of abnormal return is limited. The substantial difference in the findings of respectively target- and acquirer shareholders can be explained through behavioural theory aspects, such as agency problems, managerial hubris, and winner's curse in M&A announcements. Further, the value creation is substantial higher for cash offers and focused M&A transactions.

11. Further perspective

Finally, after concluding on the findings, this section discusses how short-term value creation from M&A announcements in the Nordic could have been approached from other perspectives. This can benefit substantially to the findings of this paper, however new practical- and theoretical challenges may arise as well.

First and foremost, a natural extension of this paper is to distinguish between different types of M&As. This could contribute further to the findings of shareholder value creation in this thesis. For example, Smith and Kim (1994) find that hostile takeovers yield twice as high abnormal return to target shareholders compared to acquirer shareholders. However, challenges may arise when collecting data regarding different M&A types. M&As are often a mixture of the different types, and thus databases, including Capital IQ, often mention several different types for a single M&A transaction. Furthermore, the databases do not state which M&A type that is dominant for the specific transactions, thus it is hard for researchers to determine whether it mainly is a merger, acquisition, hostile takeover etc. This concern is in alignment with the fact that previous research studies frequently use merger, acquisition, and takeover synonymously, even though Singh (1971) finds a clear difference in the economic implications of mergers and takeovers.

Further, the findings of this paper may benefit from an in-depth analysis of a specific behavioural theory aspect, i.e. asymmetric information. This analysis makes it possible to focus on to what degree asymmetric information affects short-term value creation from M&A announcements in the Nordic market. Several challenges may arise when measuring the effect of asymmetric information, as it is not physical observable. Behaviourism even argues that such an analysis is impossible, as only observable behaviour can be observed, described, and measured. However, Luypaert and Caneghem (2017), among others, find empirical evidence supporting the effect of asymmetric information in M&As. This paper suggests that examining proxies, such as media coverage and firm size may allow the researcher to capture asymmetric information. However, this in-depth analysis of asymmetric information requires a broader data collection.

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13. Appendix

Appendix 1

M&A Announced Date	Target	Acquirer	Payment method	Geographic Location (Target)	Geographic Location (Acquirer)	Cross-Border vs. Domestic	Focused vs. Diversified
02-09-2000	Fastighets AB Balder (publ) (OM:BALD B)	Fabege AB	Cash	SE	SE	Domestic	Focused
02-21-2000	PMJ AUTOMEC OYJ	JOT AUTOMATION GROUP OYJ	Shares	FI	FI	Domestic	Focused
13-04-2000	SELMER AS	SKANSKA AB	Cash	NO	SE	Cross-Border	Focused
15-05-2000	ENTRA DATA AB	TIETOENATOR ABP	Shares	SE	FI	Cross-Border	Focused
31-05-2000	METSÄ TISSUE OYJ	SVENSKA CELLULOSA AB	Cash	FI	SE	Cross-Border	Focused
06-21-2000	Svedala Industri AB (Sweden)	Metso Corporation (HLSE:METSO)	Cash	SE	FI	Cross-Border	Focused
21-06-2000	SVEDALA INDUSTRI AB	METSO OYJ	Shares	SE	FI	Cross-Border	Focused
08-31-2000	H. Hoffmann & Sonner A/S	Veidekke ASA (OB:VEI)	Cash	DK	NO	Cross-Border	Focused
31-08-2000	HOFFMANN A/S	VEIDEKKE ASA	Cash	DK	NO	Cross-Border	Focused
10-06-2000	Norzink AS	Outokumpu Oyj (HLSE:OUT1V)	Cash	NO	FI	Cross-Border	Focused
11-01-2000	Damgaard Company A/S	Navision a/s	Shares	DK	DK	Domestic	Focused
02-12-2001	Independent Media Group Sweden AB	Vision Park Entertainment AB	Shares	SE	SE	Domestic	Focused
02-22-2001	Swedbank AB (publ) (OM:SWED A)	Skandinaviska Enskilda Banken AB (publ.) (OM:SEB A)	Shares	SE	SE	Cross-Border	Focused
11-04-2001	MIDTBANK A/S	SVENSKA HANDELSBANKEN AB	Cash	DK	SE	Cross-Border	Focused
05-14-2001	ABG Securities ASA	ABG Sundal Collier Holding ASA (OB:ASC)	Shares	NO	NO	Cross-Border	Focused
05-18-2001	STOREBRAND ASA	DEN NORSKE BANK ASA	Shares	NO	NO	Domestic	Diversified
10-04-2001	Cappit ASA	StrongPoint ASA (OB:STRONG)	Shares	NO	NO	Domestic	Focused
10-19-2001	Time Space Radio	Bredband2 i Skandinavien AB (publ) (OM:BRE2)	Shares	SE	SE	Domestic	Focused
02-26-2002	SCANFIL OYJ	WECAN ELECTRONICS OYJ	Shares	FI	FI	Domestic	Focused
26-03-2002	SONERA OYJ	TELIA AB	Shares	FI	SE	Cross-Border	Focused
04-11-2002	ELEKTROBIT OYJ	JOT AUTOMATION GROUP OYJ	Shares	FI	FI	Domestic	Focused
09-18-2002	iGroup ASA	StrongPoint ASA (OB:STRONG)	Shares	NO	NO	Domestic	Focused
09-18-2002	Cappit ASA	StrongPoint ASA (OB:STRONG)	Shares	NO	NO	Domestic	Focused
09-30-2002	Gandalf AB	JLT Mobile Computers AB (publ) (OM:JLT)	Shares	SE	SE	Domestic	Focused
10-28-2002	Vestjysk Bank A/S, Prior to its merger with Nordvestbank As	Vestjysk Bank A/S (CPSE:VJBA)	Shares	DK	DK	Domestic	Focused
13-02-2003	DIFFCHAMB AB	RAISIO YHTYMÄ OYJ	Cash	SE	FI	Cross-Border	Focused
04-28-2003	Taurus Petroleum AB	RaySearch Laboratories AB (publ) (OM:RAY B)	Shares	SE	SE	Domestic	Diversified
05-06-2003	Dampskibsselskabet AF 1912 AS	A.P. Møller - Mærsk A/S (CPSE:MAERSK B)	Shares	DK	DK	Domestic	Focused
06-13-2003	Fastighets AB Celtica	Atrium Ljungberg AB (publ) (OM:ATRLJ B)	Cash	SE	SE	Domestic	Focused
11-04-2003	Pandox AB (publ) (OM:PNDX B)	Eiendomsspar AS (OTCNO:EISP); Sundt AS	Cash	SE	NO	Cross-Border	Diversified

10-12-2003	ALTIMA AB	RAMIRENT OYJ	Shares	SE	FI	Cross-Border	Focused
16-12-2003	UTFORS AB	TELENOR ASA	Cash	SE	NO	Cross-Border	Focused
03-05-2004	Empire AB (publ)	Empire AB (publ)	Shares	SE	SE	Domestic	Focused
03-24-2004	Enlight AS	Enlight International AB	Shares	NO	SE	Cross-Border	Diversified
05-19-2004	GRONLANDSBANKEN A/S	VESTJYSK BANK A/S	Shares	DK	DK	Domestic	Focused
10-07-2004	Gorthon Lines AB	Viking Supply Ships AB (publ) (OM:VSSAB B)	Shares	SE	SE	Domestic	Focused
08-11-2004	CHIPS OYJ ABP	ORKLA ASA	Cash	FI	NO	Cross-Border	Diversified
12-22-2004	DistIT AB (publ) (OM:DIST)	IAR Systems Group AB (publ) (OM:IAR B)	Shares	SE	SE	Domestic	Focused
12-22-2004	TURNIT AB	NOCOM AB	Shares	SE	SE	Domestic	Diversified
01-10-2005	ELKEM ASA	ORKLA ASA	Cash	NO	NO	Domestic	Diversified
02-08-2005	ELKEM ASA	ORKLA ASA	Cash	NO	NO	Domestic	Diversified
10-02-2005	SAPA AB	ORKLA ASA	Cash	SE	NO	Cross-Border	Diversified
06-15-2005	PRECIO SYSTEMUTVECKLING AB	FORUM SQL AB	Shares	SE	SE	Domestic	Focused
20-06-2005	AXXESSIT ASA	TELEFONAKTIEBOLAGET LM ERICSSON	Cash	NO	SE	Cross-Border	Diversified
06-27-2005	Online Brands Nordic AB (publ) (OM:OBAB)	Vadsbo SwitchTech Group AB (publ) (NGM:VADS)	Cash	SE	SE	Domestic	Diversified
06-27-2005	FASTIGHETS BALDER AB	ENLIGHT AB	Shares	SE	SE	Domestic	Focused
06-07-2005	VOLLVIK GRUPPEN A/S	TELIASONERA AB	Cash	NO	SE	Cross-Border	Focused
10-17-2005	INAC AB	Betting Promotion Sweden AB (publ)	Shares	SE	SE	Domestic	Diversified
07-02-2006	GLOCALNET AB	TELENOR ASA	Cash	SE	NO	Cross-Border	Focused
05-04-2006	GetUpdated Sweden AB	Binero Group AB (publ) (OM:BINERO)	Shares	SE	SE	Domestic	Focused
16-05-2006	NEXTGENTEL HOLDING ASA	TELIASONERA AB	Cash	NO	SE	Cross-Border	Diversified
06-08-2006	Consafe Offshore AB	Prosafe SE (OB:PRS)	Shares	SE	NO	Cross-Border	Focused
08-23-2006	Wilson ASA (OB:WILS)	Borgestad ASA (OB:BOR); Bergshav Tankers AS	Cash	NO	NO	Cross-Border	Focused
08-31-2006	EB NORDIC AB	REDBET HOLDING AB	Shares	SE	SE	Domestic	Focused
11-09-2006	P4 RADIO HELE NORGE ASA	MODERN TIMES GROUP MTG AB	Cash	NO	SE	Cross-Border	Diversified
11-06-2006	Onetwocom AB	Stockwik Förvaltning AB (publ) (OM:STWK)	Shares	SE	SE	Domestic	Focused
02-01-2007	Taurus Petroleum Development AB	Taurus Energy AB (NGM:TAUR B)	Shares	SE	SE	Domestic	Focused
02-14-2007	Luvit AB	Avensia AB (publ) (OM:AVEN)	Shares	SE	SE	Domestic	Focused
26-02-2007	TANDBERG TELEVISION ASA	TELEFONAKTIEBOLAGET LM ERICSSON	Cash	NO	SE	Cross-Border	Diversified
11-06-2007	COMPONENT SOFTWARE GROUP ASA	AFFECTO OYJ	Shares	NO	FI	Cross-Border	Diversified
07-06-2007	WISE Group AB	Wise Group AB (publ) (OM:WISE)	Shares	SE	SE	Domestic	Focused
20-08-2007	SALUSANSVAR AB	DNB NOR ASA	Cash	SE	NO	Cross-Border	Focused
09-07-2007	Kasola Oyj	Nurminen Logistics Oyj (HLSE:NLG1V)	Shares	FI	FI	Domestic	Focused
09-28-2007	Biolight International AB	Corem Property Group AB (publ) (OM:CORE A)	Shares	SE	SE	Domestic	Focused
20-02-2008	TROLLTECH ASA	NOKIA OYJ	Cash	NO	FI	Cross-Border	Diversified
15-04-2008	CASHGUARD AB	PSI GROUP ASA	Shares	SE	NO	Cross-Border	Diversified
05-23-2008	Thalamus Networks AB	Hifab Group AB (publ) (OM:HIFA B)	Shares	SE	SE	Domestic	Focused
08-07-2008	AcadeMedia AB	AcadeMedia AB (publ) (OM:ACAD)	Shares	SE	SE	Domestic	Focused
15-09-2008	LOKALBANKEN I NORDSJÆLLAND A/S	SVENSKA HANDELSBANKEN AB	Cash	DK	SE	Cross-Border	Focused
09-29-2008	Aktieselskabet Ringkjøbing Bank	Vestjysk Bank A/S (CPSE:VJBA)	Shares	DK	DK	Domestic	Focused
09-29-2008	Holdingselskabet af 1958 AS	Vestjysk Bank A/S (CPSE:VJBA)	Shares	DK	DK	Domestic	Diversified

10-17-2008	LEROY SEAFOOD GROUP ASA	AUSTEVOLL SEAFOOD ASA	Cash	NO	NO	Domestic	Diversified
11-03-2008	Central Asia Gold AB	Auriant Mining AB (publ) (OM:AUR)	Shares	SE	SE	Domestic	Focused
16-02-2009	KAUPTHING SVERIGE AB	ALANDSBANKEN ABP	Cash	SE	FI	Cross-Border	Focused
02-27-2009	Temporar Forvaltning i Stockholm AB	Petrosibir AB (publ) (OTCPK:SHPE.F)	Shares	SE	SE	Domestic	Focused
08-06-2009	GUDME RAASCHOU VISION A/S	KLIMAINVEST A/S	Cash	DK	DK	Domestic	Diversified
08-24-2009	Aker Exploration ASA	Aker BP ASA (OB:AKERBP)	Shares	NO	NO	Domestic	Focused
31-08-2009	FIONIA BANK A/S	NORDEA BANK AB	Shares	DK	SE	Cross-Border	Focused
26-04-2010	IMPACT EUROPE GROUP AB	ATEA ASA	Cash	SE	NO	Cross-Border	Diversified
08-12-2010	Findads AB	Speqta AB (publ) (OM:SPEQT)	Shares	SE	SE	Domestic	Focused
11-30-2010	Inmeta ASA	Crayon Group Holding ASA (OB:CRAYON)	Shares	NO	NO	Domestic	Focused
12-03-2010	Westend ICT Plc	Innofactor Plc (HLSE:IFA1V)	Shares	FI	FI	Domestic	Focused
01-31-2011	Eirikuva Digital Image Oyj Abp	Avidly Oyj (HLSE:AVIDLY)	Shares	FI	FI	Domestic	Focused
03-14-2011	Netrevelation AB	Nischer Properties AB (publ) (NGM:NIS)	Shares	SE	SE	Domestic	Diversified
06-14-2011	Svenska Capital Oil AB	Misen Energy AB (publ) (OM:MISE)	Shares	SE	SE	Domestic	Focused
12-16-2011	Cloetta AB	Cloetta AB (publ) (OM:CLA B)	Shares	SE	SE	Domestic	Focused
12-20-2011	DNB ASA	DEN NORSKE BANK ASA	Cash	NO	NO	Domestic	Focused
12-01-2012	ASPIRO AB	SCHIBSTED ASA	Cash	SE	NO	Cross-Border	Diversified
01-25-2012	Aarhus Lokalbank Aktieselskab	Vestjysk Bank A/S (CPSE:VJBA)	Shares	DK	DK	Domestic	Focused
05-10-2012	Mobile Loyalty Plc, Prior to Reverse Merger with Mobile Loyalty Europe AB	ADONnews Sweden AB (publ)	Shares	SE	SE	Domestic	Focused
09-18-2012	Sparbank A/S	Spar Nord Bank A/S (CPSE:SPNO)	Shares	DK	DK	Domestic	Focused
11-30-2012	Morphic Technologies AB (publ)	Amasten Fastighets AB (publ) (OM:AMAST)	Shares	SE	SE	Domestic	Focused
12-03-2012	NOTE AB (publ) (OM:NOTE)	Lifco AB (publ) (OM:LIFCO B)	Cash	SE	SE	Domestic	Diversified
12-06-2012	Clean Tech East Holding AB (publ)	Cortus Energy AB (publ) (OM:CE)	Shares	SE	SE	Domestic	Diversified
01-02-2013	Veteranpoolen AB (publ) (NGM:VPAB B)	HomeMaid AB (publ) (NGM:HOME B)	Cash	SE	SE	Domestic	Focused
01-21-2013	Hol Sparebank	Skue Sparebank (OB:SKUE)	Shares	NO	NO	Domestic	Focused
02-14-2013	AllTele Allmänna Svenska Telefonaktiebolaget	A3 Allmänna IT- och telekomaktiebolaget (publ) (OM:ATRE)	Shares	SE	SE	Domestic	Focused
03-04-2013	Finmetron AB (publ)	Massolit Media AB (publ)	Shares	SE	SE	Domestic	Focused
11-07-2013	OY HARTWALL AB	ROYAL UNIBREW A/S	Shares	FI	DK	Cross-Border	Focused
08-20-2013	Catena AB	Catena AB (publ) (OM:CATE)	Shares	SE	SE	Domestic	Focused
11-12-2013	Mediaprovider Scandinavia AB	Modern Ekonomi Sverige Holding AB (publ) (OM:ME)	Shares	SE	SE	Domestic	Diversified
01-03-2014	Hafnia Tankers Ltd, Prior to Reverse Merger with BTS Tanker Partners Limited	Hafnia Tankers Ltd.	Shares	DK	DK	Domestic	Diversified
22-01-2014	RAUTARUUKKI OYJ	SSAB AB	Shares	FI	SE	Cross-Border	Focused
02-21-2014	Swede Resources AB	US Energy Group AB	Shares	SE	SE	Domestic	Focused
09-22-2014	Klepp Sparebank	Jaeren Sparebank (OB:JAEREN)	Shares	NO	NO	Domestic	Focused
11-24-2014	Sandnes Sparebank (OB:SADG)	SpareBank 1 SR-Bank ASA (OB:SRBANK)	Shares	NO	NO	Domestic	Focused
12-19-2014	DRILLCON AB	TRACTION AB	Cash	SE	SE	Domestic	Focused
01-27-2015	Forestlight Entertainment AB (publ)	Vertical Ventures AB (publ) (OM:VEVEN)	Shares	SE	SE	Domestic	Diversified

05-19-2015	REHACT AB (publ)	Aktiebolaget Fastator (publ) (OM:FASTAT)	Shares	SE	SE	Domestic	Focused
06-23-2015	Massolit Media AB (publ)	Storytel AB (publ) (OM:STORY B)	Shares	SE	SE	Domestic	Focused
09-03-2015	Vaahto Group plc Oyj	Plc Uutechnic Group Oyj (HLSE:UUTEC)	Shares	FI	FI	Domestic	Focused
09-21-2015	Camanio Care AB (NGM:CARE)	Brighter AB (publ) (OM:BRIG)	Shares	SE	SE	Domestic	Focused
10-19-2015	Kilimanjaro Gold Holding AB (publ)	Hedera Group AB (publ) (OM:HEGR)	Shares	SE	SE	Domestic	Focused
03-07-2016	Anodaram AB (publ)	SaltX Technology Holding AB (OM:SALT B)	Shares	SE	SE	Domestic	Diversified
06-01-2016	Pilum AB (publ)	Saxlund Group AB (publ) (OM:SAXG)	Shares	SE	SE	Domestic	Focused
07-04-2016	Techstep ASA	Techstep ASA (OB:TECH)	Shares	NO	NO	Domestic	Focused
09-01-2016	Victoria Properties A/S (CPSE:VIPRO)	Boliga Gruppen A/S (CPSE:BOLIGA)	Cash	DK	DK	Domestic	Diversified
11-10-2016	Crown Energy AB (publ)	Crown Energy AB (publ) (NGM:CRWN)	Shares	SE	SE	Domestic	Focused
11-21-2016	Bionor Pharma ASA	Solon Eiendom ASA (OB:SOLON)	Shares	NO	NO	Domestic	Focused
11-21-2016	Ascenditur AB	LightAir AB (publ) (NGM:LAIR)	Shares	SE	SE	Domestic	Diversified
11-23-2016	FUTURE GAMING GROUP INTERNATIONAL AB	PLAYHIPPO AB	Shares	SE	SE	Domestic	Focused
11-25-2016	AgaTech ASA	Hiddn Solutions ASA (OB:HIDDN)	Shares	NO	NO	Domestic	Focused
11-30-2016	Lucent Oil AB	QuiaPEG Pharmaceuticals Holding AB (publ) (NGM:QUIA)	Shares	SE	SE	Domestic	Focused
12-01-2016	Followit Holdings AB	Seafire AB (publ) (OM:SEAF)	Shares	SE	SE	Domestic	Focused
12-06-2016	Effnetplattformen AB (publ)	Samhällsbyggnadsbolaget i Norden AB (publ) (OM:SBB B)	Shares	SE	SE	Domestic	Focused
01-13-2017	Duroc AB (publ)	Duroc AB (publ) (OM:DURC B)	Shares	SE	SE	Domestic	Diversified
01-25-2017	Empire AB (publ)	Kakel Max AB (publ) (OM:KAKEL)	Shares	SE	SE	Domestic	Focused
04-19-2017	NTS ASA	NTS ASA (OB:NTS)	Shares	NO	NO	Domestic	Focused
05-02-2017	DWELLOP AS	HUNTER GROUP ASA	Cash	NO	NO	Domestic	Diversified
06-19-2017	Lemminkäinen Oyj	YIT Oyj (HLSE:YIT)	Shares	FI	FI	Domestic	Focused
08-21-2017	ORAVA ASUNTORAHASTO OYJ	INVESTORS HOUSE OYJ	Shares	FI	FI	Domestic	Focused
12-06-2017	Stillfront Group AB (publ)	Stillfront Group AB (publ) (OM:SF)	Shares	SE	SE	Domestic	Focused
03-09-2018	Medical Prognosis Institute A/S	Oncology Venture A/S (OM:OV)	Shares	DK	DK	Domestic	Focused
08-27-2018	Bergen Group ASA	Endúr ASA (OB:ENDUR)	Shares	NO	NO	Domestic	Focused
01-28-2019	Indentive AB	Artificial Solutions International AB (publ) (OM:ASAI)	Shares	SE	SE	Domestic	Focused
02-08-2019	BRAbank ASA	BRAbank ASA (OB:BRA-ME)	Shares	NO	NO	Domestic	Focused
03-01-2019	DANSKE ANDELSKASSERS BANK A/S	SPAR NORD BANK A/S	Shares	DK	DK	Domestic	Focused
03-05-2019	Monberg & Thorsen A/S	MT Højgaard Holding A/S (CPSE:MTHH)	Shares	DK	DK	Domestic	Focused
03-20-2019	DANSKE ANDELSKASSERS BANK A/S	SPAR NORD BANK A/S	Cash	DK	DK	Domestic	Focused
04-16-2019	Songa Bulk ASA	Axxis Geo Solutions ASA (OB:AGS)	Shares	NO	NO	Domestic	Diversified
04-18-2019	PANION ANIMAL HEALTH AB	COMBIGENE AB	Shares	SE	SE	Domestic	Focused
07-09-2019	NeuroSearch A/S	NTG Nordic Transport Group A/S (CPSE:NEUR)	Shares	DK	DK	Domestic	Focused
11-05-2019	Karessa Pharma Holding AB (publ)	Klaria Pharma Holding AB (publ.) (OM:KLAR)	Shares	SE	SE	Domestic	Focused
11-11-2019	SWEDOL AB	MOMENTUM GROUP AB	Cash	SE	SE	Domestic	Focused