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Evaluating the Performance of Scandinavian Mergers and Acquisitions

Evidence from Divestitures

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ABSTRACT

In this thesis, we compile a data set of divestments based on almost 200 mergers and acquisitions in the Scandinavian countries between 2000 and 2011 and then use the data set to assess and classify the long-term success of the original mergers and acquisitions. By the end of 2019, we document that more than 25% of the acquirers had divested the original merger or acquisition. Of these, 31% is considered to be successful divestitures. In the second part of this thesis, we use the findings on long-term success to evaluate market expectations about firm performance at the time of merger and acquisitions announcement. By applying traditional performance measures such as abnormal returns, cumulative abnormal returns, and Tobin's Q, we find that the acquirer's returns are significantly lower for those firms which subsequently divest and are classified as unsuccessful than for the divestments which we classify as successful and for M&As which are not divested. The overall findings suggest that many of the original mergers and acquisitions should have been avoided in the first place.

Keywords: Divestitures; Mergers; Acquisitions; Performance, Abnormal Returns

Preface

The Master's thesis was completed as part of the master's degree in Business Administration at the Oslo Metropolitan University. The dissertation is part of the compulsory education plan and amounts to 30 credits.

The purpose of this dissertation was to evaluate how well major Scandinavian mergers and acquisitions performed based on the frequency of subsequent divestitures and to see whether the market was able to predict long-term success at the time of the announcement. The subject of mergers and acquisitions has been of interest to both of us, and we would like to continue exploring this vast field in our future careers. It was, therefore, both interesting and rewarding to delve into more detail on this lesser-known side of mergers and acquisitions.

We would like to thank our tutor and supervisor, Jacopo Bizzotto, for his valuable support and insight throughout this informative but challenging semester.

Oslo, 15.06.2020

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I. INTRODUCTION

THE NUMBER AND VALUE OF ACQUISITIONS have increased like never before, and so have divestitures. In 2015, Western Europe completed more than 14,000 mergers and acquisitions (M&As), with a total value of over $1211 billion, more than five times higher than in 1990.[1] Although M&As is a general term that refers to business or asset consolidation, it also encompasses divestitures. Divestitures are the most common result of management's decision to stop operating a business entity because they are not part of the core competence. In 2006, divestitures made up 32% of all M&A transactions, somewhat below the annual average of 38% over the whole 1970–2006 period (Eckbo and Thorburn, 2009). Since then, the large number of divestments does not seem to have decreased: corporate divestitures accounted for almost half of the total value of the 2015 global M&A activity.[2]

Just as divorce is commonly perceived as a "failed" marriage, divestitures can be seen as a declaration of a failed M&A strategy. In an M&A performance study of 33 large conglomerate mergers, Porter (1987) found that more than 50% were subsequently divested and suggested that, in the long run, all the mergers in his sample would ultimately be divested. Ravenscraft and Scherer (1987) found that, between 1974 and 1977, 33% of M&As by major US companies were subsequently divested. Both studies interpret the high frequency of divestments as evidence of unsuccessful M&A strategies that ultimately destroy value.

Not all divestitures take place for the same reason or produce equivalent results. Kaplan and Weisbach (1992), who studied a sample of large acquisitions completed between 1971 and 1982, found that almost 44% were subsequently divested. They argued that the divested acquisitions that were improved during the holding period, or those that once provided synergy but no longer did, were not necessarily failures. In addition, Fluck and Lynch (1999) challenge the views of Porter (1987) and argue that corporate mergers can be seen as a technology that provides financing for moderately profitable ventures that would otherwise be rejected by investors. As productivity increases, the synergy of financing ceases and, as a result, the market interprets divestment decisions as positive news.

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[1] IMAA - Mergers and Acquisitions Statistics
[2] Boston Consulting Group - Masters of the Corporate Portfolio

The first research question in this thesis is to what extent major M&As in Denmark, Norway, and Sweden (Scandinavia) between 2000 and 2011 were subsequently divested, and what percentage of these ultimately represent failed acquisition strategies. We build a database of divestments and classify them as either successful or unsuccessful using cited reasons, (deflated) sale price, capital gain, and operating results. While there are differences in the results we obtained from each method, the most reliable estimate we could make is that 31% of the divestments are not failed M&A strategies, while 69% of the divestments were classified as unsuccessful. This estimate shows that many divestments differ considerably from divorces. While some may see divestments as a failure, others may see it as an indication that the firm is ready to move to a new level of growth.

In the second part of the thesis, we use this measure to ask another question: is the immediate market expectation about firm performance of the M&As a good predictor of the long-term success of the M&As? We find that, after checking for a host of observable characteristics, negative cumulative abnormal return (CAR) at the time of the M&As are correlated with a higher probability that a future divestment will be unsuccessful. The results appear to suggest that some of the M&As in our sample take place even though there is public information available at the time of the M&A that gives strong indications that they are not in line with a good business strategy. We, therefore, provide a speculative interpretation of the findings in terms of potential CEO overconfidence and mismanagement.

Going into more detail on our methodology, we begin the first part of our analysis by identifying and classifying each of the original M&As. The history of each original M&A is collected manually from the stock exchange announcement to the end of 2019. This helps to identify those acquirers who subsequently divested all recognized assets or product lines of the target. By manually searching for duplicate company names in the M&A Database, reading annual reports, and using financial news sources, we compile a data set and find that by the end of 2019, 52 (26.5%) of the original M&As were subsequently divested. Of these, seven were part of spin-offs or carve-outs, while the remaining 45 were either acquired or merged with another firm.

Divestments are classified as either successful or unsuccessful by comparing the reason given by the acquirer for both the original M&As and the divestment, and the market-deflated sale price compared to the purchase price. We also report, where

appropriate, the acquirer capital gains on sale and the operating results of the divested unit.

Of the 52 M&As subsequently divested, nine were classified as unsuccessful based on either contradictory reason for M&A and divestment, or poor performance. While the results suggest that the divestment strategy of the original M&As is favourable for long-term success in some cases, our second primary approach finds that a more significant portion of the divested M&As falls into the category of unsuccessful M&A strategies. By deflating the sale price of the divestments for the average return of the Scandinavian stock markets over the same period, the fraction of the unsuccessful divestments rose to 36 (69.%). Of those subsequently divested, the median M&A in our sample was divested at 36.3% of the purchase price when market return was taken into account. We also find that the average M&A in our sample would be better off in most years by investing in the market rather than initiating M&As.

After identifying and classifying the divestments, we use these findings to ask another question: is immediate market expectations about firm performance a good predictor of the long-term success of M&As? By following the event-study methods of MacKay (1997) and Kliger & Gurevich (2014), we begin the second part of this thesis by measuring any immediate abnormal returns (ARs) resulting from the announcement of the M&As. For all the M&As in our sample, we find positive acquirer CARs (1.8%) around the M&A announcement. We also find evidence of higher acquirer CARs of those who subsequently did not divest (2.1%), indicating that the market expectations about firm performance for these were higher at the time of M&A announcement. In addition, we find that the acquirer returns are significantly lower for those firms which subsequently divest and are classified as unsuccessful than for the divestments which we classify as successful and for M&As which are not divested. Moreover, we estimate the ARs and CARs for the target firms listed, either directly or indirectly through the top parent. We find that the target CARs are generally more positive than the returns of the acquirer, in line with previous views that the ability of the acquirer to operate the target does not affect market reactions.

Next, we use a multivariate regression framework to compare the acquirer ARs and CARs, controlling for different characteristics that may affect the returns. Using the acquirer CARs from our main event window [-5,5] as the dependent variable, we find that the CARs to acquirers involved in divestments classified as unsuccessful are 4.2% lower than CARs of non-divested acquirers or acquirers who have divested the target

successfully. We also analyze subsamples from the three countries and find strong evidence that unsuccessful Norwegian divestments (-9.4%) were associated with much lower market expectations than Swedish (-2.8%) and Danish (-5.7%) divestments. We do not find any evidence to support that the three deal characteristics - Mergers (acquisition of assets), Financial M&As (strategic M&As) or cross-border M&As (domestic M&As) - have any influence on the acquirer CARs in our sample. Based on these results, we further analyze the relationship between the acquirer CARs and the measure of success and find evidence that the market reacts to fundamentals and has significant predictive capabilities; a 5% decrease in acquirer CAR [-5,5] at the time of the announcement is strongly associated with an increase of between 12.63% and 74.41% in the likelihood of a potential divestment being unsuccessful.

Additionally, we argue that, given that the market has significant predictive capabilities, CEOs and managers of companies should have at least the same, reasonably available information. Our results support the view that management capabilities play a role in the long-term success of the M&As in our sample. Acquirers in successful divestments have higher values of Tobin's Q than acquirers in unsuccessful divestments, consistent with the view that higher q-ratio firms correlate with superior long-term performance.

Finally, we examine whether the firm-specific fluctuations have any impact on the earnings of the acquirers. By averaging the CAARs, we do not find a change in the main event window as opposed to the CARs. This implies that there is little random noise affecting the return of the M&A announcements. Also, the ex-ante (before the M&A announcement) CARs show very moderate run-ups across the subsamples, indicating that no inside-trade issue or information leakage by the acquirers studied.

II. LITERATURE REVIEW

This chapter is divided into three sub-sections. The first section sets out some general background and characteristics of M&As and divestments. The second and third subsection examines divestment literature and short-term M&A performance literature to take a stand-alone look at some of the findings already identified in these fields. This is consistent with the overall structure of the thesis.

A. Background

There are probably endless motivations for M&A. However, although the rationale may vary from one M&A to another, the primary incentive for most M&As is to increase the value of the newly formed company (Brigham and Ehrhardt, 2002). The most common ways for a company to achieve this is through the acquisition of new digital capabilities, next-generation technology, the expansion of new geographic markets and the expansion of new industries.[3]

The terms 'merger' and 'acquisition' are frequently used interchangeably, even though there are distinct differences between them. According to Joy (2018), a merger is a combination of two companies in which only one company remains, either the acquirer or the target, while the other company is dissolved after the transaction. In the case of a merger, the acquirer assumes the assets and liabilities of the merged company. In addition, although the acquirer may be a substantially different organization after the merger, it retains its original identity. Acquisition occurs when one company takes a controlling interest in another company, another company's legal subsidiary, or another company's selected assets, such as product lines or properties (Joy, 2018).

When a company acquires more than 50 % of the target company's shares, the transaction is referred to as majority M&A. Majority M&A also means that the acquirer can make decisions without the need for approval by the shareholders of the acquired company. Minority M&A, on the other hand, is where the company is engaged in the acquisition of a minority shareholding.

It is common to divide M&As into two types depending on the bidder: Strategic and financial bidders. Strategic M&As is characterized by the fact that the target has specialized knowledge of a specific market or related products and services that

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[3] Extracted from Figure 2 of *What Typically Triggers an M&A Event for Your Company?* Accenture.com (2018)

directly add value to the bidder, often referred to as synergies. The main objective of strategic bidders is ultimately to integrate the acquired company fully and to focus on long-term growth for the entire company (Joy, 2018). Financial M&As is characterized by the bidder offering little or no inherent value to the transaction, i.e. vertical transactions where the bidder and the target are not in the same industry (Joy, 2018). This type of M&A is often seen in the private equity sector and, unlike strategic bidders, divestment is a natural end goal for the acquiring company.

In a study comparing cross-border and domestic M&As, Moeller and Schlingemann (2005) found that the market response to cross-border M&As was significantly lower compared to the domestic M&As. Cross-border M&As are commonly divided either inward or outward. Inward cross-border M&As occurs when a foreign firm acquires a domestic firm, in whole or in part, and the movement of capital by selling moves to the country of origin. Outward is the opposite, when a domestic acquirer purchases all or parts of a foreign target, and capital movements are outward.

Furthermore, M&As is found to be cyclical and do not occur evenly over time. This cycle is commonly referred to as merger waves. Merger waves are defined as a sequence of periods (two or more) in which the probability of a merger occurring is higher than the unconditional expected probability of a merger occurring (Rhodes-Kropf and Viswanathan, 2004). Before 2000, five different periods had been recognized as mergers waves. More recently, the 6th wave started in 2003 and ended gradually in 2008, while many scholars believe that the 7th wave started in 2011 and continues to exist at this time (pre-Covid19 pandemic, 2020).[4]

Although M&As is a general term for the purchase of companies or assets, it also includes divestments which refer to the sale or disposal of a firm or an asset. While M&As and divestitures are similar in that they are often different sides of the same deal and are both key strategies used by corporations to maximize shareholder value, they also differ in many respects (Joy, 2018). First, divestments represent the expected partial selling of tangible or intangible assets of a business unit or segment by the sellers (Clubb and Stouraitis, 2002). Secondly, divestments appear to be less public than acquisitions and markets with low liquidity (Laamanen *et al.*, 2014). Markides and Singh (1997) argue that one of the reasons for lower publicity is that divestments are linked by companies or their CEOs to past negative performance. As a result,

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[4] See, for example Dieudonne et al., 2014; Ching, 2019.

managers usually look for private bidders to hold a low profile. In addition, investor disclosure regulations for divestments are not as comprehensive as for M&As (Bauer, 2006).

There are several types of divestments, all of which result in a partial detachment of the assets or operations of the firm. Each type has its own characteristics and challenges, and historically, there have been two main types of divestments (Joy, 2018). Sell-off means that a company divests a division, unit, or asset to a bidder as a stand-alone entity. The main challenges are the division of shared overhead costs, brands and patents and the change in management. Spin-off or Carve-outs means that the company divests part of its operations by replacing existing shares with classes of shares representing a new, independent operation. Ensuring that the divested entity can function as a self-governing entity is considered to be the main challenge. (Joy, 2018) In addition, the less common types of divestments include spin-merge (spin-off followed by a merger) asset trades, management buy-outs and total liquidation, i.e. bankruptcies.

As with M&As, there are endless motives for divestments. However, Joy (2018) states that *"the overall objective of a divestment or separation is to rebalance the parent company's business portfolio in order to allow the parent company to grow or reduce risk exposure."* Also, he has categorized the most common reasons for divestment. These are generally in line with the views of other scholars.

The first reason for divestments is to focus on the core business, implying over-diversification (Peruffo, 2018). This may, for example, be a company that needs to be more competitive in its primary market and is also referred to as the most common reason for a company to engage in divesting over the last four years.[5] The second reason, as found in several studies, is to raise capital (see, for example, Borisova *et al.*, 2013; Vidal and Mitchell, 2015). Divesting a business unit, for example, generates capital that a firm can use in areas where higher returns can be achieved. Furthermore, a business unit that may not be of value to one firm, and even create negative synergy, may perform better under the umbrella of another firm whose core competence is in line with that of the business unit targeted for divestment (Cohen, 2013). Finally, regulations or financial constraints may require a firm to divest (Borisova *et al.*, 2013). For example, a firm operating in an industry with little to no competition may need to

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[5] Thomson, Russel, Susan Dettmar, and Mark Garay. 2016-2020. "*The State of the Deal – M&A Trends"*

divest/separate itself from a business unit in order to proceed with an M&A transaction that would further limit competition in the industry.

B. Divestitures

As discussed above, divestitures are commonly seen as the other side of M&As in corporate restructuring studies. To the best of our knowledge, there are minimal in-depth studies on the success of divestitures in Scandinavia, consistent with the fact that divestitures are far less researched than M&As (Brauer, 2006; Buchholtz *et al.*, 1999). The previous studies presented below, which are similar to our approach, are mainly based on the US market and use a sample of M&As from a different era of time. Therefore, here and throughout this thesis, we note that our results may not be directly comparable to those of the studies discussed below

Past divestiture studies include Porter's (1987) study of 33 US conglomerate mergers. He suggests that, in the long run, all mergers will eventually be divested. In addition, Porter points out that, on average, corporations have divested more than 50% of their mergers into existing markets and argues that divestments are corrective actions taken by firms to reverse failed M&As. In a study of 436 major US divestments between 1974 and 1977, Ravenscraft and Scherer (1987) found that poor performance was the dominant reason for divestment. Both of these find that financial M&As are more likely to be subsequently divested and argue that these are worse investments than related M&As.

Examining the same mergers as Porter (1987), Weston (1989) criticizes Porters' views. Weston argues that the ongoing consolidation of the merged firms has also resulted in positive, abnormal long-term returns for the acquirers involved in the divestments. Fluck and Lynch (1999) also challenge Porter 's views in their study of subsequently dissolved conglomerate mergers. They see the diversification of mergers as a form of technology that enables firms to finance marginally profitable, short-term projects that would otherwise be rejected by investors as stand-alone projects due to agency issues. They argue that, in many situations, divestment is interpreted by the market as good news because, over the holding period, the financing synergy ends, and the acquirer divests assets in order to avoid coordination costs.

Maksimovic and Phillips (2001) examine the effect of asset sales on plant-level productivity using data from the U.S. Bureau of Census. They find that the frequency of divestments correlates negatively with recessions, and that frequency increases

again when the business cycle recovers. They conclude that most divestments result in productivity gains by redeploying assets from relatively low-productivity vendors to higher-capacity vendors.

Kaplan and Weisbach (1992) also expanded on the studies of Ravenscraft & Scherer and Porter, but with a different perspective. Their intuition was that not all divestments were failed acquisitions. Approximately 44% of their sample, consisting of large US acquisitions between 1971 and 1982, was subsequently divested. They assess the extent to which divestments in their sample represented failed acquisitions and based on stock market reactions, accounting loss, selling price and the reported reason for divestment, find that only 34% to 50% of the divested acquisitions were unsuccessful. In addition, they also support the previous views that the divestment rate is significantly higher (60.2%) when the acquirer and target are operating in unrelated industries. Moreover, Kaplan and Weisbach (1992) argue that, on average, acquisitions were perceived as bad investments when announced (average acquirer return of-1.5% on the day of M&A announcement), and that the acquirer returns on the day of announcement were lower for those classified as non-successful in the long term.

C. M&A Short-term Performance

Within the financial sector and academic M&A research, the most common method for analyzing and assessing M&A performance is an event study of short-term financial performance (Zollo and Meier, 2008). The technique was first developed by Fama *et al.* (1969) who tried to explore the impact of a stock split on stock returns, but the approach could be extended to a wide range of cases.

Despite the abundance of literature on the short-term effects of M&A using the event study approach (ESA), the empirical evidence of the returns to the shareholders of the acquiring firm is not conclusive. Many studies find evidence of significant negative short-term returns (see, for example, Goergen & Renneboog, 2004; Doukas *et al.*, 2002), while others find evidence of significant positive short-term returns (see, for example, Beitel *et al.*, 2004; Eckbo & Thorburn, 2000). Furthermore, Zollo and Meyer (2008) argue that although short-term event studies are useful, short-term window event studies measure something different from actual acquisition performance. They find that short-term window event studies instead measure the collective cognitive heuristic, i.e. the overall market sentiment. They also strongly recommend future

scholars who use short-term window event studies to refer to their dependent variable as *"market expectation about firm performance",* rather than M&A performance.

Mitchell and Lehn (1990) reviewed a sample of companies that made substantial acquisitions from 1982 to 1986. They found that firms receiving hostile takeover bids are more likely to have made acquisitions to which the market has responded negatively and that acquisitions subsequently divested are strongly correlated with significant negative ARs for the acquirer at the time of the original acquisition.

Allen *et al.* (1995) indicate that an abnormal divestment return is inversely related to the ARs of previous acquisitions announcements. They found a significant negative relationship between the divestment and the announcement of a previous acquisition with a sample of 40 divestments resulting from acquisitions between 1962 and 1991. Their interpretation of this finding is that investors react more positively to the divestment of units that were perceived negatively when acquired. In other words, the divestments correct what the market saw as an error. In addition, John and Ofek (1995) find that the announcement returns are higher if the acquirer has some kind of competitive advantage in managing the assets, i.e. bidder operates in the same industry as the target.

Mulherin and Boone (2000) use a sample of 1305 US companies from 1990 to 1999 to compare the acquisition and divestment activities. They find that 18% of companies engaged in at least one major divestment between 1990 and 1999 and report that both the M&As and divestments create value by measuring market reactions. In contrast to Kaplan and Weisbach (1992), they report that the return on M&A announcements for the original acquirers is positive, with an average of 3.5%. Fogh (2009) conducted a more recent study on Danish sell-offs between 2002 and 2009 and found positive returns for the acquirer on the date of announcement of the original M&As. However, she argues that the positive impact on the announcement day vanished during the 30-day post-announcement phase.

Finally, Lang et al. 1989 demonstrated that the acquirer ARs had a positive relationship with Tobin 's Q of the acquirer. They interpret the q-ratio as an increasing function of the quality of a firm's current and anticipated projects under existing management. Their findings are also supported by Servaes (1991), who show that high acquirers with high q-ratio have higher ARs around the time of public-firm acquisitions. Datta *et al.* (2003) expand on these studies when assessing the efficiency of asset reallocation in divestments. They use the q-ratio as a measure for the

management's ability to handle the assets and find that in transactions where the bidder has a relatively high q-ratio, and the seller has a relatively low q-ratio, the announcement returns are strongest, likely because the assets are moved to a better-managed company.

III. Research Design

Chapter III consists of six sections. The first two sections provide general information on how the sample was obtained and selected. The next three sections elaborate in depth on the methodology used to identify divestments and to measure market expectations. Finally, we elaborate on the statistical processing of the data.

A. Data Sources

Our initial sample consists of Scandinavian M&As of public companies, private companies and subsidiaries that took place between 2000 and 2011. Information and data on the M&A transactions are exported from the integrated application SDC M&A Database (SDC) of Refintiv's (formerly Thomson Reuters) Eikon over the period 2000 - 2019. For ease of data collection and scope of coverage, SDC offers a premium database for M&A researchers, as evidenced by its use in several published papers the last decade and is likely the best database from 1984 onwards (Barnes *et al.*, 2014).

For each M&A, SDC provides data or information on deal status (completed, pending, withdrawn), M&A stock exchange announcement date, deal-size in US$, the percentage acquired, industry sector and, for both acquirer and target, the top parent and country of origin. In addition, the exported data from SDC provides information on the public status of the target, i.e. whether the target was listed on a public stock exchange at that time, and deal purpose as reported by the acquirer if reported. Unfortunately, however, the database does not follow the subsequent history of the M&As and therefore does not indicate whether the M&As were later divested.

We use Refintiv DataStream to obtain historical data on stock prices, market value, total capital, total assets, and total liabilities for both original acquirer and targets. We also obtain data on market value plus preferred stock of the acquirers. The Swedish Nasdaq Data Analytics Team has helped provide data on a few transactions that had missing or nonexistent data on DataStream.

B. Sample Selection

In order to refine our sample, several restrictions have been imposed. Firstly, as both of our research questions relate to the assessment of divestments in the Scandinavian market, the top parent of the acquirer must be Norwegian, Swedish, or Danish. Because we actively use the acquirers' Annual Reports and financial news sources in the acquirer country of origin, we exclude other Nordic countries due to difficulties in

obtaining information on the ex-post (after the M&A announcement) history and language barriers. Applying this restriction results in 37 622 Scandinavian M&As in the SDC Database. Secondly, the M&As must have status as competed, reducing the sample to 30 863 observations. Thirdly, the M&As must be completed between 2000 – 2011. The reason for the cut-off year in 2011 is that it gives the original M&As at least eight years to potentially be divested by the owner (2011 - 2019). This restriction reduces the sample to 14 716 observations. Fourthly, M&As are required to be a majority M&A, i.e. the percentage of shares held by the acquirer after the transaction (i.e. ownership) exceeds 50% in order to ensure that the acquirer has control over the target firm, reducing the number of observations to 10,190. If a company acquires less than 50 % of the shares, the acquirer will not be able to make decisions on the newly acquired assets without the approval of the target shareholders and will ultimately not be entirely responsible for the performance of the target.

As noted above, the SDC M&A database does not provide specific information on the subsequent history of M&As, and we, therefore, need to collect this information manually. The following restrictions were imposed in order to facilitate and ensure consistency in the manual collection of the subsequent history.

We exclude all M&As with a deal size of less than $100 million in 2019 dollars, primarily to reduce the number of transactions in the sample, making the post-acquisition follow-up process less time-consuming. Moreover, given that the size of the deals is quite substantial in Scandinavian terms, this restriction makes it easier to find historical information, even from the early stages of the internet. The sixth restriction reduces the sample to a total of 499 observations. Seventhly, in order to analyze the market response to the M&As, we require that the original acquirer be publicly traded at the time of the announcement and thus exclude all private acquirers. In addition, 14 observations were excluded due to lack of historical data on stock prices, leaving us with 233 observations. Eighthly, acquisitions of real estate portfolios are excluded due to difficulties in obtaining details of what the portfolios hold, omitting 22 observations from the sample. Finally, in order to reduce the risk of random noise resulting from notification of return measures, transactions with a relative size of less than 1% fifty trading days before the date of M&A announcement are omitted from the sample. The relative size of the acquisition is measured as the US$ deal-size of the transaction (excluding costs and fees) as publicly reported,

divided by the acquirer`s market capitalization 50 days prior to the M&A stock exchange announcement date of the original M&A, omitting 15 observations.

Table I

Number of Scandinavian Mergers, Acquisitions and Divestitures by Year [6]

Year	Number of Scandinavian M&As > 100m USD	Number of Original M&As Divested	Percentage Divested
2000	32	10	30.3%
2001	11	6	50.0%
2002	9	2	22.2%
2003	8	0	0.0%
2004	13	4	30.8%
2005	21	5	23.8%
2006	21	7	33.3%
2007	29	7	24.1%
2008	15	5	33.3%
2009	6	0	0.0%
2010	13	4	30.8%
2011	18	2	11.1%
TOTAL	**196**	**52**	**26.5%**

Table I summarizes our final sample, which consists of 196 unique Scandinavian M&As that took place between 2000 and 2011. The deal size of the 196 transactions in our sample amounted to a total of $141,67 billion in 2019 dollars. This translates into an average deal size of $715,49 million and varies considerably across sectors, ranging from $124,17 million in Advertising and Marketing to $2758,06 million in Metals and Mining. The final sample consists of 103 are acquisitions of assets, while 92 are mergers. The target firms in the sample consist of three joint ventures, 38 private firms, 52 public companies and 105 subsidiaries or divisions of which 21 have publicly traded top parents.

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[6] Table I shows the correct number of M&As and divestments for the first part of this thesis (Chapter IV). However, in the second part of this thesis, four observations were omitted due to insufficient data. See Appendix, section B for an alternative version of Table I and Table IV.

C.   Empirical Method: Identifying Divestitures

After refining our sample with the limitations set out in Section B, the following section presents a comprehensive strategy for identifying the subsequent history of each transaction. The findings are presented and discussed in Chapter IV.

For each of the 196 M&As, the following method was used to identify the potential partial or fully divested targets in our sample. First, we searched for duplicate target names by exporting a data set of all M&As with only one limitation, that the target was Scandinavian (instead of the acquirer in section B). If the name of the company name in the data set with all Scandinavian M&As matches the target name in our final sample from section B, we could classify that observation as subsequently divested. However, the names of the target firms have generally been changed after they have been acquired. For example, in our sample, Hag ASA was acquired by Ratos AB in 2007 and sold as SB Seating in 2014 and was therefore not identified using this method. As a result, only a small fraction (14, or 27%) of the classified divestments in the final sample was identified using this method.

Since we had previously known that several of the observations in addition to those identified using the first method had subsequently been divested, we carried out a thorough manual inspection of the remaining 189 M&As in the sample. We started by using conventional search engines (Google) to look up the target company names in our sample to see if we found any indication that the target was no longer owned by the original acquirer. A typical example of this process is the divestment of Provida A/S, acquired initially by Merkantildata ASA. From the initial search, we found an article on NewsWeb suggesting that Provida had potentially been divested.[7] From there, we used the annual report found on the home page of Merkantildata in order to confirm our suspicions further.[8] Following this method, for each of the 189 transactions not included in the first method, we were able to identify another 52 additional targets that could potentially be classified as divested.

By applying these two approaches, a total of 65 observations were identified for further consideration. Although the methods were time-consuming, they provided confidence that we did not miss any potential divestments.

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[7] NewsWeb is the official newsroom for stock exchange notices on Oslo Stock Exchange. Tietoenator Kjoper Ementor Financial Systems

[8] Annual Report Merkantildata ASA 2001

After examining the M&A activity for each of the original acquirers, several criteria were imposed on the sample to classify the target as divested, similar to those of Kaplan and Weisbach (1992). First, we only classify the M&A as divested if the acquirer divests all assets and product lines of the target. In our sample, 13 of the observations divested parts of the original target and were therefore classified as non-divested. Secondly, a M&A tearsheet of the divestment is required to document that the divestment has taken place correctly. Tearsheets are a public document that provides a one-sheet description of all the details of the agreement, such as the date, price, the parties involved. The tearsheets are exported from SDC. Third, in 18 of the observations, the original acquirer still owns the target acquired but is subsequently acquired on its own. For example, Capio AB completed three acquisitions between 2000 and 2011. In 2007, Capio AB got acquired by Ramsey GdS[9]. For these observations, we shifted our focus to the M&A activities of the new owner and have classified the target as divested if the new owner separates the original acquirer 's assets from the target or if the new owner entirely separates the assets of the original target from the original acquirer. Finally, in seven of the original transactions, spin-offs or the carve-outs led to a split between the acquirer and the target. Even if the original acquirers maintain an interest in these targets, the observations are classified as divested.

We believe that our thorough identification methods have captured all the divestment that took place as of 2019. However, some of the acquirers still have targets that will undoubtedly be divested after the end of our research period. It is therefore essential to note that all our estimates and future analyzes will underestimate the number of divestitures.

D. Empirical method: Event Study Methodology

D1. Choices in Relation to The Event Study

To answer our second research question, we follow the ESA as described by MacKinlay (1997) and Kliger & Gurevich (2014) to evaluate the returns for both acquirers and the targets that occur in relation to the stock exchange announcement of the M&As. This subsection offers a brief overview of the choices made about the methodology of the ESA, which is discussed in-depth in the next subsections.

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[9] Capio.com/en/about/ramsay-generale-de-sante--new-owner-of-capio/

The event date ($\tau = 0$) is the date on which the market becomes aware of the M&As and is defined as the date on which the M&As are announcement by each respective acquirer on their respective stock exchanges.

To capture the effect of the ex-ante and ex-post M&A stock exchange announcements, the main event window constitutes five trading days before the date of the event, the date of the event ($\tau = 0$), and five trading day after the date of the event. The interval amounts to eleven trading days. Since the market may react even more slowly, or potential leakage of information reached the market even earlier than anticipated in the main event window, we include three control event windows. By including control windows, we can see more precisely where the effect of M&As is affecting stock prices. Based on the [-5,5] interval, we proceed to the creation of two control windows with a smaller time interval: [0] and [-1,1]. We also create a control window that extends the number of trading days to a total of 21, [-10,10] to see if we can find any significant returns before the 5th day. [0], or event date, is merely information on ARs for the actual date of the stock exchange announcements of the M&As.
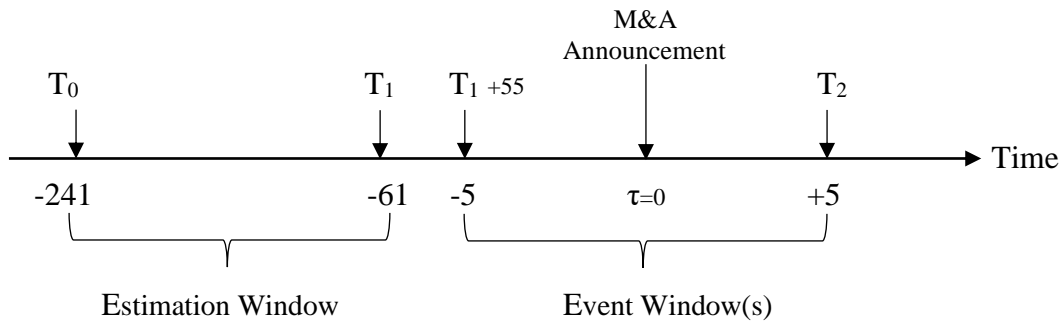
Figure 1: Timeline of the main event window in the Event Study

The Single-Benchmark Return Model, commonly known as the Market Model, was the preferred statistical model to estimate the normal returns (NRs) of each observation in our sample. The reasoning behind this choice was that empirical evidence shows that the model has a high level of explanatory power (Mackinlay,1997) and as alternative economic models such as the CAPM were found to deliver similar results (Kliger & Gurevich,2014). The marked model parameters αi and βi are estimated by ordinary least squares (OLS) regression for each event (i.e. M&A) using daily returns from days -241 to -61 relative to the M&A announcement. The estimation window of

180 trading days is shy of the recommended one calendar year of trading days (MacKinlay, 1997), but more than large enough to satisfy the assumption of variance in equation (10) as per Kliger & Gurevich (2014). The model was used to estimate the NRs of the events; this is equivalent to 192 individual market models for the acquirers, as well as 72 individual market models for the targets.

In this study, the market equals STOXX Europe 600's average return. The STOXX Europe 600 Index is derived from the Total Market Index of STOXX Europe (TMI) and is a subset of the STOXX Global 1800 Index. The index, with a fixed number of 600 securities, represents large, mid-, and small-capitalization companies across 17 developed European countries, including the Scandinavian countries in our sample.[10] There are several reasons for using STOXX 600 as a benchmark rather than a more Scandinavian specific benchmark such as OMX Nordic 40 or STOXX Nordic 30. The periods of these are perhaps the most prominent reason. We need a market index with historical data of at least 20 years. For example, OMX Nordic 40 was created at the end of 2006, after the start of our research period. In addition, Mark *et al.* (2018) argue that the benchmarks should be unbiased, i.e. absent from any event. As we analyze some of the largest companies in Scandinavia, many of the companies in our sample will also be represented in the Scandinavian specific indexes. In addition, these indexes contain very few securities, making them more vulnerable to potential events. Both of these implications can lead to bias in our analysis. We, therefore, use the broader STOXX Europe 600 with large-capitalization companies, which we argue will not be affected by events due to the number of companies. We also think that it is reasonable to assume that the large capitalization firms in our sample are comparable to other large capitalization firms in Europe.

Even though the ESA is widely used among previous studies, its approach also contains some weaknesses. Getting enough trading days is the most common problem, which often arises for small firms that are not traded frequently. Not getting enough trading days could lead to biased beta estimates when applying models for the return estimation and may be a problem when estimating the stock return movements for the targets as well as smaller subsamples. The potential problem with a limited number of observations will be further discussed when the findings are presented in Chapter V.

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[10] See FactSheet on Stoxx.com for more details on the index. Stoxx.com/Factsheets

Another limitation of the ESA is that it maintains a constant level of risk (Kliger & Gurevich, 2014). This risk may affect long-term testing and therefore, the risk-adjusted measurement of ARs (Kothari and Warner, 1997). Since we only apply an event window of up to 21 days, this is not relevant in this study and therefore will not affect the results.

D2. In-depth Event Study Methodology

The following subsections of D are purely technical and can be skipped if the reader is familiar with the methodology of event studies. All the necessary decisions taken in relation to the below ESA methodology are presented in subsection D1.

Measuring M&A performance has been the subject of research for several decades, and there are vast differences in approaches for defining and measuring M&A performance. As discussed in Chapter II, event studies are commonly used in financial literature to assess the impact of any economic or firm-specific events on stock price movements. We will conduct a short-term event study on our sample to analyze the market expectations about firm performance at the time of the M&A announcements.

The ESA is an empirical method of assessing the impact on the stock price of any economic or firm-specific event. Such events can involve transactions of any kind, such as financial reporting, stock splitting, dividend payment or, in our case, M&A announcements. Through the ESA, it is possible to quantify the value of an event and thus determine what effect the M&A announcements have on the share price of the parties involved. The value of the information that the market receives, given that the market considers the information, can be measured by looking at changes in the share price around the time of the announcement. For example, if significant changes in the share price are observed in the period prior to the stock exchange announcement, information on the event is likely to have leaked to the market in advance (Kliger & Gurevich, 2014).

The most critical assumption of the ESA is that it assumes market efficiency. The Efficient Market Hypothesis' (EMH) primary definition, as endorsed by Fama et al. (1969) and Fama (1970), is that security (stock) prices will adjust rapidly in efficient markets upon the arrival of new information. The definition has subsequently been somewhat updated, referring to a market as effective when the security prices represent all the information available at any given moment (Fama 1991). It is common to distinguish between weak, semi-strong and strong forms of market efficiency. The

difference between them is how much information the security (stock) prices reflect. In this thesis, we are mainly interested in analyzing the semi-strong form, which states that "*the security prices represent all information that is accessible to the public, including information embedded in previous prices*" (Fama *et al.,* 1969).

According to EMH, no investor will have the advantage of being able to predict the return on shares in perfect capital markets, since no one has any additional information that is not known to anyone else (Kliger and Gurevich, 2014). The M&A stock exchange announcement in our sample is to be regarded as new information for the market. Therefore, the market efficiency theory is relevant to predicting the effects of the new information. Theoretically, M&As announcements should, therefore, produce signal effects that cause a change in the market value of a firm. Hence, any ARs observed during the event will contradict the semi-strong form of EMH.

The efficiency may vary significantly from one market to another market due to different levels of analyst coverage and different amounts of investors (Fama, 1991). In addition, reporting requirements and access to accounting information will have an impact on the efficiency of the relevant market. The size of the companies also has an effect, as more prominent companies appear to have a higher coverage ratio in the same sector than smaller companies (Kliger and Gurevich, 2014).

Kliger & Gurevich (2014) divides the ESA into five components that are required to be performed in a distinct sequence: 1) Define the event at issue, estimation window and event window. 2) Model the reaction of the stock price. In general, this involves a model based on the expected return, which depends on the event. 3) Assess any ARs. This step includes the calculation of the residuals from the estimated share price model. 4) The organization and grouping of the obtained ARs. Residuals can be analyzed separately, but they have to be cumulated over time. 5) Interpretation of the results from 1-4

D3. Event, Estimation Window and Event Window

It is necessary to define the period from which the data material is retrieved, and therefore, we use the term "window" which refers to time delimitation. Since each event is independent of other events, even in time, we do not use an official start and end date for all the M&As we analyze, but a standard corresponding time interval (MacKinlay, 1997). The timing sequence of the ESA is illustrated in Figure 1.
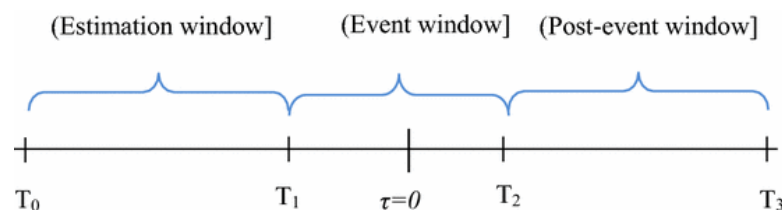
Figure 2: Timeline for An Event Study (MacKinlay, 1997)

In Figure 1, the event date is at $\tau = 0$ and is in the event window. The event is the date on which the market gains knowledge of the relevant new information. It is important to specify the event date as accurately as possible to obtain a precise measurement of the impact of the event. The event window constitutes the period over which the stock prices of the firms involved in the event is examined. Defining an event window that is larger than the duration event of interest is common, according to MacKinlay (1997). This enables the researcher to capture if the market participants obtain information before the stock exchange announcement, as well as to determine whether there is a quick vs a delayed price response.

The estimation window represents the period during which the parameters in the normal return model selected are estimated and is shown in Figure 1 before the event window. According to MacKinlay (1997), the most common choice of estimation window is the time before the event date. However, Kliger and Gurevich (2014) also notes that it is essential to avoid overlaps between the event window and the estimation window in order to prevent the event from affecting the estimation of NRs in the event window. The estimation window is an instrumental component of the ESA, as this is the period when the "normal" returns (NRs) are measured. NR can be defined as the realized returns by a specific company if no event occurs. Post-event window is used in long-term effects studies outside the scope of this thesis and will, therefore, not be further discussed.

D4. Models for Measuring Normal Returns

A model for NRs must be defined before we can estimate the abnormal performance associated with an event. There are mainly two categories of models for calculation of normal return: Economic Models and Statistical Models (MacKinlay 1997; Kliger & Gurevich, 2014).

MacKinlay (1997) distinguishes between two economic models: The Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). CAPM is based on the equilibrium theory in which the expected return is based on the co-variation of the

market portfolio. However, both MacKinlay (1997) and Kliger and Gurevich (2014) argues that the validity of the restrictions imposed on the market model by the CAPM is questionable. APT calculates the expected return by a linear combination of several risk factors, but previous literature has also shown that APT is not more potent than statistical models (Roll and Ross, 1980).

Statistical models are based on statistical assumptions concerning the behaviour of the stock return. These models assume that assets returns are jointly multivariate normal and independently distributed equally over time (MacKinlay, 1997). Commonly, two statistical models are used to estimate NRs: The Constant Mean Return Model and Market Model.

The constant mean return model referred to as the Naïve Model by Kliger and Gurevich (2014), is considered to be possibly the simplest statistical model. The model uses a constant return parameter and a disturbance term to define NRs. This model ignores even the most basic individual stock characteristics, such as differences in their degree of risk, and assumes instead that the NR is the return on the market as represented by a broad stock market index for all stocks (Kliger and Gurevich, 2014).

The market model, referred to as the Single-Benchmark of Returns by Kliger & Gurevich (2014), is seen as an improvement over the constant mean return model (MacKinlay, 1997). The single-factor benchmark is based on a single-factor return model devised by Sharpe (1963). It employs a more advanced modelling approach to stock returns compared to a naive approach, by assuming a linear relationship between stock and market returns at the same time. The relationship is described in the following equation:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it,} \qquad \textbf{(1)}$$

where

R_{it} is stock i's return at period t;

R_{mt} is the market return at period t;

ε_{it} is the model's error term;

αi and βi are the model's parameters

and $\qquad E(\varepsilon_{it} = 0)$ and $\varepsilon_{it} = \sigma^2 \varepsilon_{it}.$ $\qquad$ **(2)**

The parameters α*i* and β*i* can be estimated econometrically for each security *i* by means of OLS regressions:

$$\hat{\alpha}_i = \hat{\mu}_i - \hat{\beta}_i \hat{\mu}_m, \qquad (3)$$

$$\hat{\beta}_i = \frac{\Sigma_{t=T_0+1}^{T_1} (R_{it} - \hat{\mu}_i)(R_{mt} - \hat{\mu}_m)}{\Sigma_{t=T_0+1}^{T_1} (R_{mt} - \hat{\mu}_m)}, \qquad (4)$$

$$\hat{\sigma}_{\varepsilon i}^2 = \frac{1}{(L_1-2)} \Sigma_{t=T_0+1}^{T_1} \left(R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \right)^2, \qquad (5)$$

where

$$\hat{\mu}_i = \frac{1}{L_1-2} \Sigma_{t=T_0+1}^{T_1} R_{it}, \qquad (6)$$

and

$$\hat{\mu}_m = \frac{1}{L_1-2} \Sigma_{t=T_0+1}^{T_1} R_{mt} \qquad (7)$$

is the average stock returns and average market returns, respectively. In the formulas, *t* refers to an interval with several observations, and *i* is a specific observation. $L_1 = T_1 - T_0$ is the length of the estimation window, as discussed above. A broad-based stock index, such as the S&P 500 Index in the US and the STOXX Europe 600 Index, is the closest approximation to the return on the market portfolio.

According to MacKinlay (1997) and Kliger and Gurevich (2014), the market model represents a possible improvement over the constant mean return model by eliminating the portion of the return on the business portfolio that is linked to inflation. Consequently, the variation of the irregular returns is decreased, making the analysis of event effects more straightforward. The market model regressions R^2 will demonstrate how useful it is to use the market model, as opposed to the constant mean return model. The higher the R^2, the more significant the decrease in the variance of ARs, which increases the detection potential of ARs.

D5. Models for Measuring Abnormal Returns

ARs is described as *"the actual ex-post security return over the event window minus the company's normal return over the event window"* (MacKinlay, 1997). In other words, ARs is the difference between the returns that occur due to the event and the returns that would occur without the event. The estimated coefficients derived from the market model are the basis for the calculation of the ARs, which can be calculated

by taking the difference for each security i at each point during the event window, between the actual and predicted return. Any absolute difference from this comparison will be abnormal compared to the expected return. The ARs for security i and event date τ is defined as

$$AR_{i\tau} = R_{i\tau} - (\hat{\alpha}_i + \hat{\beta}_i R_{m\tau}), \qquad (8)$$

where

$AR_{i\tau}$ = *Abnormal Returns of stock i at time t,*

$R_{i\tau}$ = *Actual return of stock i at time t,*

$\hat{\alpha}$ = *Normal return of stock i at time t,*

$\hat{\beta}$ = *Normal return of stock i at time t,*

$R_{m\tau}$ = *Normal return of stock i at time t.*

Given the market model, the variance of the ARs is given by

$$\sigma^2(AR_{\varepsilon i}) = \sigma^2_{\varepsilon i} + \frac{1}{L_1}\left[1 + \frac{(R_{m\tau} - \hat{\mu}_m)^2}{\hat{\sigma}^2_m}\right]. \qquad (9)$$

Equation (8) shows that the conditional variance consists of two components: the disturbance variance from (5), and the additional variance from the sampling error in the market model parameters αi and βi. As described above, L1 refers to the estimation window. As L_1 becomes larger, the second component approaches zero, so the variance of the ARs can be approximated by

$$\sigma^2(AR_{\varepsilon i}) \approx \sigma^2_{\varepsilon i}. \qquad (10)$$

Since it is not always possible to confirm when the market has gained access to new information, we use event windows that span over several days; The AR observations are aggregated across two dimensions, through time, and across securities. As illustrated in Figure 1, T_1 represents the final day of the estimation window (first day of event window), and T_2 represents the final day of the event window. The CAR is estimated from τ_1 to τ_2, where $T_1 < \tau_1 \leq \tau_2 \leq T_2$ (MacKinlay, 1997). The CARs across time for security i is given by

$$CAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau}. \qquad (11)$$

D6. Aggregation of Abnormal Returns

While ARs, rather than NRs, controls for the market-wide movements when measuring the reaction to events, there is a need to control for firm-specific fluctuations. For example, firms in our sample may be involved in other major events, such as replacing the CFO, when the M&As are announced. Statistically speaking, random noise tends to be canceled out when ARs are averaged across a large number of firms and thus increase the signal-to-noise ratio of the measured market response to stock prices in the event of M&As (Kliger and Gurevich, 2014). The accumulated price reaction of the market is expected to manifest the CAARs. The sample AARs are estimated by averaging the ARs from (8) for all N securities at each time t in the event window. The sample AARs for each event period τ, $\tau = T_1 + 1,\ldots.T_2$ is

$$\overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{it}. \qquad (12)$$

When the estimation window, L_1, is large, the variance of the AARs observation is given by

$$Var(\overline{AR_\tau}) = \frac{1}{N^2}\sum_{i=1}^{N} AR_{i\tau}. \qquad (13)$$

Finally, in the event window, the sum of the AARs over the t days is the cumulative AARs (CAAR). The CAARs are useful for statistical analysis as they illustrate the full effect of ARs. The CAAR for any time interval in the event window is given by the following equation:

$$\overline{CAR}(\tau_1,\tau_2) = \sum_{\tau=\tau_1}^{\tau_2}\overline{AR_\tau}, \qquad (14)$$

where the variance of the CAARs is given by

$$Var[\overline{CAR}(\tau_1,\tau_2)] = \sum_{\tau=\tau_1}^{\tau_2} VAR(\overline{AR_\tau}). \qquad (15)$$

D7. Testing for Statistical Significance

A two-sided t-test is used to test the null hypothesis that the ARs and CARs are zero, meaning the events does not affect returns. The statistical properties of the CARs are assumed to be:

$$CAR_i(\tau_1, \tau_2) \sim N[0, \ var(CAR_i(\tau_1, \tau_2))]. \quad \textbf{(16)}$$

When testing the hypothesis that the CARs are equal to zero, we assume that there is no correlation between the ARs of the securities. If clustering occurs, i.e. overlapping in the included event window, there may be a correlation between events and ARs. Without clustering and assuming a normal distribution, ARs will be independent across securities. To determine the significance of the ARs for each day in the event window, the test is performed using t-statistics calculated for each AR (ARt) using the following equation:

$$t_{AR_{i,t}} = \frac{AR_{i,t}}{S_{AR_t}}, \quad \textbf{(17)}$$

where S^2_{ARt} is the standard deviation across the ARs in the estimation window,

$$S^2_{AR_t} = \frac{1}{N_i - 2} \sum_{t=T_0}^{T_1} \left(AR_{i,t}\right)^2. \quad \textbf{(18)}$$

The statistical significance of the CARs is also ascertained via the calculation of a t-statistic, defined as follows:

$$t_{CAR} = \frac{CAR_i}{S_{CAR}}, \quad \textbf{(19)}$$

where $$S^2_{CAR} = L_2 S^2_{AR_t}. \quad \textbf{(20)}$$

A two-sided t-test is also used to test the null hypothesis that AARs and CAARs are zero, based on the same assumptions. The statistical properties of the CAARs are assumed to be:

$$\overline{CAR}(\tau_1, \tau_2) \sim N[0, \ var(\overline{CAR}(\tau_1, \tau_2))]. \qquad \textbf{(21)}$$

To determine the significance of the AARs for each day of the window period, the test is performed with t-statistics calculated for each AAR (AAR_t) using the following equation:

$$t_{\overline{AR}} = \frac{\overline{AR_t}}{\frac{\sigma_{AR}}{\sqrt{n}}}. \qquad \textbf{(22)}$$

The significance of the CAARs is also determined via the calculation of a t-statistic, defined as follows:

$$t_{\overline{CAR}} = \frac{\overline{CAR_t}}{\frac{\sigma_{CAR}}{\sqrt{N}}}. \qquad \textbf{(23)}$$

E. Tobin's Q

When analyzing the market expectations of firm performance, we also integrate Tobin's Q as a measure. The q-theory was developed by James Tobin in 1969 and is an analytical tool for assessing the fundamental value of companies. Tobin's Q is defined as:

$$\text{Tobin's } Q = \frac{\text{Total Market Value of Firm}}{\text{Total Asset Value of Firm}}. \qquad \textbf{(24)}$$

The q-ratio is measured as the market value of the company divided by the replacement value of the assets of the company, which is extremely complicated to measure correctly using basic financial data (Chung and Pruitt, 1994). We, therefore, follow the methods of Chung and Pruitt (1994) and calculate the approximation,

$$\text{Approximate } Q = \frac{\text{MV} + \text{PS} + \text{Debt}}{\text{Total Assets}}, \qquad \textbf{(25)}$$

where MV is the market value of common equity, PS is the liquidation value of firms' preferred stocks, and debt is the value of firms' short-term liabilities net of their short-term assets plus the book value of firms' long-term debt. If the q-ratio is greater than 1, then the market value is higher than the value of the company's registered assets. A high q-ratio indicates that the market value reflects some of the company's undetermined or unrecorded assets (Chung and Pruitt, 1994)

F.   Processing of Data

F1. Variables

In order to compile the data set of divestitures, we mainly used the standard functions of Excel for the rough processing of the data. This applies, inter alia, to the construction of binary variables and the construction of the tables set out in Chapter IV, which is explained in more detail below. Most variables are built using a combination of standard Excel formulas to translate text and codes from the raw output we extracted from the SDC M&A database into 1's and 0's binary variables. Some of these are also based on the measures derived from the analysis in Chapter IV. In addition, variables are also built manually when the output is too complex for Excel. Stata was the main test application for statistical analysis and event study. The dependent variables are presented in Table II below. Table II is made up of standardized names, the explanation of what the variables contain and the number of observations.

Most binary variables are built in Excel before they are merged into Stata. The first seven dummies (Divested → Operating Results) are constructed simultaneously as we conduct the first part of our analysis, where we classify and identify the divestments in our sample. These had to be plotted manually before they were merged into Stata.

Table II

Variable	Label	Obs.
Divested	1 if Original M&A is Classified as Divested	49
Unsuccessful	1 if Divestments is Classified as Unsuccessful	35
Reason	1 if Divestment is Classified as Unsuccessful Based on Reasons	9
Sale Price	1 if Divestment is Classified as Unsuccessful Based on Sale Price	23
Deflated Sale Price	1 if Divestment is Classified as Unsuccessful Based on Deflated Sale Price	33
Capital Gain	1 if Divestment is Classified as Unsuccessful Based Reported Capital Gain	12
Operating Result	1 if Divestment is Classified as Unsuccessful Based on Operating Result	9
Sweden	1 if the Original M&A is Based in Sweden	127
Norwegian	1 if the Original M&A is Based in Norway	38
Denmark	1 if the Original M&A is Based in Denmark	27
Region	1 if Target Is Acquired from Outside of Scandinavia	118
Merger	1 if M&A Is A Merger	86
Horizontal	1 if Acquirer and Targets Are Not Related in Terms of Industry	128

One problem associated with these variables is that they underestimate the number of M&As that will be divested after our research period. The remaining dummies were created in Excel based on standard information obtained from the SDC M&A database.

F2. Skewness and Kurtosis

After calculating the ARs and CARs for the different event windows, we tested the robustness of our sample using the Stata summary statistics feature on our main variables. Table III shows that the 1st percentile of the ARs is -12.2%, and the 99th percentile observation is 28.8%. Furthermore, there is a significant difference between the lowest (-22.9%) and the highest (0.379) observation.

Table III

Table III presents summary statistics on the acquirer AR- and acquirer CAR variables for each of the three-event windows before winsorizing obtained using the methodology from Section D and is presented solely for statistical purposes. The sample consists of 192 Scandinavian M&As between 2000 and 2011. The variable "AR" is the acquirer abnormal returns on the day of M&A stock exchange announcement, while CAR, CAR2 and CAR3 are the acquirer cumulative abnormal returns from three event windows [-1,1], [-5,5] and [-10,10] respectively.

Variables	Obs	p1	p99	Skew.	Kurt.
AR	192	-.122	.288	1.52	12.876
CAR	192	-.131	.281	1.506	11.177
CAR2	192	-.135	.378	1.692	8.971
CAR3	192	-.209	.37	1.035	7.304

Skewness is a measure of the asymmetry in a variable 's distribution. A positive skew value indicates that the tail on the right side of the distribution is longer than the left side of the distribution and the bulk of the values are on the left side of the mean (Groeneveld and Meeden, 1984). Table III presents that all the variables have skewness greater than one, indicating that the tail on the right side of the mean is fatter and more prolonged. Kurtosis is a statistical measure defining how heavily a distribution's tails differ from the tails of a normal distribution (Groeneveld and Meeden, 1984). In other words, the kurtosis identifies whether the distribution tails in our sample contain

extreme values. The kurtosis of a normal distribution equals three, which indicates that, from Table III, the tails in our sample contains extreme values.

Based on these results, our sample is not normally distributed. Therefore, we winsorize the main variables in our sample before performing any tests.[11] Winsorizing is a method that limits the impact of extreme statistical values on a data set and is often used in cases where one or more data points are derived from a distribution with heavy tails (Barnett and Lewis, 1994). According to Welch (2017), there is no valuable predictive advantage of using a stock's means, standard deviations, and contemporaneous rate of return on the market if you also eliminate or zero out outliers instead of winsoring them.

The method works by taking values outside a selected significance level and setting it equal to the value at the appropriate significance level. We have winsorized 2.5% of the upper and lower tails in our sample. By applying winsorizing, the observations will not affect the result to the same extent, and we do not have to omit them from the sample. An alternative would have been the use of robust regressions in Stata.[12]

F3. Clustering

Since the original acquirers may announce multiple M&A within the same calendar year, we perform two tests to ensure that our estimates are not affected by multiple announcements that occur within a timeframe when the model parameters are calculated. To ensure that the covariance between the observations, given by

$$\text{Cov} (AR_{it}, AR{jt}) = 0, \; i{\neq}j, \qquad \textbf{(21)}$$

is not violated, we use the cluster feature in Stata to generate robust standard errors. This adjustment does not influence the regression coefficients, but adjusts their T-values downwards, thereby avoiding type 1 errors.[13] Second, we manually check the dates of the M&A announcement and find that no acquirer has completed more than one M&A within 21 trading days, which is equal to our longest event window.

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[11] See Appendix A for summary statistics post Winsorizing.
[12] Robust regressions in Stata would have resulted in the weighting of CARs by their average estimates, thus reducing the impact of extreme observations. In Stata, however, robust regression cannot be combined with cluster control and heteroscedasticity.
[13] In statistical hypothesis testing, a type 1 error is the rejection of a true null hypothesis

IV. Findings: Divestitures and Long-Term Success

To this point, we have elaborated on the background of M&As and divestitures, previous literature and the methodology used. In the following sections, we present the results of our findings from the identification and classification of divestitures. By examining the divestitures using different measures, we assess the extent to which the long-term performance of the original M&As indicates whether or not they have been successful.

A. Divestment Frequency

Table IV shows that 26.5% of the original M&As in our sample are divested by 2019.[14] Moreover, we report that the target value as a percentage of the purchaser's value was 22% across the sample and that the original M&As, which were subsequently divested, was held on average for approximately seven years.

The frequency of divestments in our sample is lower than that reported by Ravenscraft and Scherer (1987), Kaplan and Weisbach (1992) and Porter (1987). They found that 33%, 43.9% and more than 50% of the original acquisitions in their sample were subsequently divested. However, the divestment frequency is higher than that found by Mulherin and Boone (2000). They report 20.5% of the acquirers in their sample of large M&As engaged in major divestitures.[15]

However, the different frequency of divestitures in these studies can also be seen year-over-year in our sample, indicating that there may be some factors affecting the frequency of divestitures. Evidently, there are two periods with a significant decrease in the number of both M&As and divestitures. As presented in Table IV, we show that the number of completed M&As (33) peaked in 2000 and then decreased significantly in the years to come. The same pattern is seen with a new peak in 2007, followed by a significant decline in the following years, prior to recovery at the end of the sample period. In 2003, only eight M&As were completed in the three countries, and zero divestitures were recorded. The same trend is observed in 2009, with only six M&As

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[14] Table IV shows the correct number of M&As and divestments for the first part of this thesis (Chapter IV). However, in the second part of this thesis, four observations were omitted due to insufficient data. See Appendix A for an alternative version of Table I and Table IV.

[15] It is important to bear in mind that these studies used samples of US firms only, between 1960 and 1999. When comparing our results, we therefore need to recognize the differences, both geographically and periods studied.

Table IV

Number of M&As and Divestitures by Year and Country, Median Target Value and

Average Years Held

All the original acquirers were public firms at the time of the transaction and had data on the stock price available from DataStream. Table IV shows the fraction of divestments (in parentheses) for each year in our sample by acquirer nation. The sample consists of 196 Scandinavian M&As and mergers of at least $100 million in 2019 dollars completed between 2000 and 2011. M&As are classified as divested only if a tearsheet has been reported. Tearsheets are standardized forms that must be made available to the market if publicly traded Scandinavian firms participate in major events that may have an impact on stock prices. Median Target Value as Percentage of Acquirer Value is calculated by dividing the size of the acquisition (value of target) on the market capitalization of the acquirers 50 days prior to the acquisition.

Year	Number of Norwegian M&As	Number of Swedish M&As	Number of Danish M&As	Median Target Value as Percentage of Acquirer Value	Percentage Divested in Total	Average Years Held
2000	6 (3)	19 (5)	7 (2)	31 %	30.3%	7.8
2001	2 (2)	5 (3)	1 (1)	58 %	50.0%	9.7
2002	1 (0)	6 (2)	3 (0)	2 %	22.2%	10.0
2003	1 (0)	6 (0)	1 (0)	N/A	0.0%	N/A
2004	2 (0)	7 (4)	4 (0)	5 %	30.8%	9.8
2005	5 (0)	13 (4)	3 (1)	17 %	23.8%	7.6
2006	6 (2)	12 (5)	3 (0)	39 %	33.3%	6.6
2007	8 (1)	20 (6)	1 (0)	7 %	24.1%	7.0
2008	5 (2)	9 (2)	1 (1)	31 %	33.3%	4.2
2009	0 (0)	4 (0)	2 (0)	N/A	0.0%	N/A
2010	1 (0)	10 (4)	2 (0)	21 %	30.8%	6.3
2011	2 (0)	16 (2)	0 (0)	10 %	11.1%	3.0
TOTAL	**39 (10)**	**127 (37)**	**28 (5)**	**22 %**	**26.5%**	**7.18**

completed, and again, zero divestitures. In both of these periods with lower levels of M&A activity in our sample can be explained by the burst of the Dot-Com Bubble and the Financial Crisis, which plunged global M&A activity (Eckbo and Thorburn, 2011; Aharon et al., 2010). The volatility in both M&A and divestment frequency is also consistent with the view that increased deal activity is driven by rising stock markets (Ahren et al., 2014) and previous research on the fifth and sixth merger waves.[16]

We also report subsamples of the three Scandinavian countries in our sample. The Swedish firm accounts for almost 65% of our sample, with a total of 127 completed M&As within our research period. Of these, 29% (37) was subsequently divested. The Norwegian firms engaged in 39 M&As over the period observed, and 10 (26%) of them were subsequently divested, in line with the average of the entire sample. Danish firms completed 28 M&As over the eleven-year period, of which only five (18%) have been divested. The sample may appear to be unbalanced, but the high number of Swedish M&As is consistent with the historical activity in Scandinavia (Segerstrom, 2018). For example, in 2015, Stockholm was the world's most prolific technology hub behind Silicon Valley on a per capita basis.

B.   Classifying Long-term Success of the Divestitures

This section offers a brief discussion of the choices made about how we classify the divestment success, based on Kaplan and Welsbach's approach from 1992.[17] We use four approaches to determine the long-term success of divestments, two primary and two supportive.

B1. Reasons

The first primary approach is to compare, where applicable, the reason for the original M&As reported by the acquirers with the reason for the divestitures as reported by the acquirers. The reason for the original acquisition, *deal purpos*e, is reported in 37 of the 52 transactions classified as divested and is derived from the tearsheets of the original M&As. Using this as the basis for our first approach, we tried to obtain *Reason for Divestment* for these M&As. For each transaction classified as divested, we examined the annual reports, the home pages, and the business press for reasons of divestment. Since these reasons are commonly reported in either Swedish,

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[16] See Chapter II, Section A for discussion on merger waves.
[17] See Chapter III, Section C for details on how we classified an M&A as divested.

Norwegian or Danish, and often make statements with the same reasoning, but use different wording and phrases, we have translated and categorized them into five groups.[18] Our findings from this method are presented in Section C below.

B2. Sale Price

The second primary approach, presented in Section D, is to estimate the success by comparing the sale price to the purchase price. In most cases, the deal size of the divestments is obtained from a single tearsheet. Whenever we do not obtain sufficient details from a single tearsheet, e.g. when a divestment is completed in several parts, the sale price is obtained from multiple tearsheets or the annual reports of the selling firm. However, there are some limitations to this approach that we need to consider. First, when we compare the sales-to-purchase ratio directly, we only get the nominal returns. This measure does not consider the general increase in the market and will therefore biased in favour of the original acquirers. Second, if we want to compare the purchase-to-sale ratio, the purchase price of the initial M&A and the sale price of the divestment needs to be valuated the same way. Traditionally, the purchase price, and therefore the sale price, are valued on a debt-free and cash-free basis.[19] We, therefore, assume, in order to compare the transactions, that the original M&As and the divestitures have been valued using the same method for both purchase and sale.

B3. Support Measures and Discussion

If the reasons are not contradictory and the (deflated) sale-to-purchase price is positive, we classify the divestment as successful. If the two primary approaches produce contradictory results, we use two supportive approaches, where applicable, to support the two primary approaches. The first measure is the capital gains as reported by the selling firm either in its quarterly or annual reports. In the context of the sale of assets (target firms in our case), the seller will recognize a tax gain or loss based on the difference between the consideration received (purchase price and assumption of liabilities) and the tax basis for the disposed of assets (Joy, 2018). The second measure of support is the operating result of the divested unit as reported by the selling firm the fiscal year before the sale.

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[18] For example, when DNB announced the sale of SalusAnsvar in 2012, the Director of Information said, "*The sale of SalusAnsvar is a consequence of DNB's earlier decision to close down our retail operations in Sweden.*" The example has been translated from Norwegian to English, and have been categorized as *Refocus on core business and / or markets* in Table IV of Section C.

[19] See, for example, Cummins et al. (2017) Deloitte.com - Locking in Value

Our two primary approaches differ to some extent from those of Kaplan and Weisbach (1992). Their first approach, reasons, classifies divestments as unsuccessful if the business press indicated that the acquisition was a failure, or if the original acquirer had reported that the unit had been sold due to poor performance. As discussed above, we will rely solely on the reasons for both the M&A and the divestment, where applicable, put forward by the acquirers themselves and compare them with each other. There are two main reasons for this decision. In the initial phase of the identification of the divestment, we found that many of the original M&As had not been consistently reported by a well-known financial news source. Since we examine M&As from several countries and obtain M&As from SDC, and not a single financial news source, we do not have the same basis for using the reasons given by the financial press for the divestment. [20]

Their second primary approach relied on accounting profits (capital gains). In the context of capital gain, companies generally have two different types of approaches or measures to determine the value of their assets: the price originally paid (i.e. M&A cost or historical cost) or the value of those assets if sold today (fair price). Our study examines M&As in a completely different period than Kaplan and Weisbach. In the late 1990s, firms depended on the former, which had the essential advantage of being easily verified by investors through annual reports. Over the last two decades, however, companies have used the fair value method (Young and Sherman, 2016), which is also evident from the review of the annual reports of the firms in our sample. Since not everyone agrees with what 'fair value' entails, this method has injected considerable subjectivity into financial reporting. Therefore, we believe that it is not appropriate to classify the ultimate success of a divestment based on capital gains.

We do, however, use capital gains as a support method. If the two primary methods are unable to classify the divestitures, for example in spin-offs, we rely on the two supportive measures. Our second supportive measure, the operating result of the divested unit, may also be biased in favour of divesting firms. Many of the acquirers do not specifically report the results of a single subsidiary. Second, the targets may have very positive operating results when they are acquired and, although positive before they are sold, the result may have decreased compared to before. As a result, we only use operating results as a supporting measure for the two main approaches.

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[20] Kaplan and Weisbach (1992) only use The Wall Street Journal as a source for reasons as well as for the identification of divestitures.

C. Divestment Success as Measured by Reasons

Initially, the relatively high frequency of divestments makes us believe that a high fraction of the M&As in our sample are mistakes and destroy value (Goergen & Renneboog, 2004; Doukas *et al.*, 2002). However, other factors could explain the high number of divestments identified in our sample other than failed M&A strategies.

Table V reports the cited reason for both the original acquisition and the divestment. We report that the two most common reasons for the original M&As, cited in 62% of the 37 transactions, are to strengthen operations or create synergies. Expanding presence in either new-, primary- or secondary markets is cited in 32% of the transactions. In contrast, only two of the original acquirers cites acquiring technology or assets as the purpose of the deal. The most common reason for the divestment, cited in 65% of the 37 transactions, is either to refocus on their core business areas or core markets. The six transactions cited with simplification of the structure as the reason for the divestment are all spin-offs or carve-outs, and none of these had contradictory reasons. The three remaining reasons cited new strategy, poor financial performance and need for cash, representing only six transactions.

Table V

Announced Reason for Original Merger & Acquisitions and Divestitures Completed Between 2000 and 2011 in Scandinavia

The stated purpose of the original M&As is obtained from the tearsheets of each transaction when reported. The reasons for divestment are either publicly announced by the selling firm or reported by the media. The reasons for divestment have been categorized. Table V presents reasons for the 37 divestments which had reported deal purpose of the original M&A.

Reported Deal Purpose - Original Acquisition	N	Reason for Divestment of Target	N
Strengthen Operations	15	Refocus on Core Business and/or Markets	25
Create Synergies	8	Simplify Business Structure	6
Expand Presence in New Geographical Markets	6	New Business Strategy	2
Expand Presence in Primary or Secondary Market	6	Poor Financial Performance	2
Acquire Competitor's Technology/Strategic Assets	2	Need for Cash	2
Total M&As with Reported Reason	**37**	**Total Divestments with Reported Reason**	**37**

We consider the two divestments that cite poor financial performance to be unsuccessful, as well as divestitures where the reason for the original M&A directly contradicts with the reason for the divestment. Seven of the divestitures cited *expand presence in new geographic markets or secondary markets* as the reason for the original acquisition and *refocus on core markets* as the reason for the divestment.

Although nine of the transactions were classified as unsuccessful on the grounds set out above, there is no basis for classifying the remaining 43 divestitures. According to Asay *et al.* (2018), managers and CEOs tend to focus more on the future to frame poor performance in a positive light and provide causal explanations for poor performance. Intuitively, many of the reasons given seem to be affected by positive framing. For example, acquirers citing *Refocus on core business or market* as reason for divestment may be more related to poor performance than expressed by companies through their press releases. This makes us believe that this method is biased in favour of the acquirers. We, therefore, apply a second primary approach to the assessment of the remainder of the divestitures.

D. Divestment Success as Measured by (Deflated) Sale Price

Our second primary approach is to compare the deal size of the original acquisition to the deal size of the divestment. Sale-to-purchase ratio gives us the foundation to classify nearly all the original M&As, except for the seven transactions that were part of spin-offs or carve-outs. In Panel 1 of Table VI, we report that 20 of the 45 divestitures have increased in value when comparing the sale price relative to the purchasing price, indicating that 45% of the divestitures were successful based on this measure

However, most of the divested M&As have been sold at a loss compared to the purchase price; 25 of the divested M&As have a negative sales-to-purchase ratio which far exceeds the nine transactions classified as unsuccessful in Section C. The median of -7.23% and the average of -0.96% indicate that the average divestment in our sample was sold at 99.04% of the purchase price. In contrast, the median was sold at 92.77%.

This measure gives an unambiguous indication of whether the original acquisition was a success or not. However, as discussed in Section B, this measure only yields nominal returns and can, therefore, be biased in favour of the original acquirers.

If the original acquirers had invested in an equally weighted market portfolio of Scandinavian listed companies instead of investing in the target, they would most

likely have also made positive returns. We, therefore, deflate the sale price with the average market return. Panel 2 of Table VI shows that only ten (22%) of the divestments are profitable after deflating the deal size with the average market return over the holding period. This further confirms our intuition that the non-deflated measure was biased, as ten of the divestments with a positive sale-to-purchase ratio in Panel 1 were shifted to negative in Panel 2. The decline in profitable divestments is consistent with the findings of Kaplan and Weisbach (1992), but the average and the median of our findings are significantly more detrimental; the median M&A that was subsequently divested was sold for (1-0.666) 36.3% of the purchase price. For targets that are held for eight years (average) before divested, the average annual market-adjusted return is –7.98% and -8.35% for the median. This indicates that the acquirers of targets which were subsequently divested overpaid for the original M&As by a significant amount; for most of the M&As in our sample, the acquirers would have generated higher returns if, instead, they had invested in a market portfolio of companies listed on the Scandinavian exchange markets (excluding dividends).

Table VI

Divestitures by Purchase-To-Price Ratio, Capital Gain on Sale, and Acquired Unit Operating Result

Profit on sale is the gain or loss from the difference between the reported deal size of the original acquisition and the divestment. Non-USD transactions are exchanged using the exchange rate on the stock exchange announcement day. Market return refers to the average yearly return on Oslo-, Stockholm- and Copenhagen- Stock Exchange. The measures also include observations of acquirers that divested over several transactions. Spin-offs and carve-outs are omitted from the table.[21]

Panel	Profit	Loss	Average	Median	N
1. Profit on Sale Price Relative to The Purchase Price	20	25	-0.96%	-7.23%	45
2. Percentage Change in Sale Value of Divestment Deflated by Market Return to Purchase Price	10	35	-63.7%	-66.6%	45

The 35 divestments with a market-deflated loss on sale in Panel 2 are considered to be unsuccessful. We also note that for most of the divestitures in our sample, the two

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[21] The seven spin-offs/carve-outs all had favorable deflated sales-to-purchase ratio but were omitted from the table due to the extreme sale prices that included more than just the original target.

primary measures are in agreement on the classification of success; of the nine divestments classified as unsuccessful by the first approach, only one has a favourable market deflated sales-to-purchase ratio. Since the selling firm reported poor financial performance as the reason for the divestment and operating result point in the direction of failure, we do not change our initial classification of this divestment.

E.   Divestment Success as Measured by Capital Gain and Operating Result

As additional measures for divestment success, Table VII reports the capital gains and operating results of the divested units, where applicable. This method offers a blunt estimate of the purchase price relative to the target sale price, where a capital loss implies that the target has been divested for less than the book value as reported by the acquirer. From Panel 1, we show that 56% or 23 of the selling firms reported a positive capital gain, which exceeds the number of profitable divestitures as reported in both Panel 1 and Panel 2 of Table VI in the previous section. Among these are the seven spin-offs/carve-outs in our sample. However, given the flaws of this method discussed in Section B, it is reasonable to assume that many of the acquirers in our sample had written off considerable value in the years preceding the divestment and thus recorded capital gains on unsuccessful divestments. For example, divestments with a negative sale-to-purchase ratio of up to -97% reported positive capital gains.

Table VII

Divestitures by Purchase-To-Price Ratio, Capital Gain on Sale, and Acquired Unit Operating Result

Capital gain on sale is the (pre-tax) gain or loss as reported by the seller of the target. We also report on the cases where the target is divested in several transactions or with other assets. Operating result is reported, when available, as either positive or negative. The average and medians are calculated using pre-tax amounts.

Panel	Profit	Loss	Neither	Average	Median	N
1. Capital Gain as Reported in Annual Report as Percentage of Deal Size	23	14	4	11 %	3 %	41
2. Divested Unit's Operating Result	23	10	0	N/A	N/A	33

The divestments with reported negative capital gain are consistent with the divestments classified as unsuccessful when using the two primary approaches. In four

of the divestments, the original acquirer reported that the target had been sold at enterprise value and that it would not recognize any capital gain or loss.

Panel 2 shows that of the 33 acquirers who accurately reported operating results for the divested unit, 23 reported positive results, while nine reported negative operating results. The seven spin-offs reported positive results. These findings contradict those of Ravenscraft and Scherer (1987), who reported that the year before the divestment, on average, divested targets had negative operating results. However, the number of observations, geographical location, and the limitation to only transactions over $100m may explain the difference. It is important to note that there is no specific accounting legislation requiring firms to report the operating results of each subsidiary. This lack of legislation may, therefore, also be subject to framing; those units with positive operating results are more likely to be reported by the owner than those with negative operating results.

F. Research Question 1: Overall Findings of Chapter IV

The first research question in this thesis is to what extent major M&As in Scandinavia between 2000 and 2011 were subsequently divested, and what percentage of these ultimately represent failed M&A strategies. To summarize our findings in Chapter IV, we identified 65 potential divestitures between 2000 and 2011, which had either partial or fully divested the original M&A by the end of 2019. Of the 65 M&As involved in divestments, 13 did not meet the criteria set, leaving us with a final sub-sample of 52, or 26.5% of the M&As classified as divested. After identifying the divestments, we mainly used two primary measures to assess whether these divestments were successful or unsuccessful. By comparing the reasons, nine of the divestitures were considered to be unsuccessful. However, as the remaining 43 divestments are not necessarily successful, we apply a second primary approach. By using the market deflated sale-to-purchase ratio, which has the scope to classify the remaining divestitures, we find that 35 of the divestitures have a significant negative sales-to-purchase ratio and are considered unsuccessful. The spin-offs in our sample are classified as successful based on favorable results of all four methods. Overall, the results are mixed. While many (69%, or 36) of the divestitures are classified as unsuccessful, almost a third of the divestitures are, by our four measures, successful in the long-term.

For most of the identified divestitures, our two primary methods used to classify success give similar results, while our two supportive measures give contradictory results. This could be different if the first approach were able to classify more than nine of the divestitures. In addition, we have only the reasons for 37 of the original M&As, and therefore we do not have the means to classify 15 of the classified M&As. As for our two additional measures, we argue that bias is the main reason for contradictory results. As discussed above, CEOs and managers, and therefore companies, tend to frame poor performance positively. This suggests that, in addition to the first primary measure, the two supporting measures underestimate the number of unsuccessful divestments.

V. Findings: Market Expectations about Firm Performance

To this point, we have tracked and classified the long-term success of the M&As identified as subsequently divested. In the next chapter, we employ a standard event study of methodology to calculate different measures of abnormal returns during the short period around the time of the M&A announcement date.[22] We also use our measure of success as set out in the previous chapter to see whether the long-term success of the divestment is linked to the market expectations of the acquirers and targets. A positive correlation will support the view that the returns from the event window are linked to the improvement of the fundamental values underpinning them. A negative or zero correlation would, by comparison, cast doubt on this view.

A.   Market Expectations to M&As: Non-Divestments vs Divestments

Table VIII presents ARs and CARs on the date of the M&A announcement for the acquirers in our sample. Panel 1 reports specifically the acquirer ARs on the date of M&A stock exchange announcement [0], and we find that the market expectations to the M&As across the sample are positive, with a mean of 1.3%. The acquirer ARs for the subsequently non-divested M&As is 1.9%, with both of these measures being significant at the 1% level. The acquirer ARs to those non-divested is considerably higher than those who subsequently divested (-0.4%). The 2.5% difference is, however, not statistically significantly different from zero. The last two rows show acquirer ARs for divestitures by success as set out in the previous chapter; acquirer ARs for those divestitures classified as successful are positive, while those classified as unsuccessful are negative. However, the two measures are of a very modest magnitude and are not significant.

Panel 2 reports the acquirer CARs on the day before the event, on the date of the event and the day after the event [-1,1]. By increasing the number of event days to a total of three and accumulating the returns over the entire period, the returns are slightly more favourable for all acquirers, with an average of 1.8%. The acquirer CARs for subsequent non-divested acquirers is 2.5%, with both measures being statistically significant at the 1% level. The acquirer CARs in the subsamples by Long-term success are not significant, but the coefficient signs are consistent with Panel 1.

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[22] See Chapter III, Section D for discussion of the choices made in relation to the ESA and technical description of the methodology followed.

Table VIII

Abnormal Returns and Cumulative Abnormal Returns for Acquirers by Divestment Classification
and Ex-Post Long-Term Success

Mean, standard error and significance for abnormal returns and cumulative abnormal returns for the acquirers within ten days before and after the date of stock exchange announcement of the original M&A. The variables have been winsorized. The sample consists of 192 Scandinavian M&As of at least $100 million in 2019 dollars completed between 2000 and 2011. Normal returns are calculated using the Benchmark Single Factor Returns Model 241 to 61 trading days before the stock exchange announcement of the acquisition. M&As are identified as divested only if a tearsheet has been reported and classified as unsuccessful if either the acquirer cites contradictory reasons for the original acquisition and divestment or if the deflated sales-to purchase ratio is negative.

Panel	Regression output	All Acquirers	Not Divested	Divested	Long-term Success	
					Successful	Unsuccessful
1: Abnormal Return for Acquirers at Event Window [0]	Mean (constant)	0.013***	0.019***	-0.004	0.004	-0.008
	Standard error	(0.003)	(0.003)	(0.005)	(0.009)	(0.006)
	Obs. (N)	192	143	49	14	35
2: Cumulative Abnormal Return for Acquirers at Event Window [-1, 1]	Mean (constant)	0.018***	0.025***	-0.003	0.003	-0.005
	Standard error	(0.004)	(0.005)	(0.008)	(0.014)	(0.010)
	Obs. (N)	192	143	49	14	35
3: Cumulative Abnormal Returns for Acquirers at Event Window [-5, 5]	Mean (constant)	0.018***	0.024***	0.003	0.051**	-0.016
	Standard error	(0.005)	(0.006)	(0.011)	(0.021)	(0.011)
	Obs. (N)	192	143	49	14	35
4: Cumulative Abnormal Return for Acquirers at Event Window [-10, 10]	Mean (constant)	0.005	0.011	-0.014	0.034	-0.033*
	Standard error	(0.008)	(0.009)	(0.016)	(0.027)	(0.018)
	Obs. (N)	192	143	49	14	35

Standard errors are in parenthesis
*** p<0.01. ** p<0.05. * p<0.1

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Panel 3 reports the findings from our main event window of interest, five days before and five days after the announcement of the stock exchange. When the interval is extended to five days before, and five days after the event, the effects on all M&As and non-divested M&As appear to have stagnated. We show that there is no change in the acquirer CARs for the entire sample compared to Panel 2, while the acquirer CARs of the non-divested M&As have declined by 0.1%. Both are still significant at the 1% level. The acquirer CARs to the non-divesting firms are still considerably higher than the CARs to those that are subsequently divested (0.1%). However, again we do not find any evidence that the market can differentiate between those who will divest and not. More interestingly, we find evidence of much higher acquirer CARs of those divestitures classified as successful when expanding the window (significant at the 5% level). The difference between the successful and the unsuccessful, 6.7%, is large in magnitude, but we find no evidence to support the difference. We also note that this event window appears to be the window that captures most of the effects.

Panel 4 reports our final control window to the acquirers, where we accumulate ARs over 21 days. However, we do not find any evidence that the CARs for the whole sample are statistically different from zero. The acquirer CARs for the subsamples seems to vanish, except for those classified as unsuccessful (-1.8%). The acquirer CARs of those non-divested is 2% higher than those divested, but again the difference is not significant.

Overall, the positive acquirer CARs are consistent with the findings of Mulherin and Boone (2000), but they contradict those of others; Kaplan and Weisbach (1992) found negative CARs [-1,1] for all acquirers (-1.49%) while Fogh (2009) found a mean acquirer CAR of -1.96%. Several factors could explain the positive and significant acquirer CARs in our sample. For example, Scandinavian M&A activities are lower than in the US, one of the reasons being that the market is governed by the authority of the European Union, which examines all European mergers, irrespective of nationality.[23] Given the different regulatory framework, the market may expect M&As to be initiated in Scandinavia only if they provide significant value to the acquirer. Furthermore, the difference can also be explained by different periods. The research we referred to uses sample from 1960 - 1990, while our sample period is 2000 - 2019. A limited number of observations may also be a factor. Since the collection of

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[23] European Union Legislation Rules

divestment data was done manually, we must also note the possibility that human error could have had an impact.

B. Market Expectations to Targets: Non-divestments vs Divestments

Market expectations for M&A announcements are also analyzed from the point of view of the targets. Kaplan and Weisbach (1992) argue that the target returns are set in a competitive market for corporate control. Therefore, the target returns should not be linked to the market perception of the acquirer. In our sample, 52 of the targets were publicly traded at the time of the M&A. In addition, the measures include publicly-traded top parents of subsidiaries and the spin-offs and equity carve-outs.

Panel 1 of Table IX reports the target ARs on the date of the M&A stock exchange announcement [0]. Consistent with the views that target returns are unrelated to the acquirer's ability to operate the unit, we find that target ARs for the entire sample is highly positive, with an average of 8.3% on the announcement day. The ARs of the non-divested targets are lower than those subsequently divested, and the difference of 0.6% is significant at the 5% level. The last row, Long Term Success, presents subsamples of the targets involved in successful and unsuccessful divestitures, as classified in Chapter IV. We find that the target ARs for targets involved in successful divestitures are lower than those involved in unsuccessful divestitures. However, the difference is almost zero in magnitude and is not statistically significant.

Panel 2 reports the target CARs on the day before the event, on the date of the event and the day after the event [-1,1]. By increasing the number of event days to a total of three and accumulating the returns over the entire period, the returns are slightly more favourable for all targets, with an average of 8.9%. The difference (0.1%) between the non-divested targets and those involved in subsequent divestitures have nearly vanished over the three-day period, as compared to the ARs results in Panel 1.

Furthermore, we report that those involved in unsuccessful divestitures have 1.1% higher CARs than those involved in successful divestitures, which further underlines the view that the target returns are unrelated to the ability of the acquirer to operate the unit. We do, however not find evidence to support the claim that the market can distinguish between targets involved in unsuccessful or successful M&As at the time of announcement.

Table IX

Abnormal Returns and Cumulative Abnormal Returns for Targets by Divestment

Classification and Ex-Post Long-Term Success

Mean, standard error and significance for abnormal returns and cumulative abnormal returns for the targets within ten days before and after the date of stock exchange announcement of the original M&A. The variables have been winsorized. The sample consists of 192 Scandinavian M&As of at least $100 million in 2019 dollars completed between 2000 and 2011. Normal returns are calculated using the Benchmark Single Factor Returns Model 241 to 61 trading days before the stock exchange announcement of the acquisition. The targets are identified as divested only if a tearsheet has been reported and classified as unsuccessful if either the acquirer cites contradictory reasons for the original acquisition and divestment or if the deflated sales-to-purchase ratio is negative.

Panel	Regression output	All Targets	Not Divested	Divested	Long-Term Success	
					Successful	Unsuccessful
1: Abnormal Return for Targets at Event Window [0]	Mean (constant)	0.083***	0.081***	0.087**	0.087*	0.089
	Standard error	(0.017)	(0.019)	(0.034)	(0.042)	(0.054)
	Obs. (N)	73	54	19	4	15
2: Cumulative Abnormal Return for Targets at Event Window [-1,1]	Mean (constant)	0.089***	0.088***	0.089**	0.086*	0.097
	Standard error	(0.017)	(0.020)	(0.032)	(0.039)	(0.058)
	Obs. (N)	73	54	19	4	15
3: Cumulative Abnormal Returns for Targets at Event Window [-5,5]	Mean (constant)	0.077***	0.083***	0.062**	0.058*	0.077
	Standard error	(0.014)	(0.017)	(0.023)	(0.026)	(0.055)
	Obs. (N)	73	54	19	4	15
4: Cumulative Abnormal Return for Targets at Event Window [-10,10]	Mean (constant)	0.046***	0.051***	0.031*	0.034	0.020
	Standard error	(0.011)	(0.013)	(0.016)	(0.019)	(0.026)
	Obs. (N)	73	54	19	4	15

Standard errors are in parenthesis
*** $p<0.01$. ** $p<0.05$. * $p<0.1$

Panel 3 and 4 extend the event windows to 11 and 21 trading days, which shows across the subsamples that the CARs disappear when cumulated over longer periods, in line with Fogh's (2009) findings. This decline, however, is more significant for targets involved in subsequent divestitures (6.2% and 3.1%), as compared to the non-divested targets (8.3% and 5.1%).

Overall, our findings on the M&As involving targets are aligned with previous findings of target returns in M&As (Kaplan and Weisbach, 1992; Servaes, 1991; Mulherin and Boone, 2000). As of the date of the announcement, the target firm shareholders appear to be the winners of these transactions, as the market reaction to the targets is significantly higher than those of the acquirers presented in Section A.

C. Cross-Sectional Analysis

The findings presented in Table VIII are univariate, i.e. the measures consist of observations on a single variable – returns. In this section, a multivariate regression framework is used to examine cross-sectional differences in market expectations to the M&As. We do so with a standard OLS regression, as shown below.

$$Acquirer\ CAR_{i,j,t}\ [-5,5] = \alpha_i + \beta_1\ Divested\ Unsuccesful\ +$$
$$\beta_2\ Merger + \beta_3 Financial\ Bidder\ + \ \beta_4 Cross - Border\ + \ \varepsilon_i\ ,$$

where the dependent variable in the regression is the CARs for the event window [-5,5] for acquirer i for M&A j at time t. The independent variables include four binary variables which measure different characteristics of the M&As. Divested Unsuccessful is equal to 1 if the original M&A j has been divested and is classified as unsuccessful as set out in Chapter IV and zero otherwise. The variable Merger is equal to 1 if the original M&A j is a merger, zero otherwise. Strategic is equal to 1 if the acquirer and target operate within the same industry, zero otherwise for M&A j. The last variable, Cross-Boarder, is equal to 1 if the target is located outside of Scandinavia at the time of M&A j, zero otherwise.

The results on the event window reported in Table X show that most of the original acquirers are profoundly affected by the subsequent long-term success, consistent with our previous findings in section A. With the exception of the Danish subsample, we find

Table X

Cross-Sectional Analysis – Regressions of Acquirer Cumulative Abnormal Returns on Characteristics of Deal

Mean, t-values, significance and R-squared for cumulative abnormal returns for the original acquirers in the main event window [-5,5] before and after the date of the stock exchange announcement of the original acquisition. The dependent variable has been winsorized. The sample consists of 192 Scandinavian M&As of at least $100 million in 2019 dollars, which were completed between 2000 and 2011. M&As are classified as unsuccessful if the targets are classified as divested and the reasons for the original M&As and divestments contradict each other, or if the deflated purchase-to-sale ratio is negative

Variables	(1) All M&As	(2) Non-Divested M&As	(3) Divested M&As	(4) Swedish M&As	(5) Norwegian M&As	(6) Danish M&As
Divested Unsuccessful	-0.042***		-0.057**	-0.028**	-0.094***	-0.028
	(-3.370)		(-2.533)	(-1.932)	(-3.359)	(-0.645)
Merger	0.010	0.008	0.011	0.003	0.040*	0.011
	(0.948)	(0.612)	(0.506)	(0.204)	(1.769)	(0.488)
Financial Bidder	-0.013	-0.004	-0.046*	-0.023	0.021	-0.018
	(-1.176)	(-0.326)	(-1.830)	(-1.656)	(0.851)	(-0.840)
Cross-Border	0.012	0.005	0.043*	0.014	0.016	-0.010
	(1.101)	(0.381)	(1.826)	(1.005)	(0.674)	(-0.235)
Constant	0.023*	0.020	0.040	0.031**	-0.019	0.037
	(1.908)	(1.423)	(1.586)	(2.164)	(-0.769)	(0.833)
Obs. (N)	192	143	49	127	38	27
R-squared	0.072	0.004	0.270	0.063	0.324	0.050

T-values are in parenthesis
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

that the acquirers of M&As classified as 'unsucessful' experience significantly lower market reaction around the day of M&A announcement, as opposed to those not divested or successfully divested. The results suggest that the market is capable of distinguishing between those M&As that will be unsuccessful in the long-term. In particular, we find strong evidence in regression (5) that the unsuccessful, Norwegian M&As are associated with very low expectations; those Norwegian M&As divested unsuccess-fully had, on average, 9.4% lower returns than those not divested or successfully divested.

As suggested by the positive coefficients, mergers are favourably perceived by the market across all sub-samples. Wansley *et al.* (1983) find that the type of transactions has a significant effect on the announcement returns and argues that mergers are generally perceived to be more positive than acquisitions of assets. We find that the Norwegian mergers are associated with 4% higher returns than that of the Norwegian acquirers of assets (significant at the 10 % level). However, we do not find any evidence that the type of transaction has any impact on the other subsamples.

In addition, our findings suggest that the financial acquirers, i.e. M&As of unrelated targets are perceived negatively by the market based on the coefficients, consistent with Porter (1997), Ravenscraft & Scherer (1987) and Kaplan & Weisbach (1992). The exception is the positive impact of financial M&As on the Norwegian acquirers. However, again, we do not find any substantial evidence of cross-industry M&As affecting the market reaction to the M&A announcement.

Finally, we do not find any strong evidence of cross-border M&As affecting the announcement returns. However, consistent with Goergen and Renneboog (2004), the coefficients suggest that the market expectations of cross-border M&As are more positive than those of domestic M&As, except for Danish M&As.

It is also important to acknowledge that the constants are positive for all statistically significant regressions. This suggests that the market expectation of the M&As on average are still positive when controlling for possible characteristics of the deals.

C1. The Economic Consequences of The Cross-Sectoral Findings

In line with the findings of Kaplan and Weisbach (1992), our measure of success presented in Table X suggest that the fluctuations in stock prices at the time of the M&A announcements are connected to the long-term success or failure of the M&As. We, therefore, follow the methods of Healy *et al.* (1990) to further analyze this

relationship by estimating the following equation for the divestitures classified as unsuccessful: [24]

Probability (Divested Unsuccessful) =	*Const.*	*Acquirer CAR [-5,5]*
Coefficient	*.721****	*-2.525****
(t-stat)	*(12.18)*	*(-4.08)*
N = 49		*R^2 = .1698*

The estimated coefficient of – 2.525 represents the lower bound of the likelihood that a subsequent divestment will be unsuccessful; a 5% cumulative decrease in stock prices over the 11 trading days surrounding the M&A announcement is strongly associated with an increase of 12.63% in the likelihood that a subsequent divestment will be unsuccessful. However, the lower bound of 12.63% is not representative of the total likelihood. As discussed above, both the number of divestments and the number of unsuccessful divestments are likely to be underestimated by our estimates. Therefore, we perform the reverse regression and invert the coefficient to provide the upper bound.

Probability (Acquirer CAR [-5,5]) =	*Const.*	*Divested Unsuccessful*
Coefficient	*.0507***	*-.0672****
(t-stat)	*(2.49)*	*(-2.90)*
N = 49		*R^2 = .1698*

By inverting the estimated unsuccessful coefficient (-0.0672), we find an approximation of the upper bound of the acquirer CARs to the probability of unsuccessful divestment, 14.88. In other words, this means that a cumulative decrease in acquirer CARs of 5% will be associated with an increase of 74.41% per cent in the likelihood of divestment being unsuccessful rather than successful. As Kaplan and Weisbach (1992) point out, the actual predictive power of information available to the market, as calculated by the acquirer CARs coefficient, is between the lower and upper bounds, -2.52 and -14.88.

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[24] Healy *et al.* (1990) use a similar method to estimate the upper and lower bounds of the effect of improvements on the capitalized value of future cash flows on merger-induced abnormal returns.

C2. The Managerial Consequences of The Cross-Sectoral Findings

A comprehensive analysis of behavioural finance and management capabilities goes beyond the scope of this thesis. However, the upper and lower bounds established in the previous subsection indicate that the market has, to some extent, significant predictive potential concerning the ultimate success of the M&As. This suggests that the same (or even more) easily accessible information should be available to decision-makers in the acquiring firms, which makes us wonder whether management capabilities affect the outcome of M&As.

In this subsection, we examine the role of managerial performance, measured by Tobin's Q, in explaining the value generated by the M&As. Specifically, we are interested in the way in which the classification of divestments, as measured in Chapter IV, relates to the Q-ratios. We, therefore, compare the Tobin Q of the original acquirers by our classification, calculated in the fiscal year before the M&A using equation (25): [25]

<div align="center">

Table XI

	All M&As	Non-divested M&As	Divested M&As	Unsuccessful M&As
Mean Acquirer Tobin's Q	1.117***	1.155***	1.009***	0.975***
Std Errors	(0.083)	(0.105)	(0.110)	(0.121)
Obs. (N)	183	134	49	35

</div>

*** *p<0.01, ** p<0.05, * p<0.1*

As presented in Table XI, we find that the subsample of divestitures classified as unsuccessful (0.975) have, on average, 0.18 lower Q than non-divested M&As (1.155). The difference is significant at the 1% level. Our results appear to be in line with the previous views that management capabilities are positively correlated with Tobin 's Q.[26] Moreover, the results are consistent with those of Malmendier and Tate (2008), who find that firms with a lower Tobin Q value are more likely to carry out questionable M&As. They also find that overconfidence in future cash flows is often the reason for these M&A commitments.

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[25] For the calculation of Tobin's Q, see Section F, Chapter III.
[26] As discussed in Section C of Chapter III.

D. Non-Related Return Fluctuations: Cumulative Average Abnormal Returns

Through Sections A to C, we tracked market-wide changes using ARs and CARs rather than raw returns to analyze market reactions to M&As. However, a further cause of non-M&A-related return fluctuations, namely firm-specific fluctuations, needs to be examined. While some precautions are taken to minimize random noise, observations are likely to contain random noise due to factors that are not related to the M&As we are interested in.[27] We, therefore, estimate the acquirer CAARs, which constitutes the last step of the ESA (Kliger and Gurevich, 2014). Table XII presents the Acquirer CAARs and the t-stats, by classification as set out in chapter IV, in our main event window [-5, 5].

The first row of Table XII shows the results for each of the M&As in our sample. We find that the acquirer CAARs for all the days ex-ante M&A announcement [0] is positive but very moderate in magnitude. The moderate run-up suggests that there is no issue of insider trading across the sample. On the event date [0], the acquirer CAARs increases significantly (1.56%) and appear to increase moderately until Day 4 ex-post M&A announcement, before declining on Day 5. The acquirer CAARs from trading day -2 to +5 are statistically significant at the 1% level. We also note that, by averaging the CARs, the results are almost identical to those presented in Section A (1.8% on Day 5), which implies that our sample is not biased by random noise.

The subsample of non-divested M&As (2) follows a similar trend. The acquirer CAARs of those non-divested are positive, but still very moderate in magnitude in the run-up to the event date. On the event date [0], the acquirer CAARs jump upwards (2.06%), peaking at day 4 (2.8%), before declining on day 5. Again, the acquirer CAARs of those non-divested from trading day -2 to +5 are statistically significant at the 1% level.

The two last rows show the acquirer CAARs by long-term divestment success. The acquirer CAARs of those divestments classified as successful are very moderate throughout the eleven-day period, and the aggregated returns over the eleven-day period amount to 0.15% on Day 5, although not significant (t-stat of 1.07). In line with our previous findings, the acquirer CAARs of those divestments classified as unsuccessful are negative throughout the entire event window. Again, the results

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[27] Transactions with a relative size of less than 1% fifty trading days prior to the date of announcement are omitted from our sample to reduce random noise.

Table XII

Cumulative Average Abnormal Returns for Acquirers by Divestment Classification and Ex-Post Long-Term Success

Cumulative average abnormal returns for the original acquirers within five days ex-ante and ex-post the date of stock exchange announcement of the original acquisition. The CAARs have been winsorized. The sample consists of 192 Scandinavian M&As of at least $100 million in 2019 dollars, completed between 2000 and 2011 Normal returns are calculated using the Market Model 241 to 61 trading days prior to the stock exchange announcement of the acquisition. M&As are identified as divested only if a tearsheet has been reported. M&As are classified as unsuccessful if either the acquirer cites contradictory reasons for the original acquisition and divestment or if the deflated sales price is negative compared to the return that the acquirer could have made if it had been invested in an equal market portfolio of Scandinavian equities over the same period.

Days	(1) Acquirer CAARs: All M&As	(2) Acquirer CAARs: Non-divested M&As	Acquirer CAARs: Long-Term Success	
			(3) Successful	(4) Unsuccessful
-5	0.0012	0.0016	-0.0002	-0.0016
	(0.69434)	(0.90432)	(-0.12565)	(-1.07491)
-4	0.0019	0.0026	-0.0004	-0.00508***
	(1.09794)	(1.45946)	(-0.31527)	(-3.442)
-3	0.00287*	0.00318*	0.00192	-0.00373***
	(1.70351)	(1.7846)	(1.40176)	(-2.52938)
-2	0.00486***	0.00527***	0.00361***	-0.00462***
	(2.88407)	(2.95808)	(2.63292)	(-3.12941)
-1	0.00504***	0.00527***	0.00437***	-0.00453***
	(2.99305)	(2.95546)	(3.19103)	(-3.06607)
0	0.01561***	0.02062***	0.00026	-0.01187***
	(9.26189)	(11.57302)	(0.19094)	(-8.04472)
1	0.0192***	0.02524***	0.00067	-0.01032***
	(11.39013)	(14.16748)	(0.49137)	(-6.99434)
2	0.01896***	0.02381***	0.00408***	-0.0068***
	(11.2484)	(13.36518)	(2.97982)	(-4.60865)
3	0.01843***	0.02546***	-0.00294**	-0.01801***
	(10.93718)	(14.2872)	(-2.14651)	(-12.20169)
4	0.02165***	0.02808***	0.00208	-0.01444***
	(12.84793)	(15.7593)	(1.51907)	(-9.7823)
5	0.01841***	0.02396***	0.00147	-0.0171***
	(10.92665)	(13.44796)	(1.07044)	(-11.58433)
Obs. (N)	192	143	14	35

T-stats are in parenthesis
*** p<0.01. ** p<0.05. * p<0.1

Figure III

Average abnormal Returns and Cumulative Average Abnormal Returns for Acquirers by Divestment Classification and Ex-Post Long-Term Success
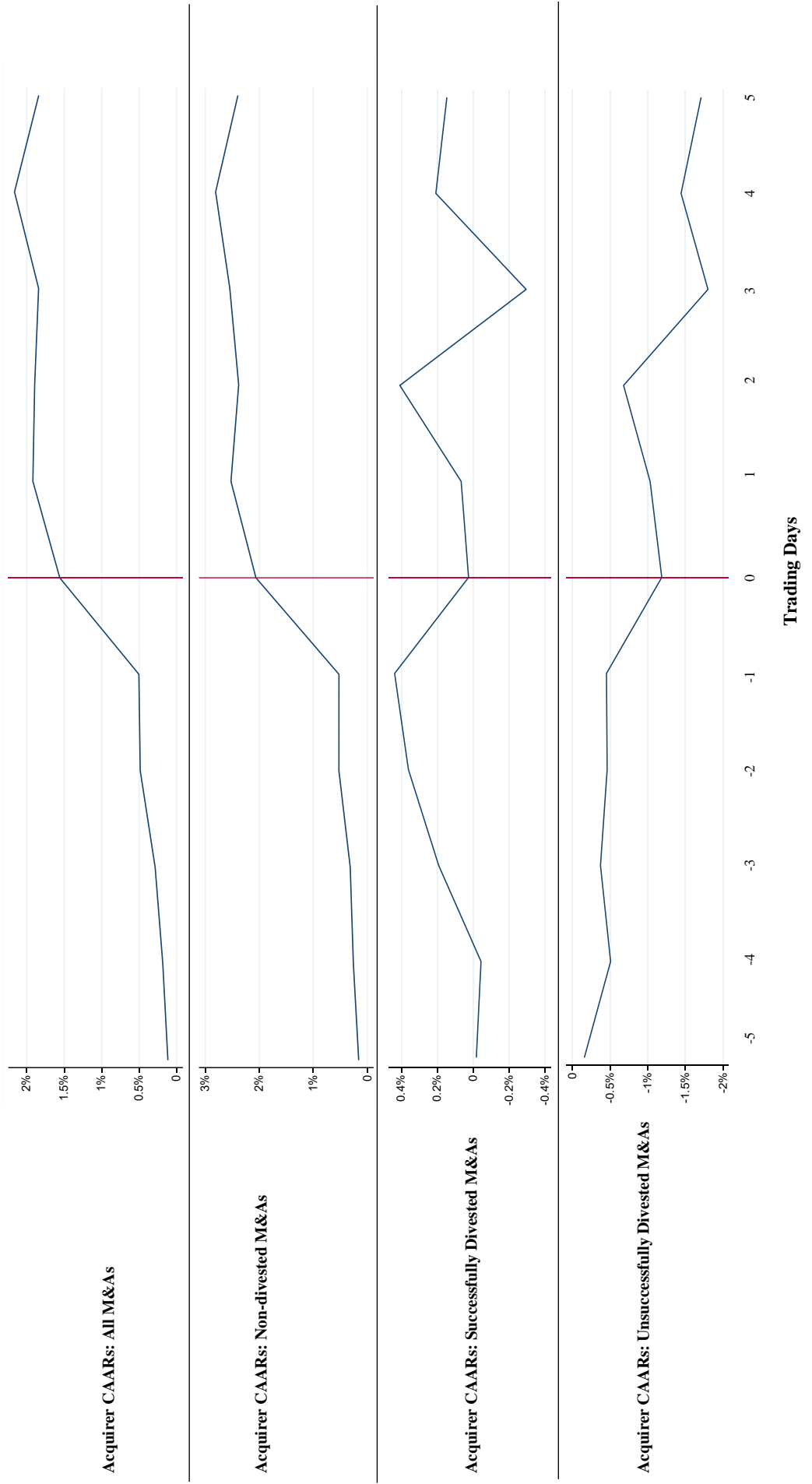
Cumulative average abnormal returns for the original acquirers within five days ex-ante and ex-post the date of stock exchange announcement of the original acquisition. The CAARs are based on ARs that have been winsorized. The sample consists of 192 Scandinavian M&As of at least $100 million in 2019 dollars, completed between 2000 and 2011 Normal returns are calculated using the Benchmark Single Factor Returns Model 241 to 61 trading days prior to the stock exchange announcement of the acquisition. M&As are identified as divested only if a tearsheet has been reported. M&As are classified as unsuccessful if either the acquirer cites contradictory reasons for the original acquisition and divestment or if the deflated sales price is negative compared to the return that the acquirer could have made if it had been invested in an equal market portfolio of Scandinavian equities over the same period.

Acquirer CAARs: All M&As

Acquirer CAARs: Non-divested M&As

Acquirer CAARs: Successfully Divested M&As

Acquirer CAARs: Unsuccessfully Divested M&As

Trading Days

suggest that the stock market is in a position to differentiate between M&As that will be divested unsuccessfully and those M&As that will not be divested. However, we do not find evidence to support the notion that the market is capable of distinguishing between those who have been divested successfully and those who have been divested unsuccessfully.

By graphically illustrating the CAARs from Table XII, Figure III shows that the first three subsamples are drifting upwards prior to the announcement day, which could result from behavioural noise due to investor expectations or market leakage. The subsample of unsuccessful divestments follows a similar but negative trend. The run-ups, however, are so moderate in magnitude that the market appears to be efficient. On the event day [0], the acquirer CAARs for all M&As in our sample and non-divested M&As jumps from near zero to between 1.5% and 2%, while the acquirer CAARs for M&As classified as unsuccessful plunges to below -1%.

According to EMH, price adjustments must not take too long, so that no useful predictions can be made once the reaction has been detected.[28] The two subsamples of M&As that are subsequently divested show irregularities in the acquirer CAARs ex-post announcement; the CAARs of the unsuccessful M&As were partially recovered in the two days following the M&A announcement on the event day [0], before another significant plunge on Day 3. One explanation is that it takes time for the market to absorb information from the event. Another explanation might be that there is a price correction following an initial overreaction to the information.

E.   Research Question 2: Overall Findings of Chapter V

The results of Chapter V appear to support the view that the immediate market expectations of the firm performance of M&As are a good predictor of the long-term success of M&As. Section A shows that the market has lower expectations of those M&As that are subsequently divested, but not significantly different from those that have not been dissipated. The same pattern can be seen in our other subsamples. We also show that the target CARs presented in Section B are generally more positive than the returns of the acquirer, in line with previous views that the ability of the acquirer to operate the targets does not affect market reactions.

The results from the cross-sectional regressions are consistent with our findings in

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[28] See chapter III, Section D.

the previous sections in terms of coefficient signs. We do not find any evidence that the three firm characteristics introduced have a full effect on the acquirer CARs in our sample. However, we do find evidence that the acquirer CARs are linked to our classification of the long-term success of the divestments as measured in Chapter IV, when controlling for other firm characteristics. Based on these results, we further analyze the relationship between the acquirer CARs and the measure of success and find evidence that the market has significant predictive capabilities based on the acquirer's returns. We also find that the acquirers who subsequently divested unsuccessfully have lower q-ratio than those who divested successfully. Since this is not further analyzed, we cannot confidently say that M&As classified as unsuccessful have not been adequately managed or that overconfidence has played a role in the initial M&A strategy leading to unsuccessful divestments. However, the results support the intuition that mismanagement or overconfidence may be a factor in the long-term success of M&As that are subsequently divested.

Finally, the significant CAARs are consistent with the previous findings in Section A, indicating that there is little random noise in the estimates. In terms of coefficients signs, the results in the subsamples are consistent with our previous findings. Figure III illustrates very clearly that the market can distinguish between unsuccessfully divested M&As and those subsequently non-divested M&As.

Conclusion

In this study, we evaluate the long-term success of 196 Scandinavian M&As by identifying ex-post divestitures before we assess the immediate market expectations about firm performance to see whether the market is capable of distinguishing between long-term successful and unsuccessful M&As as measured by subsequent divestitures. First, we compile a data set of divestitures by conducting a post-M&A evaluation of a sample of major Scandinavian M&As that took place between 2000 and 2011, and document that by 2019 more than 25% of the original M&As had been divested. Despite the widely held belief that divestments, such as divorces, reflect failure, the evidence from our findings is mixed. By comparing the reasons for the original M&A and the divestment, only nine or 17% of the divestments appear to represent a failed M&A strategy. Furthermore, by measuring sale-to-purchase ratio for the divestments, we find that almost 45% are sold for more than they originally cost. However, when we deflate the selling price with an average market return across the three Scandinavian countries, we find that 78% of 45 divestitures measured are sold at less than the initial purchase price. The annual market-adjusted return for the median divestments is –8.35%. Nevertheless, based on these measures, 31% of the 52 identified divestitures are classified as successful and thus not the failed strategies suggested by previous scholars. Additionally, we show that the use of capital gains and operating results must be conducted with caution, as the reporting standards for these measures have changed considerably over the last three decades.

In the second part of this study, we find that the overall market expectations about firm performance in the context of the M&A announcements are positive. When we introduce our measure of success, we find that the acquirer returns (both CARs and CAARs) in the event window are significantly lower for those firms which subsequently divested and are classified as unsuccessful than for the divestments which we classify as successful and for M&As which are not divested. This is consistent with our previous findings that not all divestments are necessarily synonymous with failed strategies. The cross-section analysis further examines the relationship between our long-term success measures and the acquirer announcement returns. In a situation where the nature of the M&A announcement is not initially apparent, our results suggest that the market reacts to fundamental information, in line with the semi-strong form of EMH.

We also examine the relationship between the return of the acquirer of those divestments classified as unsuccessful and managerial capacity, as determined by Tobin 's Q. Our results support the view that management capabilities play a role in the long-term success of the M&As in our sample: acquirers in successful divestments has higher q-ratio than acquirers in unsuccessful divestments, consistent with the view that higher q-ratio firms correlate with superior long-term performance.

Given the strengths and limitations discussed in this thesis, there are several starting points on which future research can be built. In order to generalize the findings of our study and to gain a better understanding of the mechanisms that drive abnormal market reactions that surround divestitures, further investigation is needed. The theoretical field of event studies is extensive and, as a result, this thesis has omitted subjects that may merit further investigation. In particular, the divestitures identified in our sample could be seen as new events and examined in more detail. In addition, the cross-section analysis of this study only scratches the surface of potential deal characteristics that may have an impact on the market reactions. It would also be interesting to look more deeply at the topic of behavioural finance in terms of the long-term performance of Scandinavian divestitures.

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Appendix

M&A Tearsheets, Stata-commands and data used as the basis for all regressions can be found in the Excel-file attached to this thesis.

A. Summary statistics after winsorizing.

Table XIII

Variables	Obs	Mean	Std.Dev.	Min	Max	p1	p99	Skew.	Kurt.
AR	192	.013	.042	-.065	.115	-.065	.115	.436	3.283
CAR	192	.018	.058	-.163	.224	-.116	.201	.368	3.89
CAR2	192	.018	.073	-.147	.27	-.12	.261	.532	3.663
CAR3	192	.005	.104	-.304	.291	-.304	.291	-.12	3.598

B. Alternative Table I and Table IV

Table XIV

Year	Number of Scandinavian M&As > 100m USD	Number of Original M&As Divested	Percentage Divested	Number of Norwegian M&As	Number of Swedish M&As	Number of Danish M&As	Average Years Held	Median Target value as percentage of Acquirer value
2000	31	10	32,3 %	6 (3)	18 (5)	7	7,78	31 %
2001	10	4	40,0 %	2 (2)	5 (2)	1 (0)	9,75	28 %
2002	9	2	22,2 %	1 (1)	6 (2)	3 (0)	10,00	2 %
2003	8	0	0,0 %	1 (0)	6 (0)	1 (0)	N/A	N/A
2004	13	4	30,8 %	2 (0)	7 (4)	4 (0)	9,75	5 %
2005	20	4	20,0 %	5 (0)	13 (4)	3 (0)	8,75	18 %
2006	21	7	33,3 %	6 (2)	12 (5)	3 (0)	6,57	39 %
2007	29	7	24,1 %	8 (1)	20 (6)	1 (0)	7,00	7 %
2008	14	5	35,7 %	4 (2)	9 (2)	1 (1)	4,20	31 %
2009	6	0	0,0 %	0 (0)	4 (0)	2 (0)	N/A	N/A
2010	13	4	30,8 %	1 (0)	10 (4)	2 (0)	6,25	21 %
2011	18	2	11,1 %	2 (0)	16 (2)	0 (0)	3,00	10 %
TOTAL	**192**	**49**	**25,52 %**	**38 (10)**	**126 (36)**	**28 (3)**	**7,30**	**19 %**

C: Cross-sectional regressions:

```
. reg CAR_TOTAL2 D_unsuccessful D_merger D_horizontal D_region if days==0,cluster(group_id)
```

Linear regression				Number of obs	=	192
				F(4, 191)	=	3.73
				Prob > F	=	0.0060
				R-squared	=	0.0656
				Root MSE	=	.0715

(Std. Err. adjusted for 192 clusters in group_id)

CAR_TOTAL2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
D_unsuccessful	-.0422726	.0125435	-3.37	0.001	-.0670142	-.0175309
D_merger	.0102017	.0107559	0.95	0.344	-.0110139	.0314174
D_horizontal	-.0129474	.0110113	-1.18	0.241	-.0346666	.0087719
D_region	.0120219	.0109173	1.10	0.272	-.0095121	.0335559
_cons	.0226241	.0118573	1.91	0.058	-.000764	.0460121

```
. reg CAR_TOTAL2 D_unsuccessful D_merger D_horizontal D_region if days==0 & D_divested==0, cluster(group_id)
note: D_unsuccessful omitted because of collinearity
```

Linear regression				Number of obs	=	143
				F(3, 142)	=	0.18
				Prob > F	=	0.9129
				R-squared	=	0.0037
				Root MSE	=	.07288

(Std. Err. adjusted for 143 clusters in group_id)

CAR_TOTAL2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
D_unsuccessful	0	(omitted)				
D_merger	.0080285	.0125155	0.64	0.522	-.0167122	.0327692
D_horizontal	-.0032068	.0127789	-0.25	0.802	-.0284683	.0220548
D_region	.004427	.0127209	0.35	0.728	-.0207198	.0295739
_cons	.0193457	.0142802	1.35	0.178	-.0088836	.0475749

```
. reg CAR_TOTAL2 D_unsuccessful D_merger D_horizontal D_region if days==0 & D_divested==1, cluster(group_id)
```

Linear regression				Number of obs	=	49
				F(4, 48)	=	2.95
				Prob > F	=	0.0292
				R-squared	=	0.2807
				Root MSE	=	.06598

(Std. Err. adjusted for 49 clusters in group_id)

CAR_TOTAL2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
D_unsuccessful	-.0565091	.0216158	-2.61	0.012	-.0999706	-.0130475
D_merger	.0114934	.0214014	0.54	0.594	-.0315371	.0545239
D_horizontal	-.0444767	.0229684	-1.94	0.059	-.0906579	.0017044
D_region	.042576	.0228322	1.86	0.068	-.0033313	.0884832
_cons	.0386102	.0231932	1.66	0.102	-.0080229	.0852433

```
. reg CAR_TOTAL2 D_unsuccessful D_merger D_horizontal D_region if days==0 & D_nation_sweden==1, cluster(group_id)

Linear regression                                     Number of obs   =       127
                                                      F(4, 126)       =      1.95
                                                      Prob > F        =    0.1068
                                                      R-squared       =    0.0509
                                                      Root MSE        =    .07292

                                   (Std. Err. adjusted for 127 clusters in group_id)
─────────────┬────────────────────────────────────────────────────────────────
             │              Robust
  CAR_TOTAL2 │      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
─────────────┼────────────────────────────────────────────────────────────────
D_unsuccessful│  -.0284694   .0147386    -1.93   0.056    -.0576366    .0006979
    D_merger │   .0028802   .0141028     0.20   0.839    -.0250289    .0307893
 D_horizontal│  -.0226922   .0137059    -1.66   0.100    -.0498158    .0044314
    D_region │   .0142056   .0141312     1.01   0.317    -.0137596    .0421708
       _cons │   .0309809   .0143138     2.16   0.032     .0026543    .0593074
─────────────┴────────────────────────────────────────────────────────────────


. reg CAR_TOTAL2 D_unsuccessful D_merger D_horizontal D_region if days==0 & D_nation_norway==1, cluster(group_id)

Linear regression                                     Number of obs   =        38
                                                      F(4, 37)        =      3.32
                                                      Prob > F        =    0.0201
                                                      R-squared       =    0.3185
                                                      Root MSE        =    .06926

                                    (Std. Err. adjusted for 38 clusters in group_id)
─────────────┬────────────────────────────────────────────────────────────────
             │              Robust
  CAR_TOTAL2 │      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
─────────────┼────────────────────────────────────────────────────────────────
D_unsuccessful│  -.0940253   .0279891    -3.36   0.002    -.1507365   -.0373141
    D_merger │   .0400747   .022659      1.77   0.085    -.0058367    .0859861
 D_horizontal│   .0208698   .0245166     0.85   0.400    -.0288057    .0705452
    D_region │   .0163898   .0243259     0.67   0.505    -.0328991    .0656786
       _cons │  -.0185961   .0241896    -0.77   0.447    -.0676088    .0304166
─────────────┴────────────────────────────────────────────────────────────────


. reg CAR_TOTAL2 D_unsuccessful D_merger D_horizontal D_region if days==0 & D_nation_denmark==1, cluster(group_id)

Linear regression                                     Number of obs   =        27
                                                      F(4, 26)        =      0.29
                                                      Prob > F        =    0.8844
                                                      R-squared       =    0.0500
                                                      Root MSE        =    .06625

                                    (Std. Err. adjusted for 27 clusters in group_id)
─────────────┬────────────────────────────────────────────────────────────────
             │              Robust
  CAR_TOTAL2 │      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
─────────────┼────────────────────────────────────────────────────────────────
D_unsuccessful│  -.0283652   .0439775    -0.64   0.525    -.1187622    .0620318
    D_merger │   .0106294   .0217678     0.49   0.629    -.0341149    .0553738
 D_horizontal│  -.0183306   .021827     -0.84   0.409    -.0631967    .0265355
    D_region │  -.0098742   .0420622    -0.23   0.816    -.0963343    .076586
       _cons │   .0372473   .0447339     0.83   0.413    -.0547046    .1291993
─────────────┴────────────────────────────────────────────────────────────────
```

LOWER BOUND

```
. reg D_unsuccessful CAR_TOTAL2  if days==5 & D_divested==1, cluster (group_id
```

```
Linear regression                               Number of obs    =         49
                                                F(1, 48)         =      16.63
                                                Prob > F         =     0.0002
                                                R-squared        =     0.1698
                                                Root MSE         =     .42028
```

(Std. Err. adjusted for 49 clusters in group_id)

D_unsucces~l	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
CAR_TOTAL2	-2.525176	.6191857	-4.08	0.000	-3.770132	-1.28022
_cons	.7211556	.0592347	12.17	0.000	.6020561	.840255

UPPER BOUND

```
. reg CAR_TOTAL2 D_unsuccessful if days==5 & D_divested==1, cluster (group_id)
```

```
Linear regression                               Number of obs    =         49
                                                F(1, 48)         =       8.43
                                                Prob > F         =     0.0056
                                                R-squared        =     0.1698
                                                Root MSE         =     .06858
```

(Std. Err. adjusted for 49 clusters in group_id)

CAR_TOTAL2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
D_unsuccessful	-.0672444	.0231588	-2.90	0.006	-.1138084	-.0206805
_cons	.0507523	.0203593	2.49	0.016	.0098172	.0916874