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The Impact of M&A Characteristics on the Acquiring Companies' Value

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by
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ABSTRACT

We conduct an event study of acquiring companies' cumulative abnormal returns as a reaction to merger and acquisition (M&A) announcement news. The study is conducted using three – and five-day event windows for a sample of M&A deals in the Norwegian stock market. We study the effect of the characteristics of the announcement on the wealth of the acquiring company's shareholders, by examining the variation of cumulative abnormal return related to different characteristics of the deal, target, and acquiring company. Our findings suggest that, overall, the acquiring firm's shareholders earn a positive cumulative abnormal return over the defined event windows. However, we show that several M&A characteristics (e.g., day of week, method of payment) hypothesized to impact pricing of deals, are not significant predictors of acquirer returns. We therefore question the traditional wisdom of whether these metrics should matter to managers when announcing M&As.

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Contents

Abreviations

AAR Average Abnormal Return.

ANOVA Analysis of Variance.

AR Abnormal Return.

BRICS Brazil, Russia, India, China and South Africa.

CAAR Cumulative Average Abnormal Return.

CAPM Capital Asset Pricing Model.

CAR Cumulative Abnormal Return.

EMH Efficient Market Hypothesis.

M&A Merger and Acquisition.

OLS Ordinary Least Square.

OSEBX Oslo Børs Benchmark Index.

SIC Standard Industrial Classification.

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1 Introduction and motivation

Firms grow through either internal or external expansion, or a combination of the two. An internal expansion may include developing new products, replacing market strategies, adopting new technology, and business reengineering. An external expansion primarily takes place through an Merger and Acquisition (M&A), where the firm acquires a company with new products, market strategies or technology (Elad and Bongbee, 2016).[1]

M&As are increasingly becoming a commonly used growth strategy by corporations across the world to reach their goals and objectives related to strategic growth (Gaughan, 2005). An M&A gives the acquiring company quick access to a wider range of resources, that otherwise would have been time consuming to gain access to if developed internally. However, financing of a deal and the cost associated with bureaucracy when acquiring a firm makes an M&A costly (Besanko et al., 2003), and companies therefore need to evaluate if the price plus the additional cost are worth the potential gain from acquiring a company. This trade-off between the value created in an M&A and the costs occurring in the process is important in order to understand how the market reacts to an announcement of an M&A. PwC concludes, in a report about Global M&A Industry Trends, that the M&A activity is accelerating as per today, and that companies must pay higher attention to the fundamentals on how to create value (PricewaterhouseCoopers, 2021). This indicates that M&A activity still is highly relevant today. Thus, our primary motivation to conduct further research on the process of M&As, is to examine what drives their cost

[1]Despite merger and acquisitions being two different takeover strategies, where a merger involves two firms merging into a new one and an acquisition involves one firm buying another and absorbing it into their own firm, prior literature mainly studies the effects and characteristics of M&As as a combined term, which consequently is what is done in this thesis (Mateev and Andonov, 2016; Xu, 2017; Adnan and Hossain, 2016; Sehgal et al., 2012; Mateev, 2017; Alexandridis et al., 2012).

differences and how M&As can still create value for companies in today's modern business environment.

The process prior to the completion of an M&A is often extensive and complicated and involves several decisions for managers. One common concern is to satisfy shareholders of the acquiring and target company by creating value. Investors will trade on the available information and what they predict will happen in the future. Thus, several factors potentially affect the stock price when announcing an M&A. In this study, we will focus on the returns to the shareholders of the acquiring company, and the resulting value created or destroyed through increased or decreased share prices. Specifically, in terms of value creation for shareholders, the main purpose of this study is to gain an understanding of how different aspects of an M&A annoucement can affect the acquiring company's stock price, and whether it creates any Abnormal Return (AR) for the stockholders. The specifics of the announcement have received relatively little attention in the M&A literature, despite being the primary way most stock market participants first learn about the deal. The research question studied in this thesis is: "How do the different aspects of an M&A announcement affect the acquiring company's stock price, and do they create any AR for the stockholders?"

The issues discussed in this study will be of interest because there has been increased attention devoted to M&A deals during the past decades. We aim to give an understanding of how different characteristics of the M&A announcement itself potentially affects the acquiring company's stock prices, as well as other variables capturing investors' expectations of how the M&A will affect their positions, and thus their reactions to the announcement. Understanding these effects is of particular interest for managers because it will inform future decision-making regarding M&A announcements given a better understanding of the market's perception. Furthermore, our research

will contribute to prior literature with an insight of whether managers could potentially gain from strategically timing M&A announcements and how different deal characteristics impact the acquiring company. Moreover, previous studies have mainly covered bigger markets such as the United States, the United Kingdom and the Euro-area. Instead, focusing on only one small market, the Norwegian market, enables us to avoid country-specific factors that would make our potential effects harder to isolate. Further, the Norwegian market is similar to the Scandinavian market in terms of legal system, wealth and high degree of trust in the financial system, and thus the study could potentially be useful for Scandinavian countries and other countries with similar characteristics.

We address the research question through a classic event study methodology investigating stockholders of the acquiring firm's Cumulative Average Abnormal Return (CAAR) around the announcement date, where we use the market model to obtain the expected return. We study the cross-sectional variation of CAAR for the defined event windows of [-1,1] and [-2,2] by examining CAAR on indicator variables for various M&A and announcement characteristics: *Cash, Stock, Combination, Monday, Friday, Public, Domestic, Related, Unrelated, Small* and *Large*, as well as standard control variables for acquirer characteristics: *LnMarketCap, Tobin's Q* and *Debt-to-equity*. The primary method we use is univariate mean difference tests of the full samples, and additionally mean difference tests of subsamples to study if there is any AR for the shareholders of the acquiring company and which deal characteristics that potentially drive these results. Further, we conduct a multivariate regression, in order to investigate the explanatory power of the different variables in combination.

Using this analysis, we find that, overall, the stockholders of the acquiring companies do earn a positive CAAR of 2.99% and 2.79% over the event

windows [-1,1] and [-2,2], respectively. However, the data is noisy, and overall, our various selected characteristics are not good predictors of CAAR around announcement dates. Further, the results indicate that managers should not focus on the specific characteristics investigated when announcing M&As, at least as far as they are concerned about short-term shareholder responses. We conclude this because we do not find a statistically significant effect of our various announcement characteristics on the AR of shareholders, and thus the variables are not good predictors of CAAR. Instead, we recommend managers to focus on identifying the core of the underlying target businesses and how this adds growth, rather than specifics of the announcement timing and/or aspects of financial engineering in the announcements.

Note, that in this thesis we do not investigate the long run stock returns. Although important, we believe there are several other factors that will affect the stock price in the long-run, which makes identification of drivers of long-run returns difficult to study, especially how they relate to the direct announcement effect on the stock price.

2 Theoretical Framework

In this section, we outline and explain the underlying theories central to understanding our research question and which we will use to derive and interpret our hypotheses. We focus on three general frameworks, value creation and destruction, efficient markets, and asymmetric information. Investors trade on the information available to them and their predictions of how they can create the most value in the future. Thus, the theories of value creation and value destruction are relevant when studying our research question. Further, the theories of efficient market and information asymmetry are included in the theoretical framework. The Efficient Market

Hypothesis (EMH) is important when analyzing and understanding how the market reacts to news in different forms of efficient markets. The theory of information asymmetry is useful in explaining different aspects of the characteristics investigated, in particular the problem of potential information leakage and insider trading.

2.1 Value Creation and Destruction

During an M&A process, net value can be either created or destroyed. Value creation in M&A occurs when a successful deal increases the returns of the combined firm improving the allocation of resources between the participating companies and generate synergy effects (Salvi et al., 2018). Synergy effects include financial, managerial and operational synergies. Additionally, increased returns for shareholders can be a consequence of efficiency gains, diversification, and growth (Gupta et al., 2021). An additional source of value creation, at least for the shareholders of the companies, is due to changes in their market power. M&As can reduce future competition and help the acquiring company gain competitive scale (Bruner, 2004). In return, the reduction in competition can increase the company's market power and control, allowing the firm to potentially capture additional economic rents. Note, however, this may not be welfare reducing if sufficient size is necessary to overcome market frictions or internalize externalities. Further, Bruner (2004) suggests in his study that M&As to build market power does not always pay off.

Despite the potential for value creation, the agency conflict between shareholders and management can also lead to value destruction through entering bad M&A deals (Harford et al., 2012). Further, Harford et al. (2012) claim that the main reason behind all value destruction in terms of M&As are overpayment, and that literature shows that well-established managers

enter value decreasing M&A deals. A theory that explains overpayment is Roll's (1986) Hubris hypothesis, which states that the individuals in the management of the acquiring firm overestimates their management skills, which could lead to an overbidding, a phenomenon commonly referred to as winner's curse.

The theories of value creation and value destruction mostly consider long term results, but as the investors will trade on their opinion of whether the M&A deal will create or destroy value, they are relevant in understanding the short-term reactions to the announcements as well. Additionally, in terms of synergy effects, it is interesting to look at whether or not merger relatedness of the target company is affecting the acquiring company's value. Thus, we use the theories, in combination with prior literature, when constructing hypotheses and analyzing the results in terms of reactions to M&A announcements.

2.2 Efficient Market Hypothesis

The EMH is commonly used as a starting point for determining how the market will react to news about firm-related events, and thus, announcements of M&As. An efficient market is a market where the available information is fully reflected in the asset prices (Fama, 1970). It was Harry Roberts who first created the term of EMH in 1967 and further made a distinction between three different forms of efficient markets; weak form, semi-strong form, and strong form, which is the classic taxonomy in Fama's theory (Sewell, 2011).

In the weak form of the EMH, the stock prices reflect all information from history of past prices. A semi-strong form of efficient markets means that the stock price reflects all publicly available information, and thus, the market immediately adjusts to public information. A strong form of efficient markets

includes both public and insider information, indicating that the market reflects all information concerning the firm, including the information not publicly available (Ikram and Nugroho, 2014). Accordingly, the EMH claims that it is not possible for investors to earn AR (Altin, 2015). However, critics claims that the asset prices to some extents are predictable and thus enables investors to earn excess returns (Lee, 2006).

The EMH is relevant to our study as it explains how the market reacts to news in different forms of efficient markets. In this thesis we will assume that the market is of the semi-strong form, and thus immediately adjust to the announcement of an M&A. The EMH will further be used in the analyses of potential information leakages prior to the announcement date. Reactions in the market prior to the announcement can be indication of information leakage and insider trading, which supports upon a strong efficient form, where the market reacts to not publicly available information.

2.3 Information Asymmetry Theory

Theories associated with information asymmetry and M&As generally relate to signaling theory, and concerns the situation where agents in the market have private information and an incentive to signal this to the receivers. The existence of information frictions can result in inefficient outcomes in the market (Gambetta, 2011). In the event of an M&A announcement, there is indisputably occurrence of information asymmetry, and it is therefore important for managers to address this concern to avoid misinterpretation of deal qualities (Filipovic, 2018).

Further, information asymmetry can create uncertainty about quality, which is explained in the class example of adverse selection in Akerlof (1970). In context of M&A deals, the uncertainty about quality of the deals relates to

the value creation of the deal, which can be difficult to fully understand as M&A deals are usually relatively complex. Two characteristic features of many M&A deals are that the acquiring company potentially have problems evaluating the value of the target company's resources and that the acquirer and target company need to agree on a price. The existence of information asymmetry between acquirer and target can make deals fall through, but for those deals that are completed, acquirers tend to overpay (Reuer, 2005). The uncertainty and information asymmetry in M&A deals can, as in Akerlof's example, often lead to an adverse selection problem.

Due to the internal information and the human capital a manager of a firm has built up, there will naturally exist asymmetric information between insiders and outside investors (Myers and Majluf, 1984). This asymmetric information problem is important to consider when analyzing and investigating the market's reaction to an M&A announcement. If the investors face information asymmetry and do not feel confident about the quality and potential value created from the deal, they might have a negative reaction because they know from prior studies that the acquiring company tends to overpay. Further, the asymmetric information problem is useful when studying the method of payment in an M&A. Fishman (1989) and Andrade et al. (2001) find that the method of payment will signal to the market whether the target company is overvalued or undervalued. Thus, the form of payment affects how the market react to announcements, as the investors do not want to pay a too high price.

3 Literature review

In the next section, we review important studies investigating issues related to our research question from the prior literature. Further, we formulate our

hypotheses on the basis of these findings in addition to expectations from the market's behavior from the theoretical framework.

3.1 The effect of acquisition news on acquirer's stock return

The value creation from an M&A is relatively clear in terms of the gain for target firm shareholders, but for the acquiring firms it is more indeterminate (Mateev, 2017). For target firms, earlier studies generally agree that the wealth effects of acquisition create additional value (Ma et al., 2009; Fuller et al., 2002; Jensen and Ruback, 1983). When it comes to the value creation for acquiring firms, the research is more undecided about how M&A announcements impact stock prices. In an event study conducted on acquisition news on acquiring companies traded on the London Stock Exchange, Elad and Bongbee (2016) find significant AR for the acquirer around acquisition events. In contrast, several studies of the markets in the US and Europe find a negative or zero effect on the Cumulative Abnormal Return (CAR) on the acquiring firms after the announcement (Campa and Hernando, 2004; Fuller et al., 2002; Stahl and Mendenhall, 2005). Ma et al. (2009) find, in an event study of ten emerging Asian stock markets, an expected positive CAR in the stock market. Further, they state that their findings in the emerging market are distinctive from studies of developed markets such as the US, which suggest an either negative or neutral effect on shareholder wealth. Bhagat et al. (2011) support this result in their study of cross-border acquisitions in emerging countries, where they find that the acquirer experiences a positive AR. This may indicate that there is a different reaction of M&A announcements on the stock prices in emerging markets versus developed markets. However, other papers studying developed markets (Cicon et al., 2014; Mateev, 2017; Moeller and Schlingemann, 2005)

find that the market have a positive reaction to M&A activity. Cicon et al. (2014) find a positive market reaction for the acquirer's three-day announcement period return from day -1 to day +1, and even larger CARs for longer event windows. Alexandridis et al. (2017) find, in a study with data from 1990 to 2015, that acquiring firms for the first time create apparent shareholder value through public acquisitions after 2009. Moreover, around the announcement of the deal, the acquirer earns an AR of 1.05% in contrast to an average loss of 1.08% in the time between 1990 and 2009.

Furthermore, Bouwman et al. (2009) studies whether acquisitions that occur during blooming markets differentiate from those occurring during depressed markets. They find that acquisitions during a blooming market have significantly higher announcement returns, but lower long-term abnormal stock performance than the acquisitions from a depressed market. It will therefore be important to have in mind that the stock prices may fluctuate and give different result during different market conditions.

Our study will contribute to prior literature by conducting an event study of a small developed market, Oslo Børs. We will use a time horizon of 15 years with the aim to eliminate specific time-periods that in particular affect the prices in a positive or negative way, and rather seek to find a trend that describes the normal market response. Based on these previous findings, we formulate the following hypothesis:

Hypothesis 1: The market will respond negatively to an announcement of an M&A when the acquirer is listed on Oslo Børs. This announcement will create CAR of slightly less than zero.

3.2 Information leakage

In addition to determining the sign and extent of the market's reaction to M&A announcements, we also aim to investigate the pre-announcement stock price behavior to determine whether there exist indications of information leakage. Potential information leakage of confidential information prior to the announcement date can create both positive and negative daily AR as a reaction to the leaked news (Adnan and Hossain, 2016). Therefore, it is important to control for these leakages and their effect on prices when analyzing the AR. Pinpointing the timing of these returns is key since they can also potentially be a result of superior analysis by investors in the market (Sehgal et al., 2012). However, this is not something we will explore in depth in this thesis as the data to properly evaluate this question is complex to collect and is not directly related to answering our research question.

Keown and Pinkerton (1981) find, in their study of daily holding periods for 194 firms, that merger announcements are rarely entirely secret and that trading on nonpublic information thrives. Further, they find that the leakage of inside information is an extensive problem that can occur up to 12 trading days prior to the first public announcement of a proposed merger. Additionally, Sehgal et al. (2012) finds significant pre-announcement returns in their standard event study of Brazil, Russia, India, China and South Africa (BRICS) from 2005-2009, which may indicate leakages as well. Trading on insider or non-public information can lead to profits for trading around M&As, but also potentially cause a lower probability of deal completion and higher target premiums (Dai et al., 2017). Adnan and Hossain (2016) find in their event study that there is a price run-up prior to the announcement for both the target and acquiring firm, which indicates information leakage. Mateev (2017), on the other hand, concludes that information leakage does not lead to significant positive AR for the acquiring

company one day prior to announcement.

Our intention is to contribute to the prior literature by further analyzing the acquirer's return prior to the announcement, in order to reveal potential information leakages in the Norwegian market around the announcement date. The following hypothesis is formulated:

Hypothesis 2: Information leakage leads to significant daily abnormal return for the acquirer prior to the announcement.

3.3 The method of payment

Outside of information leakages, information can also have other effects on the characteristics of M&A deals. The payment of an M&A deal can be settled in several ways, and the prior literature mainly focuses on the use of cash, stocks, or combined payment methods, where all three are fundamentally different from each other and therefore should be treated as separate payment categories (Boone et al., 2014). Our objective is to investigate whether the method of payment affects the announcement reaction of the acquiring firm's stock prices, or if there is a variation between the returns from the different type of payments in connection to other deal characteristics introduced in this thesis.

In perfect markets with symmetrical information, the choice of payment of an M&A deal is economically irrelevant (Eckbo et al., 1990; Fishman, 1989). In a study by Moeller et al. (2007) idiosyncratic risk is introduced as a proxy for information asymmetry, which can be helpful to understand the AR of the acquiring firm. The study examines pure equity and pure cash offers and finds that, for acquisitions of public firms paid with equity, there is a decrease in AR as idiosyncratic volatility increases, while for acquisitions of public firms paid with cash, the AR increase as the acquirer's idiosyncratic

volatility increases. Hansen (1987) claims that acquirers will prefer to offer stocks when the target firms know its value better than the potential acquirer, as the use of stock rather than cash serves as a contingent price mechanism. However, if the asymmetric information is two-sided, acquirers are more likely to prefer stocks as their method of payment when the acquiring firm is overvalued, and cash when the acquiring firm is undervalued. The method of payment may therefore be affected by both the uncertainty of the target and the acquiring firm. Fishman (1989) argues that cash offers have the advantage to preempt competition by signaling a high valuation for the target company, while securities may indicate that the acquiring firms' securities have a lower value; because if they knew the securities had a high value, they would have offered cash.

Fuller et al. (2002) examine the effect of the acquirer's characteristics on the M&A announcement return using US market data between 1990 and 2000. They find that acquisitions on public targets results in significant negative returns to the acquiring company when stock is offered, while the result is insignificant on acquirer's returns for cash or combination offers. Further, their study suggests that acquirers receive higher returns through stock offers for private targets, which may be a result of tax considerations and monitoring benefits. However, Andrade et al. (2001) find that over the time period of 1970 to 1989, the AR for deals settled with cash payment is significantly higher than for the deals settled using stock financing. Alexandridis et al. (2017) claim to be the first to document non-value-destroying stock-for-stock deals for acquirers within a U.S sample, and state that acquiring firms generate an overall higher value for their shareholders post 2009. In a study on European M&As between 2002 and 2010, Mateev (2017) concludes that shareholders of the acquiring company earn a higher AR in equity offers than bids using other types of payment,

which contradicts previous literature. However, he argues that the higher return for stock offers could be a result of a high number of acquisitions on unlisted targets using acquirer's equity.

Our contribution to this field of research is using the return around the announcement day to investigate how the method of payment affects the CAR in the Norwegian stock market in combination with other deal characteristics. We state the following hypothesis:

Hypothesis 3: Acquirers' abnormal return are higher for deals using cash as the type of payment compared to those using stocks or a combined payment method.

3.4 Listing status of the targeting company

In addition to the method of payment, the listing status of the target company is widely discussed in literature. Prior studies explore how shareholders benefit differently depending on whether the target company is public or private. Mateev (2017) concludes that for European acquiring firms, there is a significant difference in the AR between unlisted and listed target firms. Several studies show that acquiring public companies on average yield zero or negative CAR for the acquirer, whilst the acquiring of private companies normally results in a positive CAR (Chang, 1998; Fuller et al., 2002; Moeller and Schlingemann, 2005; Faccio et al., 2006; Alexandridis et al., 2017; Shams et al., 2013).

The positive return for acquirers of unlisted companies could potentially be explained by a liquidity effect, also referred to as the private discount effect. Publicly traded firms are easier sold than private and subsidiaries, and thus the acquirer often receives a discount when they buy private companies relative to what they would pay for the equivalent publicly traded target

(Fuller et al., 2002). This liquidity effect is also implemented when investment bankers are valuing privately held companies, as they normally apply a discount relative to the listed companies, mainly due to the anticipated illiquidity of private companies (Koeplin et al., 2000). This indicates that the acquirers buying a private company tend to get a better price as a compensation for the illiquidity of the firm. Further, this might lead to the market reacting positively to public acquirers buying private firms if they believe the public company can add value through increased liquidity.

We aim to contribute to prior literature by gaining an understanding of how the market reacts differently to announcement news of acquiring companies buying private and public targets, and the following hypothesis is formulated:

Hypothesis 4: Acquirers buying privately held companies earns a higher abnormal return than those who acquires public companies.

3.5 Calendar effects on the announcement of M&As

While the method of payment and listing status are widely discussed in prior literature, calendar effects are not extensively covered. Calendar effects are anomalies in stock returns that relate to calendar time. This refers to day-of-the-week, month-of-the-year or holidays, where two specific examples are the Monday effect and the January effect (Hansen et al., 2005). However, we are interested in whether there are similar calendar anomalies connected to the announcement of an M&A transaction and whether inattention affects investors' response. A study on stock offers by Louis and Sun (2010) finds evidence indicating that inattention affects investors' information processing in the event of an M&A announcement.

Filipovic (2018) finds that there is a high number of deals announced on Mondays, known as Merger Monday, and a low percentage of announcements

on Fridays. He further suggests that managers may try to avoid investor inattention and the adverse selection problem. The first suggestion is supported by literature, and deHaan et al. (2015) find that managers with good news to announce prefer high attention. They further state that managers with bad news tend to report it on Fridays; even though they do not find evidence that the attention is lower this specific weekday. Furthermore, Louis and Sun (2010) findings suggest that inattention affects investors' information when processing the event of an M&A. They find different results on the Friday effect between privately and publicly owned targets, where privately owned targets gain a smaller positive Average Abnormal Return (AAR), while publicly owned targets gain a smaller negative AAR when announcements are made on Fridays rather than other business days. Filipovic (2018) further states that managers strategically time announcements to avoid potential negative reactions. Managers may therefore have a concern that there is a risk of announcing news on Fridays, as investors might misinterpret this news believing that managers announce on Fridays due to it being bad news. Additionally, this may make managers try to avoid announcing on this day and hence delay the announcement until Monday. It is therefore interesting to investigate whether this phenomenon is true and if there are any arbitrary calendar days when choosing the announcement time, or if Fridays simply draw less attention by investors.

We aim to contribute to prior literature with an insight of whether managers strategically time or potentially could gain from strategically timing M&A announcements and propose the following hypotheses:

Hypothesis 5: The market reaction to Friday announcements is less positive than the rest of the week.
Hypothesis 6: The market reaction to Monday announcements is more positive than the rest of the week.

3.6 Domestic versus cross-border acquisition

As earlier mentioned, the number of M&As have increased considerably over the last several decades, where a key part of the increase includes cross-border M&As, which today is a major part of foreign direct investment (Xu, 2017). There are several studies investigating whether there are differences in AR for the acquiring company of cross-border and domestic M&A announcements, and Moeller and Schlingemann (2005) concludes that the difference in gain for the acquirer is prominent. However, it is unclear whether the acquirer in cross-border M&As earn a positive AR.

Mateev and Andonov (2016) find, in their study of domestic and cross-border M&As including 38 European countries, that the acquiring company gain lower announcement AR through cross-border M&As than domestic deals. Additionally, Eckbo and Thorburn (2000) analyze a large sample of both domestic and cross-border M&As for Canadian firms. They find evidence that, post-announcement, domestic acquirers earn significant positive AR, while the cross-border do not earn any AR that is significantly different from zero. However, Ding et al. (2021) use an event study and the propensity score matching-difference-in-differences regression method to study cross-border M&As of Chinese listed firms and find that within a 21-day event window, the acquiring firms earns a positive CAR.

We want to investigate whether announcements of cross-border and domestic M&As differs in the effect on AR for Norwegian acquiring companies. The following hypothesis is formulated:

Hypothesis 7: Acquiring companies in domestic M&As earn a higher post-announcement abnormal return than the acquiring firms of cross-border M&As.

3.7 Merger relatedness

Lastly, we want to investigate if the relatedness of a merger has an effect on the acquiring company. As previously mentioned, one of the main reasons for companies to proceed with an M&A is to expand and strategically grow. Furthermore, an important incentive for corporate takeovers is the potential synergy effects between the firms, which is expected to provide positive returns for shareholders (Tuch and O'Sullivan, 2007). Additionally, companies may acquire established firms in unrelated industries to diversify, which can be profitable if the acquirer can identify undervalued firms by the stock market (Besanko et al., 2013). However, the empirical literature consists of contradicting evidence of the effect industry relatedness has on the acquiring company, and several studies fail to prove the relation between industry relatedness.

Related acquisitions imply increased market power or synergy, and Walker (2000) finds, in an event study using cumulative market-adjusted returns over a five-day event period, that the takeovers that expand the firm's operations geographically, or by increased market share, earn higher returns. However, he does not find evidence that acquiring firms get a continuous advantage over rival firms. On the contrary, Ramaswamy and Waegelein (2003) provide evidence, using 2-digit Standard Industrial Classification (SIC) industry classification, that mergers where firms are in unrelated industries experience more positive financial performance than firms in related industries. Mateev (2017) does not find that short-term wealth effects in European M&As are significantly influenced by the relatedness of target industry. Similarly, Fuller et al. (2002) cannot explain their results by industry effects. Generally, investors do not expect more promising expectations for related mergers than for unrelated ones (Lubatkin, 1987).

We aim to contribute to this field of research by further investigating whether there is a difference in market reaction to the announcement of M&As involving industry related and unrelated targets, and the hypothesis is formulated as follows:

Hypothesis 8: Acquiring companies do not earn a higher abnormal return acquiring industry related target companies than unrelated.

4 Methodology & Hypotheses

In this section we further define the hypotheses, and outline the methods used to investigate these and how we will interpret the results obtained from the tests. A standard event study methodology is used to analyze the market reaction to announcements where abnormal return is used as the performance measure. The expected return is obtained by the market model.

4.1 Event Study

MacKinlay (1997) defines event studies as the use of data from the financial market to study the impact of specific events on the value of a firm. The event study methodology is frequently used when studying the effect on common equity in economy wide and firm specific events such as M&As. In the literature, the event study methodology is a commonly used econometric model to analyze the effect of M&As on stock returns (Mateev, 2017; Ma et al., 2009; Elad and Bongbee, 2016; Ding et al., 2021; Adnan and Hossain, 2016).

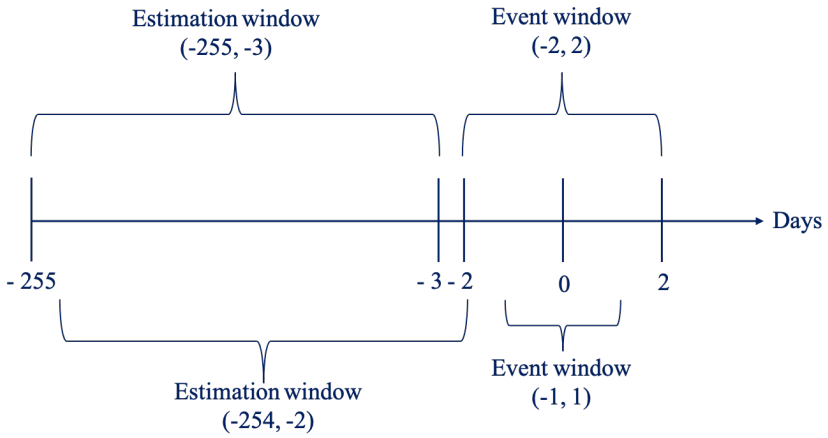
An advantage of using event study methodology with a large sample to study the announcement effect, is that we can use a standardized event window across all observations as, by the Law of Large Numbers, the errors of a too

long or too short window will have a small impact on the average (Krivin et al., 2003). Prior literature addresses how an appropriate event window could be defined. MacKinlay (1997) states that even though the specific event is of only one day, it is normal to set the event window over a longer period. However, the use of a wide event window is inconsistent with the EMH, which implicates that the market reacts to news and incorporates it into prices quickly, and consequently using a longer period will add potentially confounding noise (McWilliams and Siegel, 1997). Ma et al. (2009) states that it is usual to include at least one day prior to and one day after the event. This is to capture potential information leakages by investigating possible pre-event returns and market reaction in the case of announcement occurring after trading hours. For our event study, the event is defined as the announcement of the M&A. Additionally, in this study, it is beneficial to define an event period that is rather short, since the research question involves studying the short-term effect of the timing of announcements on the stock prices. Using a broader event window would not capture the short-term effect and change our focus. Thus, in order to be in line with the EMH, but still capture potential leakages and M&A announcements occurring after the closing of the market, the event windows in this thesis are set to one and two days prior to -and after the announcement of the M&A and thus defined as [-1,1] and [-2,2].

Further, the estimation period for expected returns is typically between 100 to 300 days for studies on daily data. The choice of estimation period is a trade-off between the cost and benefit of a longer period, where the cost is model parameter instability, and the benefit is an improved prediction model (Peterson, 1989). Consequently, the estimation period in this study is set to be one trading year, i.e., 252 days. MacKinlay (1997) states that the estimation period normally should not include the event window itself, and

thus the estimation windows used are: [-255, -3] and [-254, -2]. The reason that the estimation window and the event window usually should not overlap, is that this could potentially lead to the event returns impacting the estimation of the expected returns. This again creates problems as the event study methodology assumes that the impact from the event only is captured in AR within the event window (MacKinlay, 1997).

Figure 1: Estimation and Event Windows



The figure shows the defined estimation windows, [-255, -3] and [-254, -2] and event windows [-1,1] and [-2,2].

4.1.1 Abnormal Return

The chosen performance measure in this study is CAR, which is commonly used for measuring acquirer's performance (Mateev, 2017; Keown and Pinkerton, 1981; Fuller et al., 2002). In the market model, when the estimation period and the event window are distinct, the prediction error is the AR, i.e., the difference between the actual return and the expected return (Ma et al., 2009; Armitage, 1995). We find the AR for the acquiring firm over the defined event windows of [-1,1] and [-2,2]. AR is the return earned by the firm that is not due to general market movements and is defined by the actual ex-post return of the acquirer's security, minus the expected return calculated as the return expected if the event were to not take place,

and is outlined in the following equation:

$$AR_{i,t} = R_{i,t} - E(R_{i,t}|X_t) \tag{1}$$

In the equation, $AR_{i,t}$ is the abnormal return, $R_{i,t}$ is the actual return and $E(R_{i,t}|X_t)$ is the expected returns for the time period t conditioning information for the normal return model (MacKinlay, 1997), or the return in the market, defined as Oslo Børs Benchmark Index (OSEBX) in this thesis.

4.1.2 Expected Return

The market model, which assumes a linear relationship between the stock return and the market (MacKinlay, 1997; Ma et al., 2009), is used to compute the expected returns. First, the daily stock prices, obtained from Bloomberg, for the acquiring company's stock is used to calculate the logarithmic daily return for all the acquiring companies.

The expected return is calculated by first relating the return of the acquiring company's stocks to the market portfolio with assumed joint normality:

$$E(R_{i,t}|X_t) = \alpha_i + \beta_i r_{m,t} + \epsilon_{i,t} \tag{2}$$

where $\beta_i r_{m,t}$ denotes the return of the stocks due to market movements in OSEBX, modified by β, and $\epsilon_{i,t}$ denotes the the unsystematic risk due to firm-specific factors.

The use of a statistical model assumes that the returns are jointly multivariate normal and identically and independently distributed throughout the time period (MacKinlay, 1997). After running the regression for expected "normal" performance by the market model, we get the parameter estimates for the firm's general performance, α, and the firm's

sensitivity and response to the market, β.

4.1.3 Cumulative Abnormal Return

The sum of all the abnormal return for n periods gives us the CAR for a given time period:

$$CAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{i,t} \tag{3}$$

The CAR gives us the sum of return that is earned above the normal return in ordinary market conditions, and thus gives us the opportunity to investigate how the event of announcing an M&A to the market affects the shareholders' return.

4.2 Alternative Methodologies

The expected "normal" return is the return that we would expect to see if the event did not take place (Ma et al., 2009). The single index model, the market model and Capital Asset Pricing Model (CAPM) are three common methods to calculate this return. In general, using an economic model such as the CAPM, with statistical assumptions, would explain more the rationale of investor's behavior. However, the statistical models can remove potential deviations without as strong assumptions as in the economic models, by using a method-of-moments approach to modify the statistical framework and thus make the study of the ARs consistent with autocorrelation and heteroskedasticity (MacKinlay, 1997). The single index model, also known as the constant mean return model, assumes that the security's mean return is constant (Ma et al., 2009). The market model presents a potential improvement to the constant mean model (MacKinlay, 1997). Further, the market model is a one factor Ordinary Least Square (OLS) regression

equation, and (Armitage, 1995) finds in his study of event study methods that the market model is both most frequently used, and the model best supported by evidence for calculating expected returns in an event study approach. Further, in regards of statistical models, a multi factor model could have been used. However, in practice, the gains from applying additional factors are limited, and there is little reduction in the variance of the AR when adding multiple factors to the model (MacKinlay, 1997).

Consequently, as the market model is an improvement to the single index model, and the most commonly used when obtaining expected returns, it is the model used to obtain expected return in this study.

4.3 Hypotheses

4.3.1 The effect of acquisition news on acquirer's stock return

Hypothesis 1: The market will respond slightly negative to an announcement of an M&A with the acquirer being listed on Oslo Børs. This annoucement will create CAR of slightly less than zero.

This hypothesis is tested by obtaining the CAARs for both event windows, and checking whether the CAARs are significantly different from zero:

$$H_0 : CAAR_{-1,1} = 0,\ H_A : CAAR_{-1,1} \neq 0 \tag{4}$$

$$H_0 : CAAR_{-2,2} = 0,\ H_A : CAAR_{-2,2} \neq 0 \tag{5}$$

Further, if we reject the null hypothesis and conclude that the CAARs are significantly different from zero, we check whether they are positive or negative. If they are negative, this supports our hypothesis that the market will respond slightly negative to an announcement of an M&A with the acquirer being listed on Oslo Børs.

4.3.2 Information leakage

Hypothesis 2: Information leakage leads to significant daily abnormal return for the acquirer prior to the announcement.

First, by plotting the daily AR before the announcement date, we can visually see if there is a price run-up prior to the announcement day or not. Further, in order to statistically investigate whether information leakage leads to significant daily AR for the acquirer prior to the announcement, we need to analyze the daily ARs, which is obtained by the estimation window [-255, -3]. This makes us able to see if there are changes in the prices prior to the announcement date, which might indicate leakages and insider trading. To find out whether the returns are statistically significant, two-sided t-tests are conducted on the two days prior to the announcement. The null and alternative hypotheses are formulated as follows:

$$H_0 : AAR_{-1} = 0,\ H_A : AAR_{-1} \neq 0 \tag{6}$$

$$H_0 : AAR_{-2} = 0,\ H_A : AAR_{-2} \neq 0 \tag{7}$$

If the t-tests show that the daily AARs are significantly different from zero prior to the announcement date, this may indicate that some market participants act on information about the M&A deal prior to the announcement. Further, if this holds, it supports our hypothesis that information leakage leads to significant daily ARs for the acquirer prior to the announcement.

4.3.3 The method of payment

Hypothesis 3: Acquirers' abnormal return will be positively affected by cash as the type of payment compared to stocks or a combined payment method.

For this hypothesis we want to examine if the mean differences of the dependent variables, $CAR_{-1,1}$ and $CAR_{-2,2}$, for the dummy variables *Stock*, *Cash* and *Combination* are significantly different from zero. This is done through a one-way Analysis of Variance (ANOVA), where the mean differences, the null hypotheses, and the alternative hypotheses are stated as follows:

$$Mean\ Difference = CAAR_{Stock=1} - CAAR_{Cash=1} \tag{8}$$

$$Mean\ Difference = CAAR_{Stock=1} - CAAR_{Combination=1} \tag{9}$$

$$Mean\ Difference = CAAR_{Combination=1} - CAAR_{Cash=1} \tag{10}$$

$$H_0 : MeanDifference = 0 \tag{11}$$

$$H_A : MeanDifference\ \neq\ 0 \tag{12}$$

Further, if the mean difference (8) is positive, this means that the CAAR for Stock deals is higher than for deals settled with cash. If the mean difference (9) is positive, this means that the CAAR for deals settled with stocks is higher than for those settled with a combination as payment method. If mean difference (10) is positive, this indicates that deals with combination as payment method yields higher CAAR than those settled with cash. The results that will support upon our hypothesis that acquirers' AR will be positively affected by cash as the type of payment compared to stocks and combination as payment method, is that mean differences (8) and (10) defined above are negative.

4.3.4 Hypotheses including only one dummy variable

The five remaining hypotheses are studied using the exact same method, and will be explained in general, before the interpretation of the potential results

is presented in separate sub-parts.

First a dummy-variable D_1 is created, which takes the value 1 if it is true, and 0 otherwise. We want to test if the mean difference of the dependent variables, $CAR_{-1,1}$ and $CAR_{-2,2}$, are significantly different from zero. The mean differences, the null hypotheses and the alternative hypotheses are stated as follows:

$$Mean\ Difference = CAAR_{D_1=0} - CAAR_{D_1=1} \tag{13}$$

$$H_0 = Mean\ Difference = 0 \tag{14}$$

$$H_A = Mean\ Difference \neq 0 \tag{15}$$

Further, since variables may have different significance when looking at the whole sample and at a partial sample, we perform t-tests in partial subsamples created for all dummy variables. We do this by running several mean difference tests on all dummy variables splitting the sample by the specific dummy variables we want to test in the hypothesis. When performing these tests, it is important to have in mind that dividing the observations into subsamples makes the number of observations in each test smaller. In return, this subsampling reduces our power and can make it harder to detect if the sample result is significantly different from zero, even when the true result is significantly different (Type II error).

We further explain the meaning of the results from the mean difference tests for each hypothesis below:

Listing status of the targeting company

Hypothesis 4: Acquirers buying privately held companies earns a higher abnormal return than those who acquires public companies.

If the mean difference is significantly different from zero and positive, this

supports our hypothesis that acquirers buying privately held targets earn a higher AR than those who acquire a listed company.

Calendar effects on the announcement of M&As

Hypothesis 5: The market reaction to Friday announcements is less positive than the rest of the week.

If the mean difference is significantly different from zero and positive, this supports our hypothesis that the market reaction to Friday announcements is less positive than the rest of the week.

Hypothesis 6: The market reaction to Monday announcements is more positive than the rest of the week.

If the mean difference is significantly different from zero and negative, this supports our hypothesis that the market reaction to Monday announcements is more positive than the rest of the week.

Domestic versus cross-border acquisition

Hypothesis 7: Acquiring companies in domestic M&As earns a higher post-announcement abnormal return than the acquiring firms of cross-border M&As.

If the mean difference is statistically significant and positive, we conclude that the acquiring companies in domestic M&As earn a higher post-announcement AR than the acquiring firms of cross-border M&As.

Merger relatedness

Hypothesis 8: Acquiring companies do not earn a higher abnormal return acquiring industry related target companies relative to unrelated target companies.

If the mean difference is statistically significant and negative, we conclude that acquiring companies do not earn a higher AR when acquiring industry related target companies relative to unrelated targets.

5 Data & Summary Statistic

5.1 Data collection

In our study we examine recent M&A deals in Norway collected from the Zephyr database of Bureau van Dijk, while the stock prices on these deals are collected from Bloomberg terminal. According to Ma et al. (2009), Zephyr is particularly useful when studying deals in Europe after 1997 and are used in several studies on M&A deals. Our cleaned sample consists of 226 deals within the time period from 01/01/2006 to 01/01/2021.

The sample is constructed from Zephyr, starting with the number of deals for the longest possible time period form 1986 and until 2021 and gets 777,608 deals when only restricting the deals to being mergers or acquisitions. Additionally, we want to narrow down the sample to including only acquiring companies listed on Oslo Børs which leaves us with 2,172 observations.

Furthermore, we apply the following search criteria to the Zephyr database: (1) Listed/Unlisted/Delisted companies: listed acquirer, (2) Deal type: Merger, Acquisition, (3) Method of payment: Shares, Cash, (4) Time period: on and after 01/01/2006 and up to and including 01/01/2021, (5) Percentage of stake: Percentage of final stake minimum 50%, (6) All stock exchanges: Oslo Børs, Acquiror. From these criteria we received a total of 259 deals and collected deal specific information of target and acquiring firm, consisting of ticker, SIC code, country code, deal status, announcement date, method of payment, target company's listing status, acquired stake and deal value.

Further, we create dummy variables from the collected data on the characteristics of interest. This includes a dummy variable for each method of payment; *Cash, Stocks and Combination*, where *Combination* is the combination of *Cash* or *Stocks* and other types of payments. A dummy variable for the day of the week, specifically; *Friday* and *Monday*, is created to capture the potential effect of these weekdays. To estimate the industry effect, the SIC codes of the acquiring firm and target firm are matched on the two first digits to evaluate whether they are within the same industry, and hence are related or not. The listing status of the target company is obtained from Zephyr, however, only seven listed companies were found, while 51 companies appeared as delisted. The low number of listed targets was due to the listing status was of today's date, and companies acquired and delisted therefore show as delisted. Hence, we manually control the delisted target companies if they were listed at the announcement time or not. Further, we generate a dummy variable on domestic and foreign deals using the target and acquirer's country code.

To find the acquiring companies' stock prices we adjust the ticker received from Zephyr to be in accordance with Bloomberg and use excel add-in to collect stock prices by the ticker. After we collect the stock prices, we control for potential mismatches which includes removing deals that were not listed within the time period of the deal announcement or simply have missing stock prices, which results in removal of 25 deals from the sample. Furthermore, we convert the prices into daily logarithmic returns. Additionally, we collect the historical market capitalization in EURs, the total debt to equity ratio, total assets and Tobin's Q from Bloomberg based on the data in the last available quarter before the announcement date.

5.1.1 Processing of the data

After cleaning the data in Excel, we transfer the deal specifics, firm's stock returns and OSEBX returns from Zephyr and Bloomberg into the statistical tool Stata for further analysis. In Stata, we sort the data based on ticker and announcement date and delete deals where the acquiring company have more than one deal at the same announcement date, which reduces our sample by eight deals. We found this necessary as it would not otherwise be possible to draw conclusions on the single deal's effect on the acquiring company. Furthermore, we merge the data set of stock returns with the deal specifics on ticker and dates, where dates are specified to trading days only by assuming that a zero return in OSEBX is due to a non-trading day. For deals announced on non-trading days, we use the closest trading day after the announcement as day zero when calculating CAR.

Two new dummy variables for size are generated; *Large* and *Small*, where *Large* includes the upper 50th percentile and Small includes the 50th lower percentile of the logarithm of market capitalization. Furthermore, the logarithm of market capitalization and deal value is used as a control variable later on. Additionally, to make the variables less skewed and the results more robust, we winsorize *LnMrktCap*, *LnDealValue* and *Debt-to-Equity*. Further, for robustness, we also conduct univariate tests using *LnAssets* as the determinant for size rather than *LnMrktCap*, where the results are relatively similar, and the significance do not change much. Additionally, the correlation between *LnAssets* and *LnMrktCap* is reported as 0.8102 (Appendix B), which means the two variables are highly correlated. Consequently, using *LnAssets* would not change the results by much, and *LnMrktCap* is chosen as the preferred measure. Further, the variables *Large* and *Small*, in addition to *Tobin's Q* and *Leverage*, defined by *Debt-to-Equity*, are used as control variables in the multivariate regressions.

Additionally, since our result can potentially be caused by other corporate events affecting the ARs within the same time period, we perform additional robustness checks of our results. This is conducted by randomly choosing 20 deals by using the RAND function in excel and using Oslo Børs' News Web to investigate whether there was any news reported within a time period of five days prior the announcement date of these companies. Only four out of twenty companies had any other press releases within this time period where they reported announcement of improved financials, new contracts signed with an important counterpart, closing of a trade of acquisition and a mandatory notice of primary insider trade. We will not investigate the effect of these announcement further in this thesis, but it is important to have in mind that some of the results can also be caused by other corporate events and should therefore be treated with caution.

5.1.2 Summary statistics

We describe the discussed characteristics of M&As below, divided into deal, target -and acquirer characteristics. *Table 1* show these characteristics and the dependent variable CAR for the two different event windows. The dummy variables specified in the table follows the Bernoulli distribution, where the dummy takes the value of 1 with probability of θ, and value of 0 with probability of 1-θ (Wooldridge, 2015).

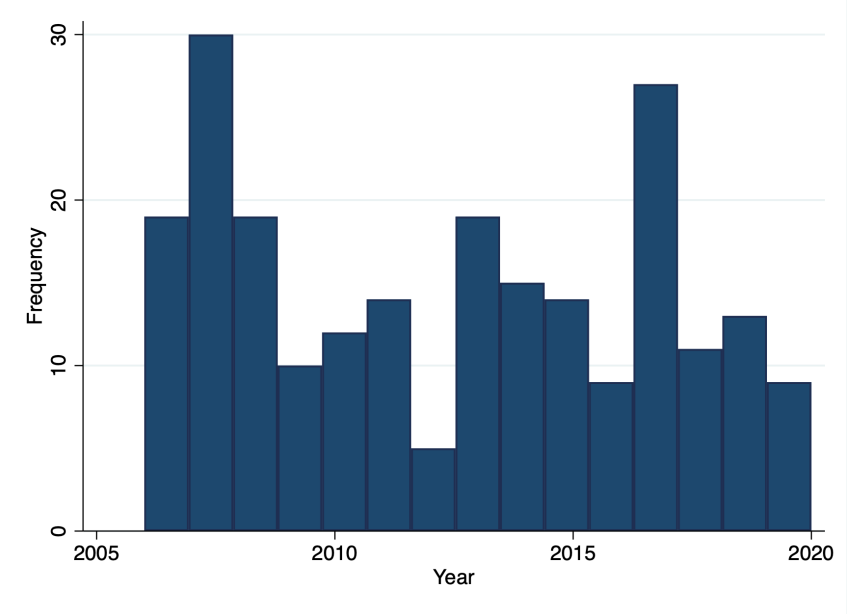
Table 1: Variable Description

Acquisitions performance (Dependent Variable)	
$CAR_{-1,+1}$	Acquiring company's cumulative abnormal returns over a 3-day event window around the M&A announcement day.
$CAR_{-2,+2}$	Acquiring company's cumulative abnormal returns over a 5-day event window around the M&A announcement day.
Deal Characteristics (Independent variables)	
Cash	Dummy variable which takes the value 1 if the deal was financed with 100% cash and 0 otherwise.
Stocks	Dummy variable which takes the value 1 if the deal was financed with 100% stocks and 0 otherwise.
Combination Payment	Dummy variable which takes the value 1 if the deal was financed with a combination of stocks or cash with other methods of payments and 0 otherwise.
Monday	Dummy variable which takes the value 1 if the deal was announced on a Monday, and 0 otherwise.
Friday	Dummy variable which takes the value 1 if the deal was announced on a Friday, and 0 otherwise.
Target Characteristics (Independent variables)	
Public	Dummy variable which takes the value of 1 if the target company is public, and 0 if private.
Cross-border	Dummy variable which takes the value of 1 if the target company is foreign, and 0 if Norwegian.
Unrelated	Dummy variable which takes the value of 1 if the target company is unrelated, i.e., have different 2 digit SIC code as the acquiring company and 0 otherwise.
Acquirer Characteristics (Independent variables)	
LnMrktCap	The logarithm of the historical market capitalization in EUR.
Small	Dummy variable which takes the value 1 if the LnMrktCap is in the lower 50th percentile.
Large	Dummy variable which takes the value 1 if the LnMrktCap is in the upper 50th percentile.
Tobin's Q	The ratio of the firm's market value to the replacement cost of total assets.
Leverage	Total debt to total equity ratio for the acquiring firm.
LNDealValue	The logarithm of the value of the deal.
AcquiredStake	The stake acquired of the target firm.

This table summarizes the different variables obtained and used in the regression output and analysis.

Further, from January 2006 to January 2021, we find that the number of announced M&A deals by acquiring companies listed on Oslo Stock Exchange are 226 within our final sample. From *Figure 2* we can see three clear peaks of M&A activity, where the first peak is around 2007, the second in 2013 and the last one in 2017. From the literature, the first peak may be explained by the 6th merger wave (Alexandridis et al., 2012). The sample consists in total of 101 pure cash deals (44.3%), while 51 deals were purely paid with stocks (18%). Furthermore, the sample consist of only 51 deals announced on Mondays (22.6%), while 37 deals were announced on Fridays (16.4%). We can see that the related deals totals to 105 (46.5%), while 121 deals are categorized as unrelated (53.5%). Domestic deals in our sample represent 120 deals (53.1%), while foreign deals amount to 106 (46.9%). Lastly, our sample consist of mostly deals of private targets, 176 deals (77.9%), and only 50 deals with public targets (22.1%). Further, *Appendix A* shows the distribution of deal characteristics across acquirers firm size.

Figure 2: Yearly Distribution



This graph shows the yearly distribution of M&A deals announced in Norway between 2005 and 2020.

Table 2: Sample Distribution

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cash	8	10	8	4	4	8	3	13	7	6	2	9	5	10	4
Shares	4	9	6	3	4	2	1	4	2	3	4	5	1	1	2
Comb.	7	11	5	3	4	4	1	2	6	5	3	13	5	2	3
Monday	6	10	2	2	4	3	0	5	3	3	4	6	2	0	1
Friday	1	5	8	2	0	1	1	3	1	1	2	6	1	3	2
Related	8	15	7	5	3	5	2	10	2	5	6	14	5	11	7
Unrelated	11	15	12	5	9	9	3	9	13	9	3	13	6	2	2
Domestic	10	15	14	9	6	11	2	11	6	8	6	13	5	5	3
Foreign	9	15	5	1	6	8	3	8	9	6	3	14	6	8	6
Public	2	10	9	3	4	2	1	6	0	1	2	1	2	6	1
Private	17	20	10	7	8	12	4	13	15	13	7	26	9	7	8
Total	19	30	19	10	12	14	5	19	15	14	9	27	11	13	9

This table summarize the annual deals for the entire sample by deal characteristics. The sample consists of announced deals within the time period of 2006-2020, with the acquiring company being listed at Oslo Børs.

Table 3: Continous Data Summary

Variable	Observation	Mean	Std. Dev.	Min	Max
LnDealValue	217	10.1369	2.1748	5.2885	15.0693
Leverage	213	104.6529	172.9866	0	860.5585
LnMrktCap	217	5.8610	1.9460	2.2819	10.1675
AcquiredStake	211	80.5018	30.4668	0.5510	100
$CAR_{-1,1}$	226	0.0299	0.1192	-0.3416	1.2603
$CAR_{-2,2}$	226	0.0279	0.1168	-0.2932	1.0641

This table shows the summary statistic for the continuous variables in our data and the summary statistics for the obtained CAR.

6 Empirical Analysis

This section includes analyses and interpret the results from the conducted tests, where the aim is to test our hypotheses. Multiple tests are conducted, where the main focus is examining the variation of CAR related to different characteristics. Further, tests are conducted on subsamples splits for the variables that are out of the company's control, which allows us to isolate the individual effects. The method of investigating these splits is preferred over controlling for variables in multivariate regressions. Given our limited sample size, the concern in multivariate regressions with interacted effects, is that due to the correlation between variables of interest we would not have sufficient power to statistically identify any effect. The tests of subsample

splits produce results that makes it easier to interpret the isolated effect. Additionally, in these analyses we do not find the multivariate regression to answer the research question in a more precise way than by the preferred method of subsample splits. However, in the last part of the section, a multivariate analysis is included in order to give potential additional support to the univariate tests.

6.1 The effect of acquisition news on acquirer's stock return

Table 4 reports the CAAR for the two event windows [-1,1] and [-2,2] obtained by using the market model as described in Section 4. The results for the full sample show that the announcement effect is positive and statistically significant different from zero on all relevant significance levels (1%, 5% and 10%), as the P-values for both event windows are equal to zero. Consequently, we reject the null hypotheses of CAAR being equal to zero. Furthermore, the univariate test indicates that M&A announcements in the Norwegian stock market are perceived positively, which may indicate that overall M&A announcements are viewed as good news for the acquiring company. This further means that the investors believe that the M&A leads to value creation. These results do not support our hypotheses about the market responding slightly negative to an announcement of an M&A when the acquirer is listed on Oslo Børs. Further, the results contradict to the strong form of efficient market in EMH, since new, previously not public information, is causing AR, whereas in a strong form of efficient market this information would already be accounted for in the stock price. This, however, supports upon the semi-strong form efficient market as it indicates that prices immediately incorporate publicly available information which in this study is the announcement of M&As. Despite most of the prior literature

supporting our initial hypothesis of slightly negative returns (Campa and Hernando, 2004; Fuller et al., 2002; Stahl and Mendenhall, 2005), some papers studying the developed market supports our findings as they find that the market has a positive reaction to M&A activity (Cicon et al., 2014; Mateev, 2017; Moeller and Schlingemann, 2005).

The hypothesis is further tested by controlling for size, where the mean is statistically significant for both small and large acquirers. Thus, we find that the results of the market having a positive reaction to M&A announcement holds for both small and large acquirers. However, the coefficient for small acquirers is considerable higher than for the large acquirers. From an economic point of view, this can be explained since the potential gain from an M&A will influence a smaller acquiring company more than a large one in relative terms. As previously mentioned, increased returns can be a result of efficiency gains, diversification and growth. It is reason to believe that these effects will be more severe for small firms than large and mature firms.

Table 4: Cumulative Average Abnormal Return

Panel A: Full sample (N=226)

Event Window	Mean	Robust Std. err.	t-statistics	P-value
$CAAR_{-2,+2}$	0.0279	0.0078	3.59	0.000***
$CAAR_{-1,+1}$	0.0299	0.0079	3.77	0.000***

Panel B: Large Acquirer company (N=109)

Event Window	Mean	Robust Std. err.	t-statistics	P-value
$CAAR_{-2,+2}$	0.0090	0.0053	1.71	0.090*
$CAAR_{-1,+1}$	0.0117	0.0045	2.57	0.011**

Panel C: Small Acquirer company (N=109)

Event Window	Mean	Robust Std. err.	t-statistics	P-value
$CAAR_{-2,+2}$	0.0474	0.0149	3.17	0.002***
$CAAR_{-1,+1}$	0.0491	0.0155	3.16	0.002***

This table shows the Cumulative Average Abnormal Return over two different event windows for the whole sample and the subsamples *Large* and *Small*. The table also reports the robust standard errors, t-statisics and the p-values, where * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the next sections we will investigate the hypotheses outlined earlier with the aim to explain the effect different variables may have on the announcement news, and why the CAAR for the acquiring firm's stockholders seem to be positive in both event windows.

6.2 Information leakage

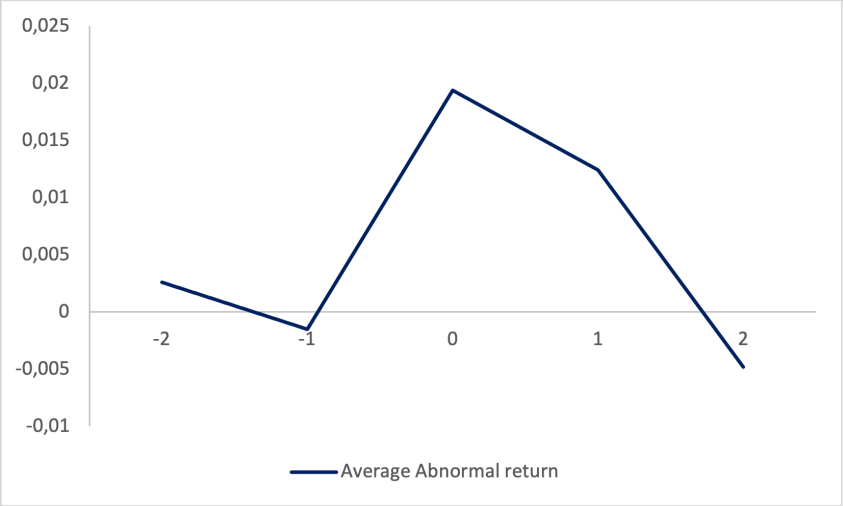
By using the estimation window of 252 trading days prior to the event window [-2,2], we investigate the significance of AAR around the time of the announcement of the M&A. *Table 5* indicates significant positive ARs on the announcement day at 5% and 1% significance level, and the first day after the announcement at a 5% significance level, while the AR on day two after the announcement are significant negative on a 10% significance level. The days prior to the announcement have insignificant ARs where the return is positive two days prior to the announcement, and slightly negative one day prior to the announcement. This means that we cannot reject the null hypothesis that the AR is equal to zero prior to the announcement of an M&A. Thus, we are not able to find supportive evidence of information leakage prior to deal announcements from the univariate test and cannot conclude that our hypothesis of information leakage leading to significant daily ARs for the acquirer prior to the announcement is true. This further means that the results do not indicate a strong form efficient market from the EMH.

Table 5: Average Abnormal Return

Event day	AAR	Robust Std. err.	t-statistics	P-value
-2	0.0026	0.0024	1.06	0.291
-1	-0.0015	0.0022	-0.69	0.491
0	0.0194	0.0049	4.00	0.000***
1	0.0124	0.0058	2.15	0.033**
2	-0.0048	0.0027	-1.75	0.081

The table shows the daily Average Abnormal Returns (AARs), which are obtained by using the estimation window (-255 -3). The table also reports the robust standard errrors, t-statistics and p-values, where * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Figure 3: Average Abnormal Return



The figure shows the Average Abnormal Return (AAR) prior to and after the announcement day.

6.3 Mean Difference Tests

6.3.1 The method of payment

Table 6 reports the CAARs on deals done by *Cash*, *Stock* and *Combination*, respectively, over the two different event windows. The results in Panel A show us significant positive CAARs on deals paid with stocks at 0.0680 at the five-day event window and a CAAR at 0.090 for Combination deals within the same event window. Deals announced with cash payments are however not significant at the five-day event window but have significant positive CAAR on the three-day event window at 0.0091. Also, stock and combination payments are reported with a significant positive CAAR on the three-day event window at 0.0739 and 0.0278, respectively. This indicates that the method of payment has an effect on acquiring firm's stock return at the time of the announcement. Further, we find that stock payments have a bigger effect than cash and combination payments. However, the mean difference in CAARs is only statistically significant between *Stock* and *Cash* deals. This means that there is a statistically significant difference on the

acquiring company's CAAR by the choice between using cash and stock payment, where stock gives a higher return. These results contradict the prior literature by Andrade et al. (2001), who find that the AR for deals settled with a cash payment is significantly higher than for the deals settled using stock financing. Additionally, the results of a positive reaction to stock payment contradicts to prior literature on signaling, where it is found that the market reacts negatively to stock as the type of payment since it is interpretated as a signal of the acquiring company being overvalued. This further implies that stock as method of payment is not necessarily sending a bad signal about the management's view of the stock price. Our results thus indicate that stock payments are associated with higher announcement effect than cash payments in the Norwegian market, and hence does not support our hypothesis that acquirers' AR will be positively affected by cash as the type of payment when compared to payments through either stock or a combined method.

Table 6: CAAR on Method of Payment

Panel A: Full Sample (N=226)

	CAAR			Mean Difference		
	Cash	Stock	Comb.	(2)-(1)	(2)-(3)	(3)-(1)
$CAR_{-2,2}$	0.0067	0.0680	0.0290	0.0614	0.0390	0.0224
	(0.236)	(0.017**)	(0.011**)	(0.006***)	(0.189)	(0.613)
$CAR_{-1,1}$	0.0091	0.0739	0.0278	0.0647	0.0460	0.0187
	(0.021**)	(0.016**)	(0.013**)	(0.004**)	(0.095)	(0.892)

Panel B: Listing status

	CAAR			Mean Difference		
	Cash	Stock	Comb.	(2)-(1)	(2)-(3)	(3)-(1)
Public targets (N=50)						
$CAR_{-2,2}$	-0.0136	0.0450	-0.0006	0.0586	0.0456	0.0130
				(0.154)	(0.639)	(1.000)
$CAR_{-1,1}$	-0.0026	0.0494	-0.0053	0.0521	0.0547	-0.0026
				(0.102)	(0.208)	(1.000)
Private targets (N=176)						
$CAR_{-2,2}$	0.0148	0.0337	0.0744	0.0596	0.0408	0.0188
				(0.043**)	(0.299)	(1.000)
$CAR_{-1,1}$	0.0139	0.0806	0.0330	0.0667	0.0476	0.0191
				(0.026**)	(0.198)	(1.000)

Panel C: Domestic versus cross-border

	CAAR			Mean Difference		
	Cash	Stock	Comb.	(2)-(1)	(2)-(3)	(3)-(1)
Domestic (N=120)						
$CAR_{-2,2}$	-0.0033	0.0781	0.0101	0.0813	0.0679	0.0134
				(0.023**)	(0.121)	(1.000)
$CAR_{-1,1}$	0.0072	0.0862	0.0127	0.0791	0.0735	0.0055
				(0.043**)	(0.110)	(1.000)
Cross-Border (N=106)						
$CAR_{-2,2}$	0.0181	0.0526	0.0461	0.0345	0.0066	0.0279
				(0.462)	(1.000)	(0.467)
$CAR_{-1,1}$	0.0114	0.0547	0.0414	0.0433	0.0133	0.0300
				(0.156)	(1.000)	(0.288)

Panel D: Merger relatedness

	CAAR			Mean Difference		
	Cash	Stock	Comb.	(2)-(1)	(2)-(3)	(3)-(1)
Related (N=105)						
$CAR_{-2,2}$	0.0182	0.0507	0.0290	0.0109	-0.0217	0.0325
				(1.000)	(1.000)	(0.500)
$CAR_{-1,1}$	0.0141	0.0313	0.0449	-0.0136	0.0172	0.0308
				(1.000)	(1.000)	(0.388)
Unrelated (N=121)						
$CAR_{-2,2}$	-0.0066	0.1056	0.0173	0.1122	0.0883	0.0239
				(0.001**)	(0.014**)	(1.000)
$CAR_{-1,1}$	0.0035	0.1149	0.0186	0.1114	0.0962	0.0151
				(0.004**)	(0.014**)	(1.000)

This table shows the results from mean difference tests of the method of payment for the full sample (Panel A) and the subsamples of listing status (Panel B), domestic versus cross-border deals (Panel C) and merger relatedness (Panel D). The table also reports p-values in the parentheses, where * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

To isolate the effect of payment method, we conduct mean difference tests for the whole sample, and the relevant subsamples are reported above. We find a significant effect on the subsample of private and domestic targets between stock and cash payments, while there is significant result on unrelated targets between both *Stock* and *Cash* and *Stock* and *Combination*. In the subsample in Panel B, the mean difference of private deals is similar to the full sample, which may be explained the private targets being a larger part of the sample. However, these results are also consistent with the findings by Fuller et al. (2002) who suggest that this can be explained by tax considerations and monitoring benefits as stock payments delay the target companies tax liability in contrast to cash payments. Panel C includes the subsamples of domestic and cross-border deals. The mean difference between stock and cash payments in the subsample of domestic targets are slightly higher than the whole sample, which can be explained by a higher uncertainty on foreign deals than domestic deals and hence, it indicates that domestic deals obtain a higher return. For the subsample of unrelated targets (Panel B), the mean difference shows that CAAR for stock payments are significantly higher than both cash and combination payments, which indicate that *Stock* is indeed the preferred method of payment of unrelated targets.

6.3.2 Listing status of the targeting company

The results presented in *Table 7* show that, in isolation, the target company being private has a positive significant effect on the CAAR for both event windows on all relevant significance levels as the p-value is zero. For the *Public* target companies, the acquiring company's CAAR are found to be smaller but insignificant. The mean difference is only marginally significant in the five-day event window, which means that we cannot conclude that the hypothesis of acquirers of privately held targets earning a higher positive AR

than those who acquire public targets holds. However, we can partly conclude on the hypothesis, as the acquirer of privately held targets earns a positive CAAR. Our findings are supported by prior literature, where several studies conclude that the acquiring firm on average earns a positive CAR when acquiring private firms (Chang, 1998; Fuller et al., 2002; Faccio et al., 2006).

Table 7: CAAR on Listing Status

	$(CAR_{-2,2})$	$(CAR_{-1,1})$
Private *(n=176)*	0.0352 (0.000***)	0.0360 (0.000***)
Public *(n=50)*	0.0019 (0.876)	0.0083 (0.403)
Mean Difference	0.0334 (0.0746*)	0.0277 (0.1469)

This table shows the results from t-tests of the mean differences of the Cumulative Average Abnormal Return for *Private*, where the target is not publicly traded and *Public*, where the target is a publicly traded company. The table also reports the p-values in the parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Additionally, we investigate if the target company's listing status is significant in partial subsamples created for all dummy variables. The obtained results in an unreported test show that the subsamples of *Cash* and *Large* include statistically significant results. The results for *Cash* are significant in the event window of [-2,2] with a positive mean difference of 0.0284 on a 5% significance level and only marginally statistically significant in the event window of [-1,1]. This indicates that when cash is the method of payment the acquiring company earns a higher CAAR when acquiring private targets than when cash is the payment and public targets are acquired. The results for *Large* is only significant in the event window of [-1,1] on a 5% significance level with a coefficient of 0.0206. Further, this implies that the large acquiring companies earns a higher CAAR when buying private targets than when buying public targets. One potential explanation for this might be that large acquirers easier find good private

deals as they have more resources available.

In this test it's difficult to find significant results as the number of observations for public deals are relatively small. As for the private deals, where the number of observations is higher, we obtained significant results. Furthermore, in the mean difference tests we cannot make any absolute conclusions based on the results, and they therefore need to be treated with caution. However, we can see that in private deals, the acquirer on average gain a positive CAR.

6.3.3 Calendar effects on announcements of M&As

The hypotheses regarding the calendar effects of announcements of M&As are addressed through first regressing CAR for both event windows by Monday and Friday separately. This enables us to look at the isolated effects of *Monday* and *Friday* on CAAR. The results from these tests are presented in *Table 8* and show that the isolated effect of the dummy *Monday* is statistically significant at a 10% significance level for the event window of [-1,1] and at a 5% significance level for the event window of [-2,2]. For *Friday*, the results are insignificant at all relevant significance levels, and thus, in isolation, announcing on a Friday does not significantly affect the CAAR for the acquiring company.

Further, separate mean-difference univariate t-tests for the full sample of the dummies *Monday* and *Friday* are conducted for both event windows in order to check whether the null hypotheses of zero mean difference should be rejected or not. For *Monday* (Panel A), the P-values for the event windows of [-1,1] and [-2,2] are 0.2335 and 0.5947, and conclusively we do not reject the null-hypotheses of zero difference in mean on any of the relevant significance levels. For *Friday* (Panel B), the P-values for the event windows

of [-1,1] and [-2,2] are 0.5178 and 0.3109 respectively, and thus we do not reject the null hypothesis here either. Consequently, the tests tell us that there is no significant AR different from zero for either of the two dummies *Monday* and *Friday*. The mean difference tests thus show that we cannot conclude that the market reaction to Friday announcements is less positive than the rest of the week, or that the market reaction to Monday announcements is more positive than the rest of the week.

Table 8: CAAR on Day of the Week

Panel A: Monday Deals (n=51)		
	$(CAR_{-2,2})$	$(CAR_{-1,1})$
Rest of the week	0.0301 (0.002**)	0.0350 (0.001**)
Monday Deals	0.0202 (0.035*)	0.0124 (0.073*)
Mean Difference	0.0213 (0.3109)	0.0139 (0.5178)
Panel B: Friday Deals (n=37)		
	$(CAR_{-2,2})$	$(CAR_{-1,1})$
Rest of the week	0.0313 (0.000**)	0.0322 (0.001**)
Friday Deals	0.0100 (0.532)	0.0182 (0.177)
Mean Difference	0.0099 (0.5947)	0.0226 (0.2335)

This table shows the results from t-tests of the mean differences of the Cumulative Average Abnormal Return on calendar effects. Panel A reports *Monday*, where the deals are announced on Mondays and panel B reports *Friday*, where the deals are announced on Fridays. The table also reports the p-values in parantheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

We further run tests to check whether the significance of the results change when looking at subsamples for all dummy variables. However, the tests did not give any significant results for the relevant variables.

6.3.4 Domestic versus cross-border acquisition

The announcement effect on domestic and cross-border target companies are represented in *Table 9* and show positive significant returns on cross-border deals at a 1% significance level in both event windows, while domestic deals are only significant at a 5% significance level in the three-day event window. However, the mean difference in the CAARs of *Domestic* and *Cross-border* is not statistically significant, and the null hypothesis of zero mean difference cannot be rejected on any of the relevant significance levels. The mean difference is also tested within the subsamples and is only found to be slightly significant at a 10% significance level on the *Large* and *Cash* subsample. This implies that we cannot conclude from the univariate tests that the acquiring companies in domestic M&As earn a higher post-announcement AR than the acquiring companies of cross-border M&As do, as our hypothesis states. This result contradicts the prior literature which concludes that the AR for acquiring companies is higher for domestic than cross-border M&As (Mateev and Andonov, 2016; Eckbo and Thorburn, 2000).

Table 9: CAAR on Domestic versus Cross-Border

	$(CAR_{-2,2})$	$(CAR_{-1,1})$
Domestic *n=(120)*	0.0216 (0.084*)	0.0292 (0.028**)
Cross-border *(n=106)*	0.0349 (0.000***)	0.0306 (0.000***)
Mean Difference	-0.0132 (0.3965)	-0.0014 (0.9296)

This table shows the results from t-tests of the mean differences of the Cumulative Average Abnormal Return for *Domestic*, where the target is a Norwegian company and *Cross-border*, where the target is a foreign company. The table also reports the p-values in the parantheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

6.3.5 Merger relatedness

Table 10 reports CAARs for the whole sample according to the relatedness of industry between the acquiring company and the target company. We find significantly positive ARs for related deals for both event windows at a 1% significance level. We also find positive CAARs for unrelated deals, but this is only significant for the five-day event window at a 5% significance level. By conducting mean-difference univariate t-tests on the whole sample we obtain a positive mean difference on both event windows. However, the results are insignificant with the P-values of 0.6324 and 0.9073 in the event windows [-1,1] and [-2,2] respectively, and thus we cannot reject the null hypothesis at any relevant significance level. This further means that we cannot conclude that our hypothesis, which states that acquiring companies do not earn a higher AR acquiring industry related targets relative to unrelated, holds. This is to some extent supported by the prior literature, where several studies have found insignificant results on merger relatedness and are thus not able to explain a potential difference in AR by industry effects (Mateev, 2017; Fuller et al., 2002). From the perspective of synergy effects in terms of value creation, this could potentially indicate that companies are not able to increase the returns of the combined firm due to financial, managerial and operational synergies on a higher level for related targets than unrelated.

Additionally, mean difference tests have been conducted on all defined subsamples to check if the industry relatedness may be significant in a smaller sample. A significantly positive mean difference is found for *Cash* at a 5% significance level within the five-day event window. This implies that related deals have a higher CAR than unrelated deals when cash is the method of payment.

Table 10: CAAR on Merger Relatedness

	$(CAR_{-2,2})$	$(CAR_{-1,1}$)
Related *(n=105)*	0.0288 (0.003***)	0.0258 (0.002***)
Unrelated *(n=121)*	0.0270 (0.026**)	0.0334 (0.011)
Mean Difference	0.0018 (0.9073)	-0.0076 (0.6324)

This table shows the results from t-tests of the mean differences of the Cumulative Average Abnormal Return for *Related*, where the target within the same industry as the acquirer and *Unrelated*, where the target is not in the same industry as the acquirer. The table also reports the p-values in the parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

6.4 Multivariate Regression

In the previous section we analyzed the returns to the acquiring company by several mean difference tests on different characteristics, while this section will consist of results from multivariate tests which will give additional support on the univariate tests conducted above.

First, a regression including the whole sample is conducted. This multivariate regression is a combination of the above-mentioned deal, target –and acquirer characteristics, in addition to some control variables. It is outlined as follows:

$$CAR_{i,t} = \alpha + \beta_1 Cash + \beta_2 Stocks + \beta_3 Monday + \beta_4 Friday + \beta_5 Public + \beta_6 Crossborder + \beta_7 Unrelated + \beta_8 Large + \beta_9 LNdealvalue + \beta_{10} TobinsQ + \beta_{11} Leverage + \beta_{12} AcquiredStake + \beta_{13} LnMrktCap + \epsilon_{i,t} \quad (16)$$

Similar to most of the univariate tests, the multivariate regression (Appendix C) conducted on all of the defined characteristics did not give any statistically significant results on the coefficient for the variables, with the exception of the control variable *AcquiredStake*, which is marginally significant at a 10% significance level. This means that we cannot conclude from the multivariate

regression that any of the variables are good estimators for the dependent variable CAR. This could potentially be caused by the sample being small, a noisy dataset or simply that the variables investigated do not have any effect on the acquirers' stock return around the time of the announcement.

Furthermore, we have tested multiple variations of regressing CAR and dropping several of the coefficients with the aim of testing various specifications due to reduced statistical power in the full regression. Thus, multiple multivariate tests are conducted across different variables and the subsamples. The results do not give any more insight than the univariate tests as most of the findings are insignificant and therefore, only one test is reported (*Table 11*). On the method of payment we found significant results in the mean difference test, and we therefore want to control for size in the multivariate regression with stock as the method of payment. The results from *Table 11* show that *Stocks* are not a statistically significant estimator of CAR when taking the size of the acquirer into account. However, we can see that the market capitalization is marginally statistically significant on the three-day event window, while it is statistically significant at a 5% significance level in the five-day event window. This indicates that if the value of market capitalization increases by 1, the CAR decreases by 0.0098 and 0.0096 for the three-day and five-day event window, respectively. Thus, in this regression, a higher market capitalization, i.e., bigger size, marginally reduces the CAR, which supports our findings on the univariate test in the subsamples of size comparing the mean of small and large acquiring firms.

Table 11: Multivariate Regression on Shares and Size

	$CAR_{-2,2}$	$CAR_{-1,1}$
Shares	0.0390	0.0444
	(0.159)	(0.115)
LN(MarketCap)	-0.0098	-0.0098
	(0.045)**	(0.064)*
_cons	-0.0771	0.0784
	(0.019)**	(0.025)**
N	217	217
R-Squared	0.077	0.0632

This table reports the results of a multivariate regression on two event windows, with the dependent variables $CAR_{-1,1}$ and $CAR_{-2,2}$. The dummy variable *Shares* is included to control for the method of payment, while *LN(MarketCap)* is added to control for the acquiring firms' market capitalization. The table also show the p-values in the parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Overall, our findings in the multivariate regressions are similar to the mean difference tests where we did not find strong evidence of the characteristics of the announcements being significant predictors of returns, which may indicate that the variables are not very good predictors for CAR. Even though there is on average an increase in the acquiring firm's wealth when announcing an M&A, the increase is not driven specifically by any of the variables of interest related to M&A announcement characteristics.

7 Conclusion

In this paper, we conduct an event study of the acquiring company's CARs within a three- and five-day event window in the Norwegian market represented by companies listed on Oslo Børs. We study the effect of M&A announcements and its characteristics on the wealth of acquiring company's shareholders by investigating the value created or destroyed through increased or decreased share prices. As investors will trade on the information available in a semi-strong efficient market and what they predict

will happen in the future, there are several interesting factors that potentially could affect the stock prices when announcing M&As.

We examine the variation of the dependent variable CAR by controlling for independent variables defined by different characteristics of the deal, target -and acquiring company. This allows us to understand how different characteristics of the M&A announcement itself affect the acquiring company's stocks prices, as well as controlling for variables capturing the investor's expectations. These findings can be of particular interest for managers as they can be useful for further decision-making as they give a better understanding of the market's perception of M&A announcements.

Our findings suggest that overall, the acquiring firm's stockholders do earn a positive CAR over the defined event windows. The results contradict the strong form of the efficient market hypothesis, which states that investors cannot obtain AR, but do however support the market being semi-strong efficient. The mean difference tests of the different characteristics do not yield many significant results, indicating that the data is both noisy and/or that the variables are not very good predictors for CAR. It is therefore hard to conclude how the different aspects of an M&A announcement affect the acquiring company's stock price. This implies that managers cannot obviously gain from strategically timing M&A announcements or focusing on particular characteristics of the announcement. However, in the mean difference test between *Stock* and *Cash*, we find statistically significant results which indicates that *Stock* gives a higher CAAR than *Cash*. This result contradicts prior literature about the market reacting negatively to stock payment as it is interpreted as a signal of the company being overvalued. Thus, stock as method of payment does not necessarily send a bad signal about the management's view of the company value. However, in the multivariate tests we were unable to show that this result is robust to all

controls. In the subsample of private deals under the method of payment, we find similar results to the mean difference test, which is consistent with the prior literature by Fuller et al. (2002) who state that acquiring firms obtain even larger returns when acquiring private targets. They further state that this can be a result of tax considerations and monitoring benefits.

For further research we suggest including a wider time horizon in order to obtain a higher number of observations to potentially increase the statistical power of our tests. Additionally, in today's globalized world with rapid growth within technological changes, it would be interesting to further study the M&A announcement effects focusing on tech-companies and traditional companies with innovative technologies as targets. Further, it can be interesting to look at the wider Scandinavian market, as this will increase the number of observations, and the countries within Scandinavia are both unique but quite similar as they include some of the wealthiest and most progressive countries when it comes to adapting and using new technology.

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APPENDICES

A APPENDIX

Small vs. Large Acquirers

	Small	Large
Cash	28	72
Shares	36	10
Combination Payment	45	27
Monday	27	23
Friday	14	21
Related	46	51
Unrelated	63	57
Domestic	58	55
Foreign	51	53
Total	109	109

This table shows the distribution of deal characteristics across firm size, where firm size is the upper and lower 50th percentile of the acquirer's market capitalization.

B APPENDIX

	Cash	Shares	Monday	Friday	Public	Domestic	Related	Large	LN(DV)	Tobin'sQ	Leverage	Acq.Stake	LN(MC)	LNAssets
Cash	1.0000													
Shares	-0.4648	1.0000												
Monday	0.0995	0.0186	1.000											
Friday	0.0672	-0.0772	-0.2514	1.0000										
Public	0.1499	-0.0185	-0.0115	0.1827	1.0000									
Domestic	0.0164	0.1009	0.0129	0.0888	0.0424	1.0000								
Related	0.1899	-0.0261	0.0059	0.1114	0.0806	-0.1260	1.0000							
Large	0.4131	-0.2565	0.0064	0.0736	0.3171	-0.0452	0.0987	1.000						
LN(DV)	0.2085	-0.0344	0.0442	0.0639	0.2894	-0.0916	0.1827	0.5607	1.0000					
Tobin'sQ	-0.1563	-0.0215	-0.0001	-0.0977	-0.0775	-0.1432	0.0808	0.0259	-0.0509	1.0000				
Leverage	0.0073	0.0917	0.0536	-0.0161	0.0143	0.1362	0.2238	0.0241	0.1878	-0.1854	1.0000			
Acq.Stake	-0.3563	0.1709	0.0972	-0.0979	-0.2796	-0.1490	-0.0412	-0.3372	0.1315	0.1147	0.0560	1.0000		
Ln(MC)	0.4444	-0.2657	0.0243	0.0688	0.2751	-0.1099	0.2145	0.8361	0.6071	0.0537	0.0036	-0.2321	1.0000	
LnAssets	0.4218	-0.1688	0.0337	0.0843	0.2767	0.089	0.2899	0.7120	0.6095	-0.2743	0.4108	-0.2291	0.8102	1.0000

This table shows the correlation between all the independent variables. The variables describe the method of payment (Cash) (Shares), the calendar effect (Monday) (Friday), the listing status (Public), cross-border deals (Domestic), merger relatedness (Related), size (Lagre), the logarithm of deal value (LN(DV)), the acquiring firm's Tobins' Q ratio (Tobin'sQ), the acquiring firm's debt-to-equity ratio (Leverage), the acquired stake (Acq.Stake), the logarithmic value of the acquiring firm's market capitalization (LN(MC)) and the logarithmic value of the acquiring firm's assets (LN(Assets)).

C APPENDIX

	$CAR_{-2,2}$	$CAR_{-1,1}$
Cash	0.0081	0.0083
	(0.671)	(0.679)
Stocks	0.0495	0.0599
	(0.194)	(0.146)
Monday	-0.0148	-0.0256
	(0.389)	(0.128)
Friday	-0.0127	-0.0034
	(0.538)	(0.856)
Public	-0.0130	-0.0075
	(0.417)	(0.595)
Cross-border	-0.0036	-0.0054
	(0.823)	(0.740)
Unrelated	0.0171	0.0071
	(0.333)	(0.634)
Large	-0.0245	0.0301
	(0.486)	(0.420)
LNDealValue	0.0055	-0.0016
	(0.312)	(0.759)
TobinsQ	0.0039	0.0038
	(0.439)	(0.463)
Leverage	0.0000	0.0000
	(0.505)	(0.595)
Acquiredstake	0.0005	0.0005
	(0.109)	(0.077*)
LnMrktCap	-0.0194	-0.0163
	(0.105)	(0.201)
_cons	-0.0379	0.0009
	(0.557)	(0.985)
N	186	186
R-Squared	0.1103	0.1000

This table reports the results of a multivariate regression on two event windows, with the dependent variables $CAR_{-1,1}$ and $CAR_{-2,2}$. The independent dummy variables are included where *Cash* and *Stocks* control for the method of payment, *Monday* and *Friday* the calendar effects, *Cross-border* the country specifics of the targeting firm, *Unrelated* the relatedness of the target companies, while *Large* is added to control for the acquiring companies' size. Additionally, the following control variables are added; *LNDealValue*, the size of the deal, *TobinsQ*, the Tobins'Q of the acquierer, *Leverage* the acquirer companies debt to equity ratio, *AcquiredStake* the stake acquired and the *LnMrktCap* the acquiring firms' market capitalization. Additionally, the table also shows the number of observations, R-squared and the p-values in the parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.