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Overconfidence

- A Study of Managerial Hubris in the Nordic Market

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Abstract

- Title:** Overconfidence – A Study of Managerial Hubris in the Nordic Market
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- Key words:** Managerial hubris, Mergers and acquisitions, Merger motives, Shareholder gains, Market timing
- Purpose:** The purpose of the study is, by examining completed tender offers, to measure if managerial hubris can be observed in the Nordic market.
- Methodology:** The study uses a quantitative approach following Berkovitch and Narayanan (1993) and Hodkingson and Parkington (2007). Correlation analysis is used to study the relationships between wealth gains of the transaction parties.
- Theoretical perspectives:** The theoretical frame of reference is rooted in contemporary financial research of mergers and acquisitions, takeover motives and corporate governance. Through the presented background and definitions, the concept of hubris can be understood.
- Empirical foundation:** Short-term announcement effects have been studied by using cumulative abnormal returns for the deal sample. These have been calculated through an event study using the market model method.
- Conclusions:** The tender offers studied during the time period 1993 – 2008 are driven both by synergy and non-synergy motives, including hubris. However, since a majority of the deals in the total sample show negative total gains, in contrast to similar previously studies, there is a majority of the deals that seem to be driven by either agency or hubris motives.
- The deals financed by cash show evidence of being driven by hubris to a higher extent compared to stock. The results also indicate that the deals in the fifth merger wave have been driven by hubris to a higher extent than the deals in the recent sixth merger wave.

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1. INTRODUCTION

In this first chapter of the thesis the research topic is introduced. Firstly, a brief background of the subject is presented. Secondly, the research problem is discussed and then summarized in the purpose of the paper. Finally, delimitations of the paper are explained and the structure of the thesis is outlined.

1.1 Background

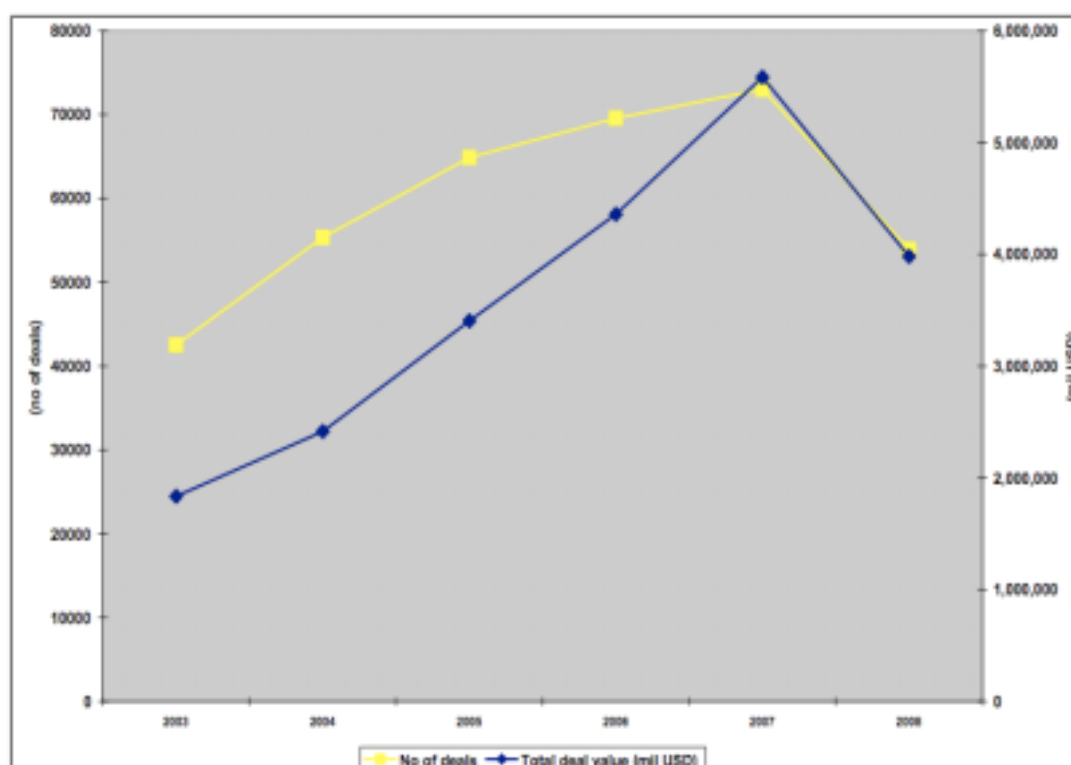
Overconfidence, or an unrealistic belief held by managers in acquiring firms that they can manage the target firm and its assets more efficiently than the target firm's current management, may be one reason why bidders' shareholders on average gain no profits from mergers and acquisitions (Barney & Hesterly, 2008).

“Mega mergers are almost always fuelled by three things: egos, conceit and a deep-seated need for power”, Saigol (2007) wrote in an article trying to make sense of Royal Bank of Scotland's (RBS) winning bid for ABN Amro. The RBS management team, lead by Sir Fred Goodwin, justified the 70% premium with cost synergies alone (FT, 2007). About one year later, in February 2008, RBS was 68 per cent owned by taxpayers¹ and was heading for the largest annual loss in British corporate history (Hoise, 2008). Sir Tom McKillop, former RBS chairman, told the members of the Commons Treasury Select Committee: “In retrospect we bought ABN Ambro at the top of the market. So anything we paid was an error. Everything we paid, basically, has not been worth it. In fact, we are sorry we bought ABN”. (The Guardian, 2009)

In our thesis we aim to investigate theories of overconfidence, primarily the hubris hypothesis, as above illustrated at its very extreme, in a Nordic setting. The hubris hypothesis, first presented in 1986 by Richard Roll, will be used as a foundation for the thesis and will be accompanied by related research on overconfidence, merger and acquisitions (M&A), corporate governance, and implications of these for the Nordic market.

¹ The winning RBS bid for ABN Ambro – following a bidding war with Barclays – resulted in a £20 billion government bailout in November 2008 (The Independent, 2008).

Figure 1.1. *Global deals by volume and value in the sixth takeover wave.*
(Zephyr, 2008 Annual M&A Report; “ZEPHYR published by BvDEP”)



1.2 Problem Discussion

The growing number of global M&A in the years leading up to the current financial crisis, and the abrupt decline of deals in the summer of 2007 makes the topic of motives behind merger activity highly relevant. One of the most crucial questions within M&A is if the decision to merge two companies results in value creation to the companies' shareholders or not.

Previous research concludes that M&A are value creating on average (e.g. Andrade et al, 2001, Betton et al, 2008), but that there are differences in returns to bidder and target firm shareholders. Andrade et al (2001) is one of many papers that has found target shareholders gaining significantly upon announcement while bidders make no profit on average. This finding makes it interesting to study takeover motives and to what extent hubris can be derived from the distribution of shareholder wealth.

It is well known that M&A come in waves. As of today, six² completed merger waves have been studied in the academic literature: the early 1900s, the 1920s, the 1950s, the 1980s, the 1990s, and the 2000's. Determinants explaining merger waves and merger activity have been examined by several researchers (e.g. Jarrell et al. 1988; Bruner, 2003; Rhodes-Kropf et al, 2005; and Martynova & Renneboog, 2008) and both economical and behavioral triggers have been identified. Martynova & Renneboog (2008) conclude, after studying 65 research papers, that takeover activity is usually disrupted by a steep decline in stock markets and a following economic recession. While each merger wave has exhibited unique patterns and underlying motives, all six completed waves have occurred in periods of economic recovery, rapid credit expansion and booming stock markets. Martynova & Renneboog (2008) also point out behavioral factors, such as managerial or investor overconfidence, to explain the cyclical behavior of M&A.

In our thesis we are particularly interested in examining these behavioral factors, or motives, of takeovers. Berkovitch & Narayanan (1993) suggest a categorization of merger motives into synergy, agency and hubris. This categorization is also used on our thesis. The motives primarily differ in managerial attitude, its influence on decision-making and the results of this.

Firstly, mergers can be driven by synergy. Several studies have shown that synergies in fact are the dominating motive for mergers (e.g. Bradley et al, 1987; Goergen & Renneboog, 2004; Betton et al, 2008; Kiyamaz & Baker, 2008). The theory that value is created through synergies within M&A is in line with the neo-classical theory of mergers and it assumes that managers act to maximize shareholder value by reacting to industry shocks. (Rosen, 2006; Gaughan, 2007). In general, studies finding support for synergistic gains also conclude that mergers create value of behalf of the shareholders of the combined entity.

Secondly, there is the argument that agency theory functions as a takeover motive. A classic paper that explains agency problems within takeovers is Jensen (1986), which states that self-interested managers use excess cash (free cash flow) to make bad acquisitions when they have run out of value creating investments. The result of this is empire building rather than shareholder wealth enhancement. The result is a transfer of wealth from the acquirer firm's shareholders to the acquirer firm's management.

² Moeller and Brady (2007) are one example of authors defining the sixth merger wave. The wave began in 2003 and ended with the financial crises (as seen in figure 1.1).

Arguments of the prevalence of this behavior are widely held throughout academia and examples of the researchers that have provided support for this view are Lang et al (1991) and Harford (1999, 2005).

Thirdly, there is the argument of hubris as an explanation of merger activity. Roll's (1986) hubris hypothesis points out overconfident managers that overestimate the creation of synergetic value as one factor explaining the high number of value-destroying M&As. Simply put, hubris is evident when bidding managers pay too much for acquiring firms (Roll 1986). Malmendier & Tate (2005, 2008) uses the term overconfidence to explain why hubris occurs. The result of hubris is a wealth transfer from the bidding firm shareholders to the target firm shareholders and no significant synergies. The famous American investor Warren Buffet commented on managerial hubris as a fairytale where the bidder see themselves as a princess that can turn a toad into a handsome prince with a gentle kiss. By incorporating a target in the own company, many corporate acquirers believe that miracles will happen with the target firm's operations. As Warren Buffet states in the 1981 Berkshire Hathaway Annual Report:

"We have observed many kisses but very few miracles"

In the quote Buffet indicates that acquirers may overestimate synergy gains from a merger and their ability to realize these synergies. In overestimating their own ability to create miracles with the target, acquirers simply pay too much for their targets and that is the foundation of the hubris hypothesis.

Previous research on motives of M&A and managerial hubris has generally focused on studying the American market (e.g. Berkovitch & Narayanan, 1993; Andrade et al, 2001; Kiyamaz & Baker, 2008), the UK market (e.g. Raj & Forsyth, 2003; Hodgkinson & Partington, 2007), and the Japanese market (e.g. Lin et al, 2008). Since we have not seen a recent study of hubris in a Nordic context, we believe the results of such study would generate important contributions to research.

We aim to study the M&A markets in Sweden, Denmark, Norway, Finland and Iceland, markets that we collectively refer to as the Nordic takeover market. We find several reasons for seeing these five markets as one integrated Nordic market. Firstly, these countries have a strong connection to each other due to strong historical bonds and a common company legislation which is described as similar across country borders, but distinct from for example France or Germany (La Porta et al, 1998). The Nordic

countries share a long tradition of co-operation in the development of private law that has resulted in striking legislative similarities (Bernitz, 2004). Secondly, due to the similarities in legislation, there are also striking similarities in corporate governance structures. Thirdly, stock market institutions of the countries are closely connected. The lists of Copenhagen, Stockholm, Helsinki and Reykjavik have been merged together through OMX-Nasdaq and the OMX Nordic All-Share Index. These arguments indicate that the Nordic markets share characteristics and can be seen as one single market. (Puttonen et al, 2007) We will therefore regard the Nordic countries as one single market in our study since we believe that the similarities above create a similar behavior across the five countries in an M&A context.

The Nordic market also possesses interesting characteristics for this field of study. Together with The United Kingdom, the Nordic market is the busiest in terms of merger activity within the European Union (Bernitz, 2004). For example, between 1990 and 2002, there were 19 successful M&A bids every year on average in the Swedish stock market only. Among the Swedish listed companies, 8% were acquired through a public takeover bid every year on average, a number that can be compared to 5% for the British stock market, which is often considered to be the most open in Europe (Skog, 2004).

Besides the argument of merger activity, the Nordic countries are interesting due to unique corporate governance practices. The Nordic market is often described as a hybrid between the Anglo-American market oriented governance system and the bank oriented system common in continental Europe, sharing characteristics of both; well functioning stock markets and large stockholders (Oxelheim & Wihlborg, 2008). This unique corporate environment motivates an investigation of whether the Nordic corporate governance features have affected the presence of hubris in Nordic takeover activity, giving different results than previous studies made in other markets.

1.3 Problem Formulation

By using Berkovitch and Narayanan's (1993) model (previously used by Goergen & Renneboog in 2004 on European M&As, and Partington & Hodkinson on British M&A in 2002), where there is a separation between the agency, synergistic gains and hubris, we aim to investigate hubris in particular. By investigating wealth effects of bidders and targets, we seek to investigate if hubris has been evident in the Nordic markets during

the time period 1993-2008. In our deal sample we have focused on completed tender offers. This has been done for two reasons. Firstly, we have chosen completed transactions to study actual takeover motives in deals that have gone through. Secondly, we have focused on tender offers because the actions of the bidding management are the focus of the hubris hypothesis (Roll, 1986).

Furthermore, we are interested in studying if the level of hubris varies in deals using cash as opposed to stock. By studying the fifth and the sixth takeover waves we want to study if hubris is less evident after the development of Nordic corporate governance since the beginning of the 2000's.

1.4 Purpose

The purpose of the study is, by examining completed tender offers, to measure if managerial hubris can be observed in the Nordic market.

1.5 Delimitations

Our sample consists of 88 completed deals, out of 1106 events of mergers and acquisitions during the studied time period in the Nordic market. The findings in this paper may therefore not be representative for other types of M&A such as friendly mergers and private settled transactions.

Furthermore, it should be pointed out that there are many interesting aspects of the subject. Our study is restricted to subsamples measuring variances in hubris in payment modes and between the fifth and the sixth merger waves. However, there could be many interesting additional subsamples. For example differences between industries, managerial compensation and effects of multiple bids. The latter is commonly mentioned in previous studies of hubris where the winner's curse and learning often are referred.

Finally, Berkovitch and Narayanan's model focuses on explaining themes in the studied population and restricts the possibility of interpreting the level of hubris in individual events. By using the model to interpret short-term announcement effects we do not evaluate the actual long-term results, such as whether the pre-deal expectations actually are fulfilled ex post.

1.6 Structure of the thesis

Following this chapter, Chapter 2 will provide a theoretical frame of reference. In this chapter, relevant topics will be outlined together with contemporary empirical research. Subsequently, Chapter 3 discusses and presents the methodology used for the empirical study. This will also include the hypothesis that we test on the Nordic market. Upon the formulation of the hypotheses and the preparation of the dataset, Chapter 4 will outline the empirical results. In Chapter 5 the empirical findings are analyzed with the background of the theoretical frame of reference. Finally, Chapter 6 will summarize the main findings, present the conclusions that can be drawn from the sample and suggest further research.

2. THEORETICAL FRAME OF REFERENCE

This second chapter presents the theoretical frame of reference for the study together with previously conducted research. Firstly, relevant general theory and contemporary research performed on M&A is presented. Secondly, theory on Nordic corporate governance is presented together with international perspectives. Finally, the takeover motives, including hubris, are thoroughly explained.

2.1 Mergers & Acquisitions

The first section will outline a background on selected topics of M&A that we believe will add value for the reader. Firstly, a definition and the most common motives for M&A are presented. Secondly, we will outline shareholder effects related to M&A gathered from relevant previous studies of the issue. Finally, we present some research of merger cyclicalities and the Market Timing Hypothesis.

2.1.1 Definition

Gaughan (2007) defines a merger as the combination of two corporations, where only one corporation survives as a consolidated entity. While mergers usually are friendly in nature and the management teams are all participants in the negotiation process, acquisitions or takeovers often are negotiated among owners via tender offers that often exclude participation of the target's management. In tender offers the bidding company usually contacts the target shareholders directly and offers to purchase some or all of the shareholders' shares in a corporation. The price offered is usually at a premium to the market price. M&A is commonly used in a wider sense to refer to aspects of corporate strategy, corporate finance and dealing with the buying, selling and combining of companies. (Gaughan, 2007) In our thesis we will not incorporate such broad aspects of M&A, but focus on tender offer deals.

2.1.2 Shareholder Effects of M&A

M&A activity is expected to lead to profit optimization and shareholder value creation, but extensive research has found differences in gains of wealth for bidders and targets (e.g. Asquith, 1983; Barney & Hesterly, 2008). Jensen and Ruback (1983) conclude from empirical evidence that the value-weighted sum of takeover-induced abnormal stock returns to bidders and targets is positive and significant, in line with the value creation argument of M&A. Betton et al (2008) present estimates of total takeover gains using a comprehensive sample of fifteen thousand initial control bids for U.S. targets over the period 1980-2005. They found that the sum of the combined abnormal returns over the run-up and announcement periods averages is a statistically significant 2%³. Thereby, total takeover gains are positive on average.

However, there is a difference between gains to bidders and targets. Martynova and Renneboog (2008) summarize 65 studies, with the majority studying short-term announcement effects, which supports that takeovers are expected to create value, with the majority of the gains accruing to the target shareholders. Share prices of target firms significantly increase at and around announcement of the bid (see Eckbo, 1983; Schwert, 1996). Andrade et al (2001) study 3 688 firms in the period 1973-98 and find a 16% abnormal return for target firms at announcement. Bidders, on the other hand, realize no gains on average in the short term around the announcement date (Eckbo, 2008). Andrade et al (2001) find negative abnormal returns for acquirers of -0.7%, an estimate that could not be statistically distinguished from zero. The distribution of gains may not be surprising in a rational perspective since the targets shareholders usually hold most of the bargaining power. The magnitude of these gains and their distribution among bidders and targets vary across time and are also depending on the deal characteristics.

Andrade et al (2001) investigates method of payment's implication for abnormal returns. They found that target shareholders are better off when there is no equity financing in the deal, with a 20.1% abnormal return. M&A financed with stock saw abnormal returns to acquirers of -1.5% compared to positive 0.4% without stock. Furthermore, overall value creation of stock-financed mergers is around zero when equity is used compared to no stock transactions where the total gains are 3.6%. The question can therefore be raised why then stock is used in M&A, a topic we will further investigate in section 2.1.5

³ This corresponds to Andrade et al's (2001) study of 3,688 firms 1973-98 where the combined abnormal return at announcement is 1.8 % for bidder and target shareholders.

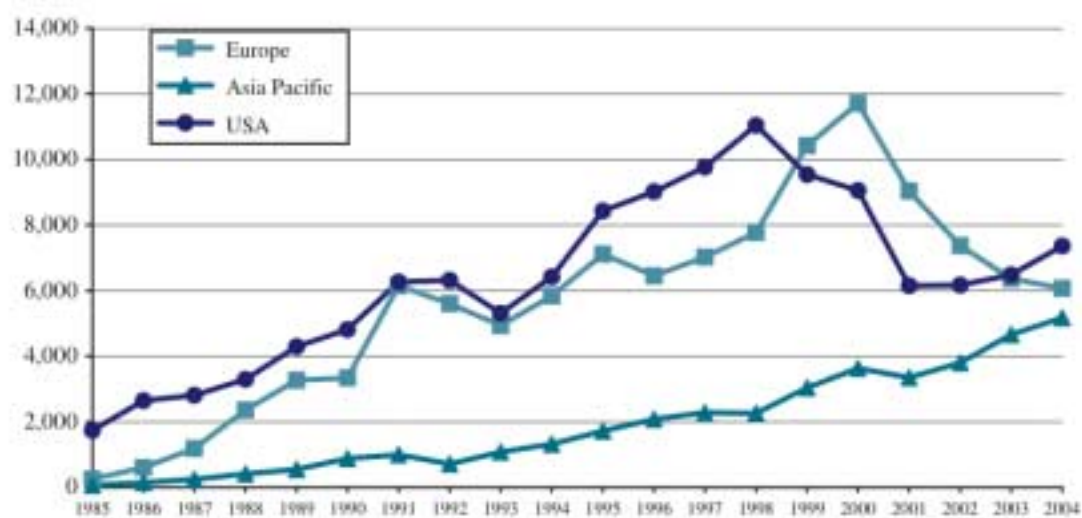
about market timing.

An alternative to short-term shareholder wealth effects when studying takeovers is to study the post-merger firm's long-term performance. However, this is commonly expressed as problematic. Firstly, there are methodology problems in isolating pure takeover effects from other events occurring in the time period following the acquisition (Jensen & Ruback 1983). Secondly, short and long-term studies often assume capital market efficiency. Rosen (2006) argues that the market tends to overestimate the potential merger gains on announcement and revises expectations downward when more information is released over time.

2.1.3 Merger Activity and Waves

It has been established that merger activity appears in waves, and as of today we have seen six completed waves – see appendix 1 for a detailed outline (Antoniou et al, 2008; Gaughan, 2007). The term “takeover wave” reflects the wave pattern of total value, and total number of takeover deals over a time period. While early takeover waves are well documented in the US, reliable evidence in Europe is only available from the early 1980s. The lack of data and empirical studies of earlier European M&A activity does not mean that transactions were not present, they may have occurred at the same time period as in the US but on a smaller scale. (Martynova & Renneboog, 2008) Since the 1980s there has been a strong growth of European M&As and by the end of the 1990s it reached similar deal levels to those experienced in the US, as seen in Figure 2.1.

Figure 2.1 *Worldwide merger waves since 1985 – total number of deals*
(Thomson financial securities data)



Several researchers have examined determinants explaining merger waves and merger activity (e.g. Jarrell et al, 1988; Bruner, 2003; and Martynova & Renneboog, 2008) and both economical and behavioral triggers have been pointed out. Where the economic determinants possess logic and a rationale for the formation of a wave, the behavioral determinants of M&A seem to constitute non-rational managerial and investor overconfidence – something that has been visible particularly at the end of merger waves (Martynova & Renneboog, 2008; Harford, 2005).

The economic triggers derive from economic, regulatory, and technical shocks and come in the form of economic expansion that motivates companies to grow in order to meet the growing aggregated demand on the economy (Mitchell & Mulherin, 1996; Gaughan, 2007). Harford (1999) showed that shocks themselves are not generally enough to create a merger wave. By studying 35 intra-industry waves between 1981-2000 his research found that capital liquidity was necessary to form a wave.

The behavioral motives of M&A accrue from managers and the markets perception and efforts to cope with perceived market misvaluations (Gaughan, 2007). Rhodes-Kropf et al (2005) and Harford (2005) are some researchers that have debated whether misvaluations can be triggers of merger waves. Gaughan (2007) points out that these authors do not believe that misvaluation solely explain merger waves, but can play an important role.

Martynova & Renneboog (2008) discusses the explanation rate of various triggers in the completed merger waves and find that no single theory is able to explain the phenomenon. While each merger wave has exhibited unique patterns and underlying motives, all waves have occurred in periods of economic recovery, rapid credit expansion and booming stock markets. It is also interesting to note that the completed waves all ended with the collapse of stock markets. (Martynova & Renneboog, 2008) The most consistent finding is that takeovers that occur in an early stage of a wave are triggered by industry shocks. (Gaughan, 2007)

2.1.4 Merger Momentum

There are several theories explaining why merger waves form. A popular theory regarding misvaluations is the theory of investor sentiment, i.e. merger momentum, and arises from investors being overoptimistic about (short-term) takeover gains. Merger

momentum can result from investors grouping together, possibly with a spillover effect to managers, and becoming overoptimistic about mergers announced during a particular time period, especially when previous mergers create synergies. When investors gain more information over time, the increase in bidder's stock price should reverse in the longer time period as beliefs are replaced by actual results – thereby creating cyclical patterns. (Rosen, 2006)

Furthermore, Rosen (2006) suggests that firms announcing acquisitions during a hot market⁴ perform no better, and presumably worse, all else equal, than deals announced at other times. Empirical evidence of investors being overly optimistic in “hot markets” is primarily found in the IPO market (e.g. Loughran & Ritter, 1995), but Rosen (2006) mean that the same phenomenon could exist in merger markets. Hence, merger activity is cyclical. Even though merger momentum primarily focuses on investors' actions, spillovers on managers are in fact recognized (Rosen, 2006). Merger momentum is therefore consistent with overoptimism theories, such as the Hubris hypothesis presented further in section 2.4, as managers may be imbued with the same optimism as investors during hot markets (Harford 2003, 2005).

2.1.5 The Market Timing Hypothesis

In 2002, Baker and Wurgler presented the Market Timing Hypothesis (MTH) that originally is a hypothesis related to capital structure⁵. The basic idea is that managers are more likely to issue equity when they are overvalued, in line with the Pecking Order theory (Myers 1984, Myers & Majluf 1984). The MTH, as well as the Pecking Order, explains mispricing by allowing for information asymmetry between the managers of the firm and the market. Supporting this argument, Dong et al (2003) and Shleifer and Vishny (2003) found that mergers seem to be more frequent when bidders appear to be overvalued⁶. This explains why market mispricing can be considered as a driver of market timing behavior.

⁴ A hot merger market may not necessarily be the same as a merger wave, according to Rosen (2006). Waves traditionally refer to the number or value of mergers rather than a positive market for merger announcements, although they often coincide (Rosen 2006).

⁵ In the 2002 article Baker and Wurgler referred to it as the “*Market-timing Theory of Capital Structure*”. However, The majority of the follow-up research uses the term *Market Timing Hypothesis*. (Pagenkopf 2009) The term Market Timing Hypothesis (MTH) will be kept throughout this thesis.

⁶ Dong et al (2003) and Shleifer and Vishny (2003) both use a Book-to-market method to conclude on overvaluation.

Baker and Wurgler (2002) state that managers, according to the MTH, have the ability to identify misvaluation, or at least think they can identify misvaluation, and therefore they take opportunistic advantage by timing transactions. Furthermore, as the MTH argues that managers have the ability to time the market by using overvalued equity as a payment for takeovers. Shleifer & Vishny (2003) and Rhodes-Kropf & Viswanathan (2004) present two models that predict that managers' use overvalued equity as cheap currency for acquiring real assets, especially in bull markets where overvaluation can vary significantly between firms. According to Shleifer & Vishny (2003) bidding managers will, in this respect, take advantage of the mispricing premium over the longer term, when overvaluation would be expected to be corrected.

On the contrary, Myers (1984) states that "there is no way firms can systematically take advantage of purchasers of new equity in rational expectations equilibrium", which makes empirical tests of the hypothesis most interesting. Andrade et al (2001) show that abnormal returns for bidders are worse both in the long and short term when takeovers are financed with stock compared to no stock, which does not provide underlying support for the MTH.

Baker and Wurgler (2002) however state that the critical factor in the MTH is that managers have to believe that they can identify mispricing and through that, time the market. With reference to this, Graham and Harvey (2001) surveyed 329 CFOs and found that two thirds state that under- or overvaluation when issuing equity is important or very important. Correspondingly, Brau and Fawcett (2006) show in their survey of 336 CFOs that firms do regard timing the market as a major factor in their financing decisions. Therefore, we can observe consistent evidence for Baker and Wurgler's critical factor. However, the question remains if and when managers are successful in this aspect.

The MTH is a quite recent concept and needs to be researched further (Hovakimian et al, 2004). Most previous empirical research is based on equity issues and not often specifically towards managers' timing of M&As.

2.2 Corporate Governance Aspects

M&A are, like other aspects of corporate decision making, affected by the corporate governance systems that are in effect in the country of listing. Therefore, and because of

the fact that there are considerable differences in the corporate governance systems of different countries, corporate governance aspects are a vital part of the paper.

2.2.1 M&A and The Market for Corporate Control

Previous research has outlined many drivers of M&A. One of these is how the M&A market can function as a tool for aligning management's efforts with shareholder value creation through the market for corporate control. Manne (1965) provides the view of M&A as a disciplinary mechanism, where the threat of a takeover keeps the managers efforts aligned with the best interests of the stockholders. The logic is that firms whose managers utilize the resources inefficiently will have lower stock prices and therefore be more attractive takeover candidates. Therefore, since an acquisition of the firm could entail the forced departure of the management team, their efforts are focused on utilizing their corporate assets optimally, thereby keeping the value of the firm's stock at a high level. (Manne, 1965)

Jensen & Ruback (1983) states evidence that indicates that corporate takeovers generate gains that target firm shareholders benefit, and that bidding firm shareholders do not lose. Several sources of value creation are mentioned, including synergy, through reduction in production and distribution costs, various tax advantages, the elimination of inefficient target management or the creation of market power. The authors mention that the creation of market power is not a source of value creation and that it is impossible to, by studying the abnormal returns of merging firms, distinguish between the different sources. Furthermore, the authors state that it is difficult to find managerial actions, related to corporate control, that harm stockholders. (Jensen & Ruback, 1983) This, together with the authors view of the M&A market as an arena in which managerial teams compete for the right to control corporate resources, leaves the market for corporate control, as the possibility of eliminating inefficient management as one of the most important driving forces of M&A in the American market.

The reason for bringing in the market for corporate control in the paper is twofold. Firstly, hubris infected managers' overestimate their ability to extract synergies in mergers and therefore pay too high premiums. This implies inefficiency in the market for corporate control. Secondly, we believe that the market for corporate control, due to a difference in corporate governance systems, is less developed in the Nordic region than

in the United States (an argument supported by e.g. Clarke, 2007), where a majority of the previous research is from, and that this would be a part of the explanation for a difference in the extent of hubris.

2.2.2 International Corporate Governance Aspects

There are distinct differences in the corporate governance systems of the countries in the world. The United States and the United Kingdom, countries in which the majority of previously conducted research has been performed in, have adopted a market oriented corporate governance system. This system is based on the equity markets, both for companies in acquiring funds and for control of firm activity. Because of this, the market for corporate control is an essential part of the corporate landscape in these parts of the world. (Clarke, 2007)

In contrast, Continental Europe and the Nordic region have adopted a bank-oriented system. This system is to a lesser extent dependant on the equity markets and more on institutions and banks and does not rely on the equity markets for keeping the companies competitive. Companies often have close relationships with banks and large owners that provide access to capital needed for the companies' operations. These parties therefore functions as monitoring mechanisms in the absence of strong ownership and the discipline that the market of corporate control provides in the US and in UK. To maintain these relationships, it is important for the companies to act in the best interest of the stakeholders. (Clarke, 2007) Moreover, there are arguments that the Nordic countries have adapted a hybrid corporate governance system that incorporates aspects of both the market oriented and the bank oriented systems (e.g. Oxelheim & Wihlborg, 2008). Even if research suggests that the different corporate governance systems may converge in the future, it is only one possible scenario and does not mean that different systems will end but merely coexist (Pedersen and Thomsen, 1997).

On the other hand, the Nordic markets possess other traits that should counter the effects of the weaker market for corporate control. Firstly, the wide use of dual class shares could help mitigate opportunistic and erroneous behavior. Up to 60 % of publically traded companies encompass this system (Puttonen et al, 2007), under which one class of shares has superior voting rights as opposed to others, leading to a concentration of the control of the company. Under the system, the management of the

bidding firm will need the approval of the controlling shareholders in order to undertake M&A (Skog, 2004). This should to an extent reduce the manager's abilities to undertake value destroying M&A, even in the absence of a strong market for corporate control.

Secondly, the fact that many Nordic companies have a supervisory board ought to function as another counter effect for the weaker market for corporate control. The system entails that companies have an additional board of directors which includes stakeholder group representatives such as employees and managers need the approval from these boards when undertaking major corporate decisions, such as M&A (Clarke, 2007). The structure can work as an effective anti takeover mechanism, when the company is confronted with a bid, which should mitigate shareholder value destructive behavior. The fact that bidder management needs to gain votes from two separate boards and that the boards sometimes hold meetings with yearly intervals makes shareholder value destructive behavior even more difficult to pursue (Bebchuk et al, 2007). So the question is if these regional characteristics, with dual class share system and two-tier boards, can outweigh the effects of a weaker market for corporate control in Nordic M&A.

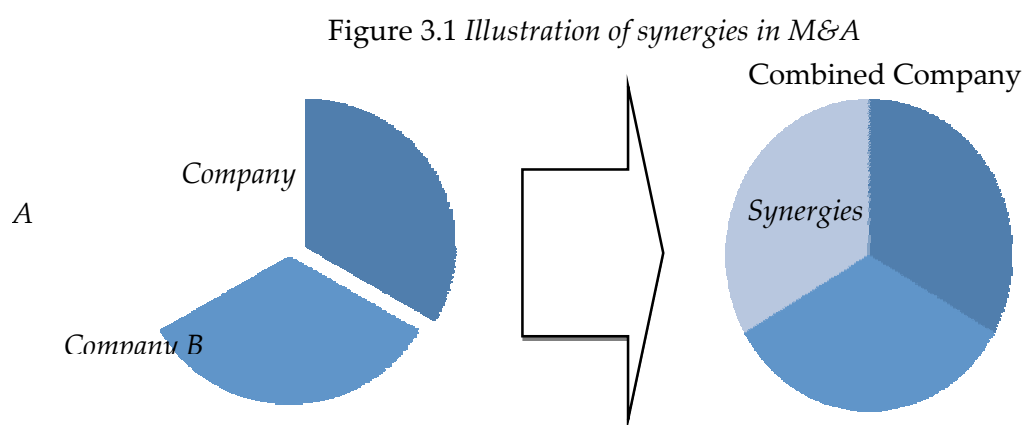
2.3 Merger Motives

There are many rationales for why firms engage in merger activity (Mukherjee et al, 2004). On the one hand, there are explicit motives that aim to maximize shareholder value in the form of faster market share growth, synergies and diversification. On the other hand, there are implicit value destroying motives such as the agency motive and hubris. Berkovitch and Narayanan (1993) adhere to this view and classify merger motives into synergy, agency and hubris, an approach that also follows this paper. This section outlines the first two of these opposing merger motives and functions as a background to the following section about hubris.

2.3.1 Synergy

The most cited explicit motives for M&A are faster growth, synergies and diversification. The first term implies that a justification for a specific deal price is that a transaction will give faster growth compared to organic and may also give access to the counterparty's markets, capabilities and customer base. Secondly, synergies in form of operational and

financial are also often mentioned in M&As and refer to the type of reaction where two substances or factors combined produce a greater effect than the two standing alone could account for. This is illustrated below.



Operating synergies include both economics of scale and economics of scope and occur in form of cost reductions and revenue enhancements. Financial synergies refer to when the impact of a merger is a lower cost of capital for the combined entity. The creation of synergies in M&A is in line with the neo-classical theory of mergers that assumes that managers act to maximize shareholder value by reacting to industry shocks. (Rosen, 2006) Several studies have provided evidence for synergies as the primary motive for M&As and report that synergistic gains are value creating (e.g. Bradley et al, 1987; Berkovitch & Narayanan, 1993; Andrade et al, 2001; Kiyaz & Baker, 2008).

The third explicit motive, diversification, where the justification lies in a portfolio approach in managing business where the growing company seeks to expand operations outside its current industry category in order to mitigate business risk. Diversification has lost importance over the years as a driver of M&A but was a main motive in the wave of the 1950s. (Gaughan, 2007)

The sole classification of merger motives into these explicit motives of faster growth, synergy and diversification does not take all merger motives into account and needs to be accompanied by the implicit merger motives. In doing this, faster growth and diversification can be incorporated into the synergy category, since the merged firm encompasses something that was not available for the unmerged firms alone. Thereby,

the synergy motive can be positioned against the two remaining opposed categories of merger motives; the agency motive and hubris.

2.3.2 Agency Theory

A second rationale for merger activity following synergy is agency theory (Berkovitch & Narayanan, 1993). The theory is rooted in the, by Berle and Means (1934) raised issue of, separation of ownership and control. The problem that arises with the separation of ownership and control within corporations is that management has the possibility of acting in their own self-interest and not in that of the shareholders. The term agency theory is derived from the notion of managers being the agents of the shareholders, the principals, and appointed to act in their best interest. Agency theory focuses on the actions of the individual managers - the agents - and the outcome of their actions affects the wealth of the shareholders - the principals -, therefore the theory is essential for the paper. (Berle & Means, 1934)

Within M&A, agency problems take different forms. Mueller (1969) states that if managers are driven by shareholder value maximization, merger activity should go down as the possibilities for synergistic mergers disappear. This is not the case however, it is concluded, and managers seem to adhere to the Growth Maximization Hypothesis. This infers that managers, for various reasons, wish to focus their labors on maximizing the size of their enterprises, without regard to the profitability of these transactions.

Lewellen et al (1970) states a similar view and concludes that management tends to put their own self-interest before that of the shareholders. This could result in actions that harm shareholder value, despite the fact that management often – through compensation packages and stock – have ownership in the firm themselves. This issue becomes most apparent when management compensation is more closely tied to firm revenue than firm profitability. Under these circumstances, managers have incentives to grow the firm through acquisitions, despite the lack of synergies they entail. Murphy (1985) concurs and states that managers have incentives to grow their firms beyond optimal size, which brings on more power and compensation since this often is tied to revenue size. This is also coherent with Firths' (1991) study and he also provides evidence from the UK suggesting that increasing managerial returns could be a strong motivational factor. Another classic paper on the issue of agency problems is Jensen (1986), in which the

author states that management simply undertakes bad acquisitions when they are rich on cash flow and there are no other value creating investment opportunities.

Harford (2005) argues that companies get cash rich when (1) the overall economy is responding to changes and companies itself are successful in their business and/or (2) when credit markets are expanding allowing for companies to easy access capital. In his model he argues that the capital liquidity is a prerequisite to make investments. He concludes that the capital liquidity effect drives M&A rather than misvaluations and clusters them in waves in times of financial market booms. Another conclusion that is drawn is that cash rich bidders suffer from a larger negative announcement effect than bidders with less cash during. Connecting Harford (2005) with for example Jensen (1986) can, in this respect, explain why deals made with cash to a high degree should be triggered by agency motives.

2.4 Hubris and Overconfidence

Besides synergy and agency theory as merger motives, hubris explains mergers that are done based on managers' overestimation of synergistic gains of a deal, leading to incorrect valuations of the target. The hubris hypothesis implies that managers acquire other firms because of such incorrect valuations, estimating the target value to be higher than the price that the market has estimated, leading to an overpayment due to synergy opportunities that may not exist or may not be realized. (Berkovitch & Narayanan 1993)

Richard Roll introduces the hubris hypothesis in his paper from 1986. According to Roll, a takeover bidding process starts with the identification of a target, followed by a target valuation, including economic and managerial synergies that the bidder is convinced to realize if acquiring the particular firm. This valuation should be seen with background of the value that the market has put on the target firm. If the market is efficient, the market price should reflect all information and asset values of the target firm. If the rational bidder considers the target to be worth more than the market price, it is because of the synergies mentioned above, that constitute incremental value for the merged entity. But what if such synergies are overestimated and do not exist? Then the bidder overpays and destroys value for its shareholders. Such a mistake can be explained by the hubris hypothesis and the mistake is made due to manager's overestimation of the own firm's ability to realize synergies when merging with the target.

Roll's original hubris hypothesis predicts movements in the bidder's stock price at the time of a bid as follows: A decline in bidder stock price when announcing the bid, an increase in bidder stock price when abandoning or losing a bid and a decline in bidder stock price when winning a bidding contest with a rival bidder. Furthermore, the hubris hypothesis predicts the target share price to increase due to the overpayment while the total value of the merged entity falls slightly. (Roll, 1986)

2.4.1 Market Efficiency

The hubris hypothesis assumes efficient markets, as briefly mentioned above. This implies that the stock market manages to incorporate all relevant available information in the pricing of equity. This means that the market price of equity, at any point in time, reflects the status of the firm and that the actions of individual managers will be reflected in the prices. This further implies that the individual manager's abilities or disability to extract synergies through M&A activity will have a direct effect upon the value of their firm and, in a capital market that is efficient with respect to public information, stock prices will quickly adjust following a merger announcement (Andrade et al 2001).

Fama (1970) defines market efficiency as equity prices "fully reflecting" all available information about the firm. When new information about a firm arises it will swiftly, through the market forces, affect the price of the stock. Because of the presence of arbitrageurs, over and undervaluation will instantaneously be eliminated. This hypothesis was labeled the Efficient Market Hypothesis (EMH).

The validity of the EMH has been questioned however, and criticism towards the model has been raised. One of the critics is Haugen (2004), who means that the market lacks efficiency because of the prevalent anomalies and the fact that the market tends to overreact upon market signals. DeBondt and Thaler (1985) studied the American stock market between 1933 and 1978 and a significant overreaction was established, raising evidence against the Efficient Market Hypothesis. The research on the subject is ambiguous however and there is no consensus as to the validity of the efficient market hypothesis.

2.4.2 The Hubris Hypothesis and Agency Theory

Agency theory implies that value-destroying acquisitions are made because of managerial gains at the expense of the shareholders (Berkovitch & Narayanan 1998). Mergers explained by hubris-infected estimations of the merger gains could be interpreted by conscious managerial actions as well. However, hubris infected bids do not deviate from what is considered as good corporate stewardship. The value destroyed does therefore not have to be related to agency problems but merely incorrect estimations by the acquiring firm. Even if managers make mistakes, it does not mean that its intentions are against shareholder interest, even if the actions are taken at the expense of these shareholders in the end. (Roll, 1986)

This view is supported by Malmendier & Tate (2005) that investigates differences between “overconfident managers” and “non-overconfident managers” in terms of their investment decisions. They found that overconfident managers held their stock options until maturity, indicating a belief in the own firm’s future performance and realization of future possible gains. Even if these stock options align managerial and shareholder interests, they may not mitigate suboptimal investment decisions if the decisions rely on the manager’s overconfidence about the own ability to create value through the investment. (Malmendier and Tate, 2005)

In summary, the contrast between an agency motive for M&A activity and M&A decisions based on managerial hubris is very important to understand when discussing merger motives. In contrast to the agency motive where the managers value destroying actions are conscious, hubris infected managers have honest intentions with their actions, trying to maximize shareholder gains but fail to do so by simply overestimating their ability to extract gains from an acquisition.

2.4.3 Hubris Hypothesis and the Manager

If managerial hubris leads to incorrect valuation, then the individual manager and the managers’ decisions are in focus in explaining the hubris hypothesis. Roll (1986) argues that in the field of corporate acquisitions, individual decision making and the irrationality of individuals in making decisions can not be excluded. Considering that a manager may have a few opportunities during the career to make a major acquisition deal, the personal

benefits of doing the deal may be reflected in the valuation of the target if differing from its market value.

The focus on the individual decision maker is further pointed out by Hayward and Hambrick (1997) who studied CEO self-confidence as an explanation for high acquisition premiums in the US market. They focus on top management and especially the CEO, since these people in collaboration with their advisors, are the ones deciding on final acquisition prices once a target is identified.

Hayward and Hambrick (1997) found shareholder losses among bidding firm's shareholders follow these indicators of CEO hubris. Since the acquisition premium paid reflects the CEO's confidence in realizing value in a target firm, Hayward and Hambrick argue that CEO self-confidence is a good explanatory factor in describing why bidders overpay and also to explain the hubris hypothesis as such, underlining the importance of individuals in this process.

2.4.4 The Hubris Hypothesis Tested

The hubris hypothesis of Roll (1986) has been tested in several markets. Berkovitch and Narayanan (1993) studied the American market, using correlations between the gains of the target and the total merged entity to estimate if synergies, agency theory or hubris were the explanatory factor for managers engaging in merger activities. Several studies have followed, using the same approach for the American market (see Gupta et al, 1997; Kiyamaz & Baker, 2008) as well as other markets such as Europe (Goergen & Renneboog, 2004) and United Kingdom (Hodgkinson & Partington, 2008). For all these studies, synergy stands out as the major merger rationale but evidence for managerial hubris and agency is also found, indicating that hubris or agency can be present even if synergistic gains is the primary explanatory factor.

Another interesting finding is the one of Lin et al (2008) who found that, despite the traditionally close relationships between market participants in Japan and therefore the good foundation for information sharing between acquirers and targets, acquirers still overestimated the gains from acquisitions by simply paying too high bid premiums which Lin et al (2008) use as a proxy for hubris being present in Japan.

3. METHODOLOGY

This third chapter presents the methodology used in the study. Firstly, the research approach is presented. Secondly, the hypotheses that will be tested throughout the study are stated. Thirdly, an event study methodology to present the theoretical model that has been used to analyze the gathered empirical data is explained. Finally, the robustness tests, validity and reliability of the chosen methodology are discussed and suggestions on alternative methods are given.

3.1 Research Approach and Method

We use an econometrics-based model that correlates abnormal returns of share prices in order to pursue the purpose of the thesis. Because of the nature of the empirical model, we believe that the event study methodology is suitable when gathering and analyzing the data. Moreover, we employ the market model to calculate abnormal returns, a method that is widely used because it takes explicit account of the risks associated with the market and mean returns (Kiymaz & Baker, 2008). We believe that the approach sufficiently addresses the posed problem formulations, which is important when choosing approach. (Rienecker & Jørgensen, 2004)

The event study has a long history and the general applicability of the methodology has led to its wide use, for examples in mergers and acquisitions (Campbell et al, 1997). Several researchers (e.g. Berkovitch & Narayanan, 1993; Goergen & Renneboog, 2004) use the event study when they study merger motives. We have chosen to use the event study procedure, in favor of alternative methods, because of the nature of the data and the use of the market model method. The methodology provides a rational way to study the deals in our sample since a merger of two firms constitutes a clearly defined event with a clearly defined time frame and, through the market forces the effects of the event, become apparent through stock price fluctuations.

In the thesis, we use both qualitative and quantitative data, where the qualitative data lies as a foundation in our theoretical frame of reference and the hypothesis that we test. The testing of the hypothesis is done with a quantitative method. This implies that the study follows a deductive approach, where we use published proven theories and research on the subject to formulate and test our hypotheses.

3.2 Hypotheses

Our hypotheses, which aim to investigate if hubris has been evident in the Nordic market and measure the magnitude of hubris, are tested through correlations between gains to acquirers, bidders and to the total transactions.

H1: There is significant evidence of Nordic tender offers being driven by hubris

This implies that the acquirers systematically overestimate their ability to extract synergies through transactions, or simply overpay. The hypothesis is valid when there is no clear evidence of either synergy or agency and it contrasts the previous studies where synergy has been put forward as the primary merger motive.

H2: The method of payment, stock or cash, should not affect the level of hubris in Nordic tender offers

In an efficient market, which is a prerequisite of the hubris hypothesis, the method of payment should not have an effect on the gains surrounding announcement.

H3: The development of Nordic corporate governance since the 2000's has had a hubris dampening effect that can be seen in deals of the sixth merger wave compared to deals made in the fifth wave

The Nordic hybrid of corporate governance with a weak market for corporate control but with stakeholder representatives, dual class shares and strong institutional ownership, together with an adoption of international best practice has led to deals in the Nordic market showing diminished levels of hubris over time.

The three hypotheses above will lie as a foundation for the analysis and are addressed in section 6.1, where the main findings are summarized.

3.3 The Empirical Model and Data Collection

This section outlines how the data collection has been conducted. Furthermore, the empirical model used in the thesis is presented.

We aim to measure short-term wealth effects for acquiring and target firms by calculating Cumulative Abnormal Returns (CAR) with a market model method. The methodology is derived from Bradley et al (1987), Berkovitch & Narayanan (1993), and Goergen and Renneboog (2004) and comprises three inputs; (i) actual, (ii) normal and (iii) abnormal returns on the share prices of acquirers and targets. By going through the seven steps of

an event study (Campbell et al, 1997) we aim to give a structured and lucid overview of the used methodology.

1. *Event definition* – The first step contains determination of the event that is to be studied as well as the time horizon – the event window. In our study, the examined events are tender offer corporate takeovers taking place in the Nordic⁷ stock exchanges during the time period of January 1 1993 to January 1 2009. The event window is 5 trading days before announcement through 5 days after announcement (-5, +5), in line with Bradley et al (1987) and Berkovitch and Narayanan (1993). The event window was, in accordance with Bradley et al (1987), chosen in order to capture any information leakage before the announcement and to measure short-term performance post announcement. However, there is little consensus concerning the start of the period of the event window in M&A studies, which is evidenced by a great variety of event window lengths in previously published work. For example, Goergen & Renneboog (2004) use an event window starting 6 months prior to announcement in order to capture insider trading. However, we feel stick with the 5-day event window.

By studying deals during the time period 1993-2008 we incorporate two completed merger waves, the fifth and the sixth. Both waves share characteristic of having global expansion and integration as the primary rationales for merger activity (Martynova & Renneboog, 2008). Due to the common characteristics of the fifth and the sixth merger waves, 1993 lies as a starting point for the study. Since the sixth merger wave ended during 2008, we find this year to be a natural ending point of our study.

2. *Selection criteria* – This step involves decisions of databases and the criteria to use in order to limit the sample. We initially used Reuters 3000Xtra to gather M&A transaction data of completed deals. However, the results did not meet our expectations as we needed additional information on method of payment and if the companies where publicly traded.

We therefore used Thomson OneBanker to run a second search, taking into account the criteria outlined above. Restrictions were made to only include completed deals over one million USD and that both bidders and targets are

⁷ Denmark, Finland, Iceland, Norway and Sweden.

publicly listed on the Nordic stock exchanges. This was done in order to isolate the effects of Nordic corporate governance. This resulted in 1106 hits. To be comprehensible, the sample was further limited in the sense that:

- i. All of the transactions must have been completed tender offers⁸
- ii. Neither company where trusts, Joint Ventures or SPEs

This search rendered 146 deals from the OneBanker database. The final restriction was that the acquirer should not have had a previous holding in the target by more than 40 % of the share capital⁹. This was done in order to prevent the inclusion of deals where the bidder had a controlling position in the target before the announcement of the takeover. Furthermore, we have limited the sample towards corporate subsidiaries. It would have been possible to investigate the abnormal return of the parent company during the merger of a subsidiary. However, because of the risk of other factors simultaneously affecting the parent company stock price in the event of a takeover, these transactions have been omitted. Finally, we were unable to find complete transaction data on two (2) transactions and they were therefore excluded.

The final sample consists of 88 transactions from the studied period.

Data on share prices, market indices and the risk-free rate per country (3-month Interbank rates) were obtained from Thomson Datastream.

3. *Normal and abnormal returns* – In order to determine the impact of the event, the effects of the stock price for bidders and targets, the abnormal returns of the firms stock were needed.

Abnormal returns were obtained by subtracting the normal returns during the event window from the actual ex post returns. The normal return is defined as the return of the stock if the event did not take place. For each firm i and event t the abnormal return is given by:

$$\boldsymbol{\epsilon}_{it}^* = \mathbf{R}_{it} - \mathbf{E}[\mathbf{R}_{it} | \mathbf{X}_i] \quad (3.1)$$

⁸ OneBanker separates between tender offers and privately settled transactions.

⁹ This method was also used by Bradley et al (1987).

Where ϵ_{it}^* , R_{it} and $E[R_{it}]$ are the abnormal, actual and normal returns. There are two common models to model the normal return – *the constant-mean-return model* and *the market model*. The constant-mean-return model assumes that the mean return of a given security is constant over time. On the contrary, the market model assumes a linear and stable relation between market and security return – building on the approach of Capital Asset Pricing Model. (Campbell et al, 1997) The argument for choosing the market model over the constant mean-return model is that the variance of the abnormal return is reduced in the model compared to the constant-mean-return model, which leads to a better ability to detect event related effects (Campbell et al, 1997). However, one shortcoming of the event study is the risk of other events contaminating the results.

4. *Estimation procedure* – After concluding the definitions of returns, the parameters of the model were estimated through a subset of data measuring the estimation window before announcement day of the takeover. The estimation window (-5, +5) was used in order to calculate the normal returns. In order to calculate the expected returns we model beta (β) over a 3-month period (65 trading days), ending 5 days before announcement.

Beta can be defined with several methods, typically by a one-factor model such as the CAPM or with a multi-factor model such as the Fama-French three-factor model (see Fama & French, 1993). In line with the reasoning of previous studies using the Berkovitch & Narayanan (1993) model we are confident that a one-factor model, as the market model, when estimating beta is sufficient for the purpose of our thesis.

The market index used to calculate the return of the market portfolio should in theory include all types of assets that are held by anyone as an investment. Unfortunately, the returns on every possible investment opportunity are impossible to observe, which has led to the critique of the CAPM since it is not empirically testable (e.g. Roll's Critique: Roll, 1977). However, published betas normally use a market index that is similar to the other assets held by an investor.

Ideally we would use the broader OMX Nordic All-Share index as the relevant market index. However, since Thomson Datastream only provides data records of this index since January 1 2003 the use of the index was limited to our study.

Based on the discussion that the Nordic markets share characteristics that shape one single market, we used excel to run a correlation between OMX Nordic All-Share and OMX Stockholm All Share January 1 2003 to January 1 2008. The correlation was at 0.96. Therefore we use OMX Stockholm as a market index.

This section will briefly outline how Beta was calculated. We refer to Appendix 3 for details, where an example can be observed in full. Calculating the Beta requires a linear regression. The Excel spreadsheet function "linest" creates a complete linear least squares curve fitting routine that produces uncertainty estimates for the fit values. The fit values are in our model the returns of the share and the index – and are calculated through the natural logarithm (LN) between two trading days:

$$\text{Return} = \text{LN}(\text{index}_t / \text{index}_{t+1}) \quad (3.2)$$

This means that the calculated Beta is based on information from the past, a calculation that corresponds to the rest of the model. However, some key issues of this method should be acknowledged:

- **Beta is dependent on the market index** - In other words, the beta is calculated on a stock *with respect to* the given market index, OMX Stockholm All-Share. This is problematic if the chosen index cannot be considered as a good baseline measure for calculation.
- **Beta is dependent on the number of trading days** - This is related to the methodology we use. When calculating beta, the number of trading days before the date of announcement used differs and seems to be somewhat arbitrary in previous research. Berkovitch and Narayanan (1993) and Cybo-Ottone and Murgia (2000) use 270 trading days, and Kiyamaz and Baker (2008) use 170 days and Ang et al (2004) use a shorter period of 17 daily observations in their study. We have chosen three months, i.e. 65 trading days, to calculate beta, which is in line with Goergen and Renneboog (2004).
- **Robustness of Beta results** – Testing the robustness of the Betas can be done through several methods. Goergen and Renneboog (2004) use six different measures of beta to verify the robustness. To test for

robustness, we use one additional beta, calculated with the Merrill Lynch method based on Blume (1971) additional to the calculated 65-day betas. This method adjusts for mean-reversion in beta and is widely used, where:

$$0.33 + \beta_i * 0.67 = \beta_{\text{blume}} \quad (3.3)$$

The beta values were used to calculate normal returns (the returns that would have been in the absence of an event) by using the market model. When using CAPM, the risk free rate was calculated assuming 250-trading days per year on average. The normal return ($E[R_{it}]$) is calculated with the market model method:

$$E[R_{it}] = (\hat{\alpha}_i + \beta_i * R_{mt}) \quad (3.4)$$

Where $\hat{\alpha}_i$ is the risk-free rate for event day t , β_i is the calculated beta -70, -5 days, and R_{mt} is the observed return on the market index for the event day t .

5. *Testing procedure* – This step outlines how the cumulated abnormal returns are calculated and aggregated. Additionally, we explain how the CARs are used in our empirical model. This section is divided up in two, where part **(a)** describes abnormal returns and part **(b)** outlines how we to test our hypotheses.

(a) The abnormal returns are aggregated in order to be able to draw overall inferences for the events we study. With the parameter estimates from the normal performance model, the abnormal returns (ϵ^*_{it}) are calculated as in (3.1).

The aggregation is then done through time and across securities – where the CAR is used to interpret the events in the studied time period. (Campbell et al, 1997) The CAR was calculated for each bidder and target in the sample during the event window (-5, +5), 11 trading days in total. These are given by:

$$CAR = \Sigma (\epsilon^*_{it}) \quad (3.5)$$

(b) The CARs form the final piece of the puzzle in our empirical model to measure hubris and takeover motives. To calculate gains, we multiply the CARs

with market value¹⁰. Based on Berkovitch & Narayanan (1993), the CARs for bidders and targets are used as follows:

- The target gain is computed by multiplying the target's CAR by the market value of the target's equity as of the end of five trading days prior to the first announcement of the bid
- The acquirer gain is computed by multiplying the acquirer's CAR by the market value of the acquiring firm as of the end of five trading days prior to the first announcement made by the acquiring firm
- The total gain is defined as the sum of the target and acquirer gains.

Finally, we run correlations between bidder, target and total gains to determine the takeover motives according to figure 3.1 (on page 37). The logic of model is:

- i. If the merger motive of a transaction is synergy, then the merging of the two companies will lead to synergistic gains for the combined entity. For the synergy motive, these gains will be shared between the acquirer and the target firm and their distributions will only be depending on the relative bargaining power of the parties. Therefore, the correlation between target gain and total gain as well as between the target gain and acquirer gain will be positive.
- ii. If the merger motive of a transaction is agency, there will be no synergistic gains from the transaction. The target firm gains from the bid premium and there is a simultaneous expropriation of wealth from the acquiring firm shareholders to the acquiring firm management. Therefore, the correlations between the target firm gains and total gains as well as between the target firm gains and acquirer firm gains are negative.
- iii. If the merger motive of a transaction is hubris, there are none or very small synergistic gains from the merger. Whatever excess premium paid by the acquirer will be a gain to the target and there is a direct wealth transfer between the parties. The econometric results of this are that there is a negative correlation between the target firm gains and acquiring firm gains while there is zero correlation between target firm gains and total gains. In the positive total gains subsample, a positive correlation between target firm gains and total gains and a

¹⁰ Market value is calculated as: *number of shares * share price five days before announcement*. Data on number of shares was gathered from Datastream.

negative correlation between target firm gains and acquirer gains denotes either hubris or synergy. The reason for this is that this subsample is skewed towards shareholder value creation, and is therefore biased towards synergy. (Berkovitch & Narayanan, 1993; Hodkinson & Partington, 2007)

Figure 3.1 *Correlation model for determining merger motives*
(Berkovitch & Narayanan, 1993; Hodkinson & Parkington, 2007)

Correlation between		
Total sample	Target gain and total gain	Target gain and acquirer gain
Synergy	<i>Positive (+)</i>	<i>Positive (+)</i>
Agency	<i>Negative (-)</i>	<i>Negative (-)</i>
Hubris	<i>Zero (0)</i>	<i>Negative (-)</i>
Positive subsample	Target gain and total gain	Target gain and acquirer gain
Synergy	<i>Positive (+)</i>	<i>Positive (+)</i>
Synergy/Hubris	<i>Positive (+)</i>	<i>Negative (-)</i>
Agency	<i>Negative (-)</i>	<i>Negative (-)</i>
Negative subsample	Target gain and total gain	Target gain and acquirer gain
Pure Hubris	<i>Zero (0)</i>	<i>Negative (-)</i>
Agency	<i>Negative (-)</i>	<i>Negative (-)</i>

The final step of the event study is to calculate the results, analyze them and to draw conclusion – steps that will be presented in the remaining chapters of the thesis.

3.4 Robustness Tests

In order for a study to be deemed satisfactorily significant, the results need to undergo so called robustness tests. There is a wide array of tests that can be performed on the results in order to gain significance. Passing of a test means that the results from the correlation analysis are statistically significant, if not the results cannot be distinguished from zero. We use similar t-tests as Cybo-Ottone and Murgia (2000) and Goergen and Renneboog

(2004). The test is calculated with the t-test function in MS Excel, using a two-sample test with unequal variance. The t-test gives probability values, p-values, which assign level of significance. We employ a three star system indicating significance at the 10%, 5% and 1% levels (used e.g. by Goergen & Renneboog, 2004 and Kiyamaz & Baker, 2008).

Since the gains in our sample range from hundreds of thousands of Euros to billions of Euros, it raises concerns if the results are driven by outliers. For example in cash in deals the minimum total gain is -€1 173 million and the maximum gain is \$683 million. When re-running the correlations while omitting the extreme values, the results concerning both the sign of the correlations and the levels of significance were unchanged.

3.5 Reliability

The trustworthiness of results in an empirical investigation depends on its consistency and accuracy, i.e. the absence of random errors, in which reliability is the common measure (Lundahl & Skärvad, 1999; Bryman & Bell, 2005). The input, calculations and econometrical construction of the empirical model is the foundation of the thesis' reliability. We are confident that the results are consistent with regard to the input data and the methodology used in that:

- The M&A data is gathered from either Thomson OneBanker or Thomson Datastream, two of the financial world's most respected data sources
- The empirical model is based on several researchers published work in respected academic journals

Regarding the empirical model, the econometrics of the empirical model need to have a high level of reliability, i.e. the results of the model should generate identical results independent of the researcher (Lundahl & Skärvad, 1999). When working with the model, the authors have been assisted by Anders Vilhelmsson, Ph.D. at Lund School of Economics and Management, Department of Economics. Even though the empirical work has been conducted in a structured and cautious manner there may still be random errors in the calculations. However, we believe that impact of potential errors may represent small deviations to the end results.

3.6 Validity

The concept of validity is about measuring the right things and that accurate conclusions can be drawn from the results. Systematic errors are mitigated in an investigation with high validity. The concept is commonly dichotomized into external and internal validity. (Bryman & Bell, 2005)

Internal validity, according to LeCompte & Goetz (in Bryman & Bell, 2005), implies that there must be a good correspondence between the collected empirical data and the conclusions drawn by the researcher – i.e. the researcher measures the phenomena that the purpose states (Lundahl & Skärvad, 1999). By measuring takeover motives with a methodology used in previous studies in renowned academic journals, the level of internal validity is strengthened. Furthermore, when investigating takeover motives specifically, and especially when separating between them, it is essential to have clear definitions in order to separate each motive from the other. Our definitions of merger motives follow those in previous well-established research and we believe that our theoretical frame of reference helps us to focus on the primary areas when analyzing our data in accordance with the theoretical themes and definitions.

External validity is about to what extent the results from the study can be generalized in a broader perspective (Bryman & Bell, 2005). In our thesis this is primarily about how and if the results on tender offers from the Nordic market corresponds to similar investigations on other markets, and vice versa. Accomplishing high external validity may be difficult in our field of study because of the heterogeneity of regional stock markets, e.g. caused by differences in corporate governance systems, legislation, social- and culture. This implies that it will be difficult, maybe impossible, to generate empirical results in our field of study that can be generalized to all markets. Therefore, we strive to be as accurate and detailed in our description of the methodology so the study easily can be replicated on other markets.

3.7 Alternative Methodology

The common methodology in studies investigating takeover announcement effects or takeover motives involves collection of abnormal returns. Even though Berkovitch and Narayanan's (1993) model has gained recognition (see Gupta et al, 1997; Seth et al, 2000; Kiyamaz & Baker, 2008) there are alternative methods to study hubris.

Raj and Forsyth (2003) tested what they considered to be hubris-infected bidders' performance in takeover bids in the UK market. They used valuation ratios and bid premium sizes to identify hubris infected bidders in the data sample. Lin et al (2008) used a similar methodology to study hubris in Japan. Rau & Vermaelen (1997) incorporated a book-to-market based benchmark, similar to those studying the MTH, to identify hubris.

Malmendier & Tate (2005) identify overconfident CEOs as the reason for hubris in corporate investment decisions. They construct three measures; "(1) Does the CEO hold his options beyond a theoretically calibrated benchmark for exercise? (2) Does the CEO hold his options even until the last year before expiration? (3) Does the CEO habitually buy stock of his company during the first five sample years?" Whenever the answer to one of these questions is yes, the authors classify a CEO as overconfident.

Hayward & Hambrick (1997) explains premiums paid for large acquisitions as hubris using a detailed regression model. They use acquisition premiums and firm performance (by using long and short-term CARs) as dependent variables. Recent acquirer performance, media praise for the CEO (by using articles specifically attributing organizational outcomes to CEOs or otherwise commenting on CEOs' performance) and relative CEO compensation were used as independent variables to determine eventual overconfidence of the CEO, putting the traits of the individual decision maker in focus. This approach is also used in a similar study by Haspeslagh and Jemison (1991).

Brown & Sarma (2006) combine Hayward & Hambricks regression model with elements of Malmendier & Tate in a regression model which, based on data from the US 1994-2003, gives corporate governance implications of the traditional Anglo-American composition of Board of Directors.

The methodology used in Hayward & Hambrick (1997) and Malmendier & Tate (2005) is constructed to test for hubris in large transactions in Anglo-American settings. Nonetheless, the methods of researchers as mentioned above are interesting and may be applicable to the Nordic market. If so, it is most likely that the researcher must modify the variables to tailor the characteristics of Nordic contemporary corporate governance.

To examine if evidence of hubris can found in the Nordic market, we believe the Berkovitch and Narayanan model is best suited. For future research of the topic, the alternative methods can be used to provide deeper insight.

4. EMPIRICAL RESULTS

This fourth chapter presents the empirical results of the study. Firstly, the samples of the study are presented and commented. Secondly, the results from the correlation analysis are stated and commented. Finally, the robustness of the results is addressed.

4.1 Description of the Sample

The final sample consists of 88 completed M&A transactions in the Nordic market during 1993-2008. Table 4.1 describes the data sample. Deal sizes are nominated in USD while stock prices and market values (MV) are nominated in Euro.

Table 4.1 Overview of the Data Sample

	Number of Acquirers	Number of Targets	Median MV of Acquirers	Median MV of Targets	Median Deal Size (USDm)
Total	88	88	335 756 935	74 371 675	124.25
Sweden	50	52	-	-	122.3
Norway	18	19	-	-	116.7
Denmark	11	12	-	-	112.5
Finland	7	5	-	-	1 134.7
Iceland	2	0	-	-	41.8

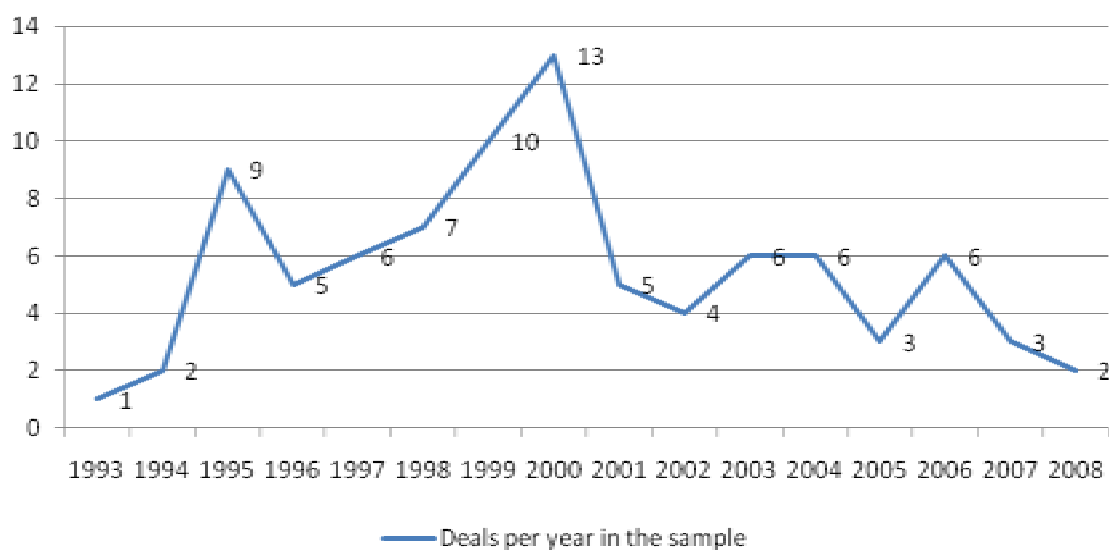
When examining table 4.1 it can be noted that the transactions related to Finland include larger sizes, but fewer deals compared to the deals from its Nordic neighbors. Norway and Denmark show similar characteristics of median deal size and number of deals during the studied time period.

The acquirer firms in the sample are active within various industries. 22 deals were done in high technology, 21 in financials, and 19 in the industrial sector. In the sample, twelve acquirers are involved in multiple tender offers. See appendix 3 for a complete list of the deal sample and the individual deal characteristics.

Several researchers have previously examined and classified merger waves (e.g. Moeller & Brady, 2007 and Martynova & Renneboog, 2008), and two waves have been examined in

our data sample. The fifth wave of the 1990's (1993-2001), and the recent sixth wave of the 2000s (2003-08) both appear as distinct wave patterns in global M&A statistics. In our limited sample of Nordic tender offers we can observe a cyclical wave pattern. However, the pattern is not as distinct as the corresponding graph of the number of global M&A deals. This is illustrated in the graph below, where it is evident that the sixth merger wave is hard to define – at least in our sample.

Figure 4.1 *Distribution of Nordic M&A deals per year in our sample*



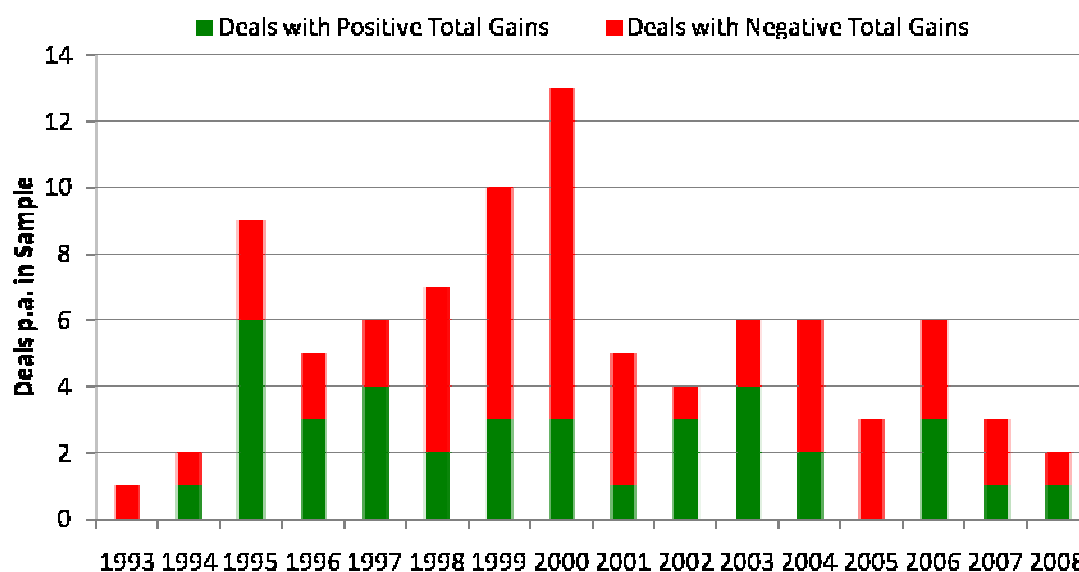
4.1.1 Description of Subsamples

The use of multiple subsamples helps us analyze the drivers of the total sample we seek to investigate. Firstly, we separated the total sample into a positive and a negative subsample to be able sort out the different takeover motives (in line with Berkovitch & Narayanan, 1993). Deals with positive total gains create value to the shareholders of the combined company, whereas deals with negative total gains destroy value.

Secondly, we have separated between cash and stock payment as deal financing. This was done in order to investigate takeover motives within the dimension of deal payment. The reason was to investigate whether there is causality between payment modes and merger motives. Another reason for the separation of cash and stock financing was to see if any market timing aspects could be seen in Nordic M&As.

Figure 4.1 illustrates how positive and negative total gains vary with total deals per year and during the time period. It can be seen that a large number of deals with negative total gains were done in the time period 1998-2000, worthy of note for the last subsample.

Figure 4.2 The distribution of positive and negative total gains



Thirdly, we separate the deals into deals from the fifth and the sixth merger waves. According to our classifications of the waves we refer 58 deals to the fifth wave and 26 deals to the sixth wave. The four deals done in 2002 are excluded from the subsample, as they cannot be referred to any of the two merger waves. As done with the second subsample dichotomization, this sample was divided into an additional negative and positive subsample to be able study the results in more detail.

4.2 Total Gains

Table 4.3 presents the gains of targets, acquirers and total gains for the deal sample. The gains are calculated using both a 65-day market model beta, as well as Blume's adjusted beta to verify the robustness of our results. Table 4.3 shows similar sizes of gains from the calculations using both betas, indicating that the results are robust.

Table 4.2 Summary: deals gains

Sample	Gain to	Min	Max	Median	Mean
<i>Total sample; market model 65 day beta</i>					
All (88)	Target	-298.9	424.7	5.4	23.9
	Bidder	-1 179.4	818.6	-7.9	-59.8
	Total	-173.4	897.5	-4.6	-35.9
Positive Total Gain Only (37)	Target	-49.2	434.8	8.1	39.4
	Bidder	-58.6	818.6	2.1	76.5
	Total	0.4	897.5	9.1	115.9
Negative Total Gain Only (51)	Target	-298.9	229.4	3.5	12.6
	Bidder	1 179.4	35.6	-35.2	-158.7
	Total	-1 173.4	-672.3	-35.3	-146.1
<i>Total sample; Blume's adjusted beta</i>					
All (88)	Target	-276.9	438.4	6.4	26.8
	Bidder	-994.5	809.2	-5.9	-46.5
	Total	-988.2	891.8	-4.0	-19.7
Positive Total Gain Only (39)	Target	-49.1	538.4	9.0	38.8
	Bidder	-59.4	809.2	4.2	73.0
	Total	0.7	891.8	15.9	111.7
Negative Total Gain Only (49)	Target	-276.9	251.7	5.0	17.3
	Bidder	-994.5	33.1	-31.0	-141.5
	Total	-988.2	-0.1	-24.1	-124.2
<i>Deals using stock, 65 day beta</i>					
All (44)	Target	-298.9	434.8	2.4	15.8
	Bidder	-972.8	818.6	-7	-0.01
	Total	-824.1	897.5	1.0	15.8
Positive Total Gain Only (24)	Target	-49.2	434.8	6.1	44.7
	Bidder	-15.6	818.6	5.7	88.6
	Total	0.8	897.6	13.9	133.3
Negative Total Gain Only (20)	Target	-298.9	148.7	-0.4	-18.9
	Bidder	-972.8	35.6	-18.1	-106.3
	Total	-824.1	-0.7	-33.9	-125.2
<i>Deals using cash; 65 day beta</i>					
All (44)	Target	-7.5	229.5	8.8	31.5
	Bidder	-1 179.4	643.5	-27.6	-116.5
	Total	-1 173.4	683.4	-17.8	-85.7
Positive Total Gain Only (14)	Target	-2.2	99.5	11.4	26.6
	Bidder	-58.6	643.5	631.3	47.1
	Total	0.4	683.3	9.0	73.8
Negative Total Gain Only (30)	Target	-7.5	229.5	8.6	33.9
	Bidder	-1 179.4	-2.3	-66.9	-198.2
	Total	-1 173.4	-0.9	-41.7	-164.4
<i>Fifth merger wave, 65 day beta</i>					
All (53)	Target	-122.1	434.7	8.0	30.5
	Bidder	-972.8	471.9	-19.6	-63.9
	Total	-824.1	657.4	-7.1	-33.4
Positive Total Gain Only (22)	Target	0.6	434.7	9.2	45.8
	Bidder	-58.6	471.6	1.3	43.2
	Total	0.4	657.4	9.1	89.1
Negative Total Gain Only (31)	Target	-122.1	229.5	5.6	19.7
	Bidder	-972.9	0.6	-57.1	-140.1
	Total	-824.1	-1.0	-57.7	-120.3

Sample	Gain to	Min	Max	Median	Mean
<i>Sixth merger wave, 65 day beta</i>					
All (n=35)	Target	-298.9	268.8	2.1	13.9
	Bidder	-1179.4	818.6	-1.3	-53.6
	Total	-1173.4	897.5	-1.3	-39.7
Positive Total Gain Only (n=15)	Target	-49.2	268.8	2.2	30.0
	Bidder	-1.9	818.6	3.8	125.2
	Total	.8	897.6	10.7	155.3
Negative Total Gain Only (n=20)	Target	-298.9	146.5	1.2	1.7
	Bidder	-1179.4	35.6	-20.7	-187.7
	Total	-1173.4	-0.7	-23.5	-186.0

The gains are calculated by multiplying the CAR for each company during the 11-day event window by the market value of the company in the fifth day before the deal announcement. Gains are expressed in euro millions.

In the total sample, 37 deals out of 88 showed positive total gains and 51 deals showed negative gains, demonstrating that 58 percent of the deals destroyed value for the targets and acquirers combined with a mean loss being €36 million. This result is remarkable, indicating that a majority of the deals in the total sample should be motivated by other rationales than synergies, i.e. agency or hubris.

The choice of payment mode, if the deal is made with cash or stock, seems to have an impact on the total gains, and ultimately, reflect merger motives. For the deals using stock, the pattern of negative acquirer gains and positive target gains is still present but the total gains are positive for the whole group, as opposed to the deals using cash sample, for which the total gains are negative and the negative gains of bidders are higher. The deals using stock subsample is the only sample in table 4.2 showing positive total gains and is also the only sample where the positive gains subsample is greater than the negative gains subsample, with 60 percent of the deals showing positive total gains. Mode of payment provides differences in gains for the total sample, indicating that synergy is the major explanatory factor for the majority of the stock deals while agency or hubris is present to a larger extent in deals made with cash as payment.

The gains of the deals separated into the fifth and sixth merger waves show noticeably similar results with no major deviations from one another, with positive total gains in 42 percent and 43 percent of the samples respectively. This indicates that there is no clear differences in merger motives over the two waves, with agency or hubris being major explanatory factors as the majority of the deals are value destroying. The total gains are slightly higher in the sixth merger wave compared to the fifth wave.

4.3 Correlations

In line with previous studies, i.e. Berkovitch & Narayanan (1993) and Hodkinson and Partington (2007), the gains from the samples are used in a correlation analysis to determine what motives drive the deals in the Nordic market. As previously discussed, the correlations are analyzed in the following way:

In this section the results from the total and the subsamples are presented. The results of the correlations are both presented with the market model 65-day beta and Blume's adjusted beta to verify robustness of the results.

4.3.1 Correlations Using the Market Model Beta

Table 4.3 Correlation coefficients: using the 65-day market model beta

Correlation between	Target and total gain	P-value	Target and acquirer gain	P-value
1. Total Sample (88)	0.2081	<i>0.0421**</i>	-0.0795	<i>0.0080***</i>
1a. Positive Total Gain sub-sample (37)	0.5037	<i>0.0220**</i>	0.1301	<i>0.2727</i>
1b. Negative Total Gain sub-sample (51)	-0.1106	<i>0.0002***</i>	-0.3618	<i>0.0003***</i>
2. All Stock deals (44)	0.4042	<i>0.9997</i>	0.0169	<i>0.6820</i>
2a. Positive Total Gains sub-sample (24)	0.5590	<i>0.0427**</i>	0.1426	<i>0.3270</i>
2b. Negative Total Gains sub-sample (20)	-0.1937	<i>0.0552*</i>	-0.5204	<i>0.1847</i>
3. All Cash deals (44)	-0.0245	<i>0.1050</i>	-0.1965	<i>0.0022***</i>
3a. Positive Total Gains sub-sample (14)	0.2568	<i>0.3053</i>	0.0891	<i>0.6504</i>
3b. Negative Total Gains sub-sample (30)	-0.0343	<i>0.0013***</i>	-0.2231	<i>0.0005***</i>
4. Fifth Merger Wave (58)	0.2057	<i>0.0154**</i>	-0.1673	<i>0.0021**</i>
4a. Positive Total Gains sub-sample (23)	0.6762	<i>0.1521</i>	0.1890	<i>0.9344</i>
4b. Negative Total Gains sub-sample (35)	-0.3798	<i>0.0004***</i>	-0.6085	<i>0.0007***</i>
5. Sixth Merger Wave (25)	0.2346	<i>0.5319</i>	0.0187	<i>0.4708</i>
5a. Positive Total Gains sub-sample (10)	0.3616	<i>0.0842*</i>	0.0973	<i>0.1796</i>
5b. Negative Total Gains sub-sample (15)	-0.0361	<i>0.0675*</i>	-0.2551	<i>0.1075</i>

The correlations are calculated using the aggregated gains/losses to the transaction parties during the 11-day event window and the p-values are used to determine the significance of the correlations. P-values show a significance level at 10%, 5%, 1% and are marked with *, **, *** respectively.

For the total sample, we can see that the correlation between target and the total gains is positive with a two star statistical significance, but significantly negative between target gains and acquirer gains. The interpretation is ambiguous, and points out signs of both synergy and agency. Synergies are more obvious for the positive gains subsample with significant positive correlations between target gains and total gains, and a positive correlation between the target gains and acquirer gains that cannot be distinguished from zero. The negative correlation between target gains and the total gains as well as between the target gains and the acquirer gains in the negative total gain subsample indicate non-synergy motives where hubris can neither be confirmed, nor excluded as the motive. The results imply that the mergers in our study have synergy but also agency, and possibly to some extent, hubris as explanatory factors.

Furthermore, there are interesting findings in the correlation results between deals using stock and the deals using cash. In the stock sample we see results of synergy but these results are not statistically significant. The positive stock subsample shows a significant positive correlation between the total gains target gains but no significant evidence for synergy in the target gain and acquirer gain correlation. The negative stock subsample shows a statistically significant negative correlation between total gains and target gains, indicating agency, but no significant correlation between the target gains and acquirer.

The cash deal subsample, in fact, shows evidence of being driven by hubris on average. The correlation between target gain and total gain cannot be distinguished from zero and the correlation between the target gain and acquirer gain is negative with a three star significance. This would mean that 50% of the investigated deals, on average, are driven by hubris - as the cash deals, positive total gains subsample shows evidence of synergy and hubris and the negative subsample show statistically significant evidence of agency. This implies a difference in merger motives depending on payment mode.

Moreover, there is a difference in the deals are made during the fifth or the sixth merger wave. The fifth merger wave's negative subsample shows statistically significant evidence of being driven by agency. The sixth merger wave shows less evidence of agency, and seems to have synergy as motive to a larger extent. In spite of this fact, we find patterns of all three motives being present in both waves' subsamples and the results imply similar motives during the period of the study, 1993-2008.

4.3.2 Correlations with Blume's Adjusted Beta

Table 4.4 Correlation coefficients: using Blume's beta

Correlation between	Target and total gain	P-value	Target and acquirer gain	P-value
1. Total Sample (88)	0.2228	<i>0.0662*</i>	-0.1088	<i>0.0086**</i>
1a. Positive Total Gain sub-sample (39)	0.5159	<i>0.0165**</i>	0.1265	<i>0.2699</i>
1b. Negative Total Gain sub-sample (49)	-0.1106	<i>0.0001***</i>	-0.4274	<i>0.0001***</i>
2. All Stock Deals (44)	0.4565	<i>0.9027</i>	0.0291	<i>0.6623</i>
2a. Positive Total Gains sub-sample (23)	0.5484	<i>0.0476**</i>	0.1221	<i>0.3596</i>
2b. Negative Total Gains sub-sample (21)	-0.0721	<i>0.0220**</i>	-0.5505	<i>0.1212</i>
3. All Cash Deals (44)	-0.0987	<i>0.0150**</i>	-0.3025	<i>0.0025***</i>
3a. Positive Total Gains sub-sample (16)	0.3039	<i>0.1745</i>	0.1177	<i>0.5556</i>
3b. Negative Total Gains sub-sample (28)	-0.1034	<i>0.0018***</i>	-0.3337	<i>0.0004***</i>
4. Fifth Merger Wave (58)	0.2754	<i>0.0169**</i>	-0.1574	<i>0.0015***</i>
4a. Positive Total Gains sub-sample (24)	0.6645	<i>0.1199</i>	0.1594	<i>0.9939</i>
4b. Negative Total Gains sub-sample (34)	-0.2380	<i>0.0001***</i>	-0.5764	<i>0.0002***</i>
5. Sixth Merger Wave (25)	0.2124	<i>0.7069</i>	-0.0374	<i>0.5938</i>
5a. Positive Total Gains sub-sample (11)	0.3948	<i>0.0784*</i>	0.1210	<i>0.1809</i>
5b. Negative Total Gains sub-sample (14)	-0.1334	<i>0.0792*</i>	-0.3875	<i>0.1350</i>

*The correlations are calculated using the aggregated gains/losses to the transaction parties during the 11-day event window and the p-values are used to determine the significance of the correlations. P-values show a significance level at 10%, 5%, 1% and are marked with *, **, *** respectively.*

Table 4.4 provides the coefficients calculated with Blume's adjusted beta. The results are similar to the results provided by the use of the 65-day market model beta, with significant evidence for synergies as well as non-synergy motives, and with hubris as a possible explanatory factor. Stock deals provide stronger evidence of synergies than cash deals and no remarkable difference can be observed between the fifth and the sixth merger wave subsamples.

For the analysis of the results, we will use the 65-day market model beta and the results provided in Table 4.3. However, the similar results in Table 4.4 provide support for the assumption of the beta calculations not being infected by systematic errors.

4.3.3 Robustness Compared to Previous Studies

The article from Goergen and Renneboog (2004) on European M&A bids in the 1990s uses the same methodology as this paper and could therefore be used as a benchmark to verify the nature of the results. By studying 64 deals they conclude that M&A, on average, are motivated by synergies. In their analysis they add that the motives for individual firms may still be different and find no correlation between target gains and total gains. They suggest that in about one third of the firms studied, hubris is the reason for poor decision-making in M&As.

Table 4.5 Results of correlations, from Goergen and Renneboog

Correlation between	Target and total gain	<i>P-value</i>	Target and acquirer gain	<i>P-value</i>
Total sample (64)	0.6440	***	0.4155	**
Positive total gain sub-sample (42)	0.5541	**	0.1763	*
Negative total gain sub sample (22)	0.1393		-0.1640	*

Notably, over 65% of their studied deals show positive total gains. In table 4.5 it can be noted that there is a similarity in our results compared to Goergen and Renneboog's (2004) study. This further validates the robustness of our results.

5. ANALYSIS

This fifth chapter presents the research analysis that tests the presence of hubris in the Nordic M&A market, built upon the theoretical frame of reference and the empirical results of the study. Firstly, the total gains and the correlation of the entire sample is analyzed, together with the results from the positive and negative total gains subsamples respectively. Secondly, the total gains and the correlations within the cash financed and all stock financed subsamples are analyzed respectively. Finally, the correlations and total gains within the fifth merger wave and the sixth merger wave subsamples are analyzed respectively.

5.1 The Total Sample

Table 5.1 states that 51 out of 88, or 58%, of the tender offer deals in the Nordic market during the time period 1993-2008 show negative gains and thereby destroy shareholder value. Our findings deviate from those of Jensen and Ruback (1983), Andrade et al (2001) and Betton et al (2008) who all state that M&A is value creating on average and that both bidders and targets enjoy total positive gains. Furthermore, in our study, the target gains are larger than the acquirer gains.

5.1.1 Hubris in the Total Sample

The value destruction implies that these deals should have been driven by other motives than synergy and that the price paid for the target was set too high in relation to the price that the market considered fair. With evidence of non-synergy motives present in the Nordic M&A sample, the analysis of the correlation coefficients provided in table 5.1 are useful in determining what these motives have been.

Table 5.1 Correlations between gains in the total sample

Correlation between	Target and total gain	P-value	Target and acquirer gain	P-value
1. Total Sample (88)	0.2081	<i>0.0421**</i>	-0.0795	<i>0.0080***</i>
1a. Positive Total Gain sub-sample (37)	0.5037	<i>0.0220**</i>	0.1301	<i>0.2727</i>
1b. Negative Total Gain sub-sample (51)	-0.1106	<i>0.0002***</i>	-0.3618	<i>0.0003***</i>

*The correlations are calculated using the aggregated gains/losses to the transaction parties during the 11-day event window and the p-values are used to determine the significance of the correlations. P-values show a significance level at 10%, 5%, 1% and are marked with *, **, *** respectively.*

The correlation coefficients follow a similar pattern as the absolute gains, and indicate that both synergy and non-synergy motives are present. For the total sample, the correlation between target and total gains is significantly positive and significantly negative between the target and acquirer gains. These ambiguous results are difficult to interpret, but could be seen as an indications of both synergy and non-synergy motives. In the positive total gains subsample, the correlation between target and total gains is positive and significant, and positive but non-significant for target and acquirer gains. The interpretation of this should also be done carefully, the synergy motive is a possible deal driver, especially since total gains are positive – a sign of the market believing in the acquiring management's intentions with the deal. For the negative total gains subsample, the results are unambiguous with three star significances for the negative correlation between target and total gains as well as between target and acquirer gains, indicating agency.

The establishing of the presence of other motives than synergy in the Nordic M&A market is remarkable and provides insight to the Nordic context M&A research. However, the results, as interpreted by our model, do not state with significance that synergy and hubris motives are present, even if patterns that indicate both of them are observed. The interpretation should be that, despite the lack of significant proof, hubris can neither be proven nor rejected as a possible merger motive in Nordic M&As. A factor further underlining this is the notion of a majority of deals in fact being value destroying.

5.1.2 Total Sample Compared to Previous Studies

Our results are somewhat consistent with findings of research colleagues. Berkovitch and Narayanan (1993), Gupta et al (1997), Seth et al (2000) and Kiyamaz and Baker (2008) all find evidence of synergies being the main merger motive while evidence of hubris and agency are present in the samples of the studies. Gupta et al (1997) also find indications of all three motives, without any one of them dominating the others. Goergen and Renneboog (2004) found evidence of hubris being present in 1/3 of the deals studied. The results provided in this paper are consistent with previous results in the sense that both synergy and non-synergy motives, including the hubris motive, seem to be present in the Nordic market.

A remarkable deviation in our study of the Nordic market compared to previous studies made on other markets is the large number of deals with negative gains compared to previous studies using the same approach. Examples of this are the Berkovitch and Narayanan (1993) study, with positive gains in 75% of sample, Kiyamaz and Baker (2008) and Seth et al (2000), both with positive gains in 74% of the sample and Gupta et al (1997) with positive gains in 64% of the sample. These numbers can be contrasted by the positive total gains in 42% of the sample deals in our study. With a majority of the deals having negative total gains, there should be less evidence of synergy motives driving Nordic mergers compared to results of other studies. This further underlines the fact that hubris cannot be excluded as a possible merger motive in the Nordic market. The value destroyed in Nordic mergers solely being derived from agency problems is highly unlikely, which can be observed in the non-significant results of the correlations.

5.1.3 Total Sample and Corporate Governance

The finding of non-synergy merger motives in the Nordic market in general, and the possible presence of hubris in particular, is interesting, also in the context of corporate governance practices in the Nordic countries. The question is what effects this system has had during the study period as opposed to other systems. As suggested by Oxelheim & Wihlborg (2008), the Nordic countries encompass somewhat of a hybrid form of corporate governance, in between the Anglo-American system, relying on the market for corporate control, and the Germanic system, relying on large institutional investors. Furthermore, institutional investors often hold a large part of the voting rights in a dual class share system as explained in Puttonen et al (2007) and Skog (2004), and stakeholder

board representatives monitoring managers' actions as explained by Clarke (2007). According to Bebchuck et al (2002), managers have a smaller ability to act opportunistically with the presence of such supervision. In the Anglo-American system, with board and management closely attached, sometimes with the role of board chairman and CEO being attributed to the same person, managers should have more freedom to go through with mergers, even if the market may punish such decision afterwards. In the Nordic context, stakeholders and institutional owners monitoring also in the pre-bid phase, could be seen as hubris dampening. Despite these characteristics of the Nordic corporate governance practices, other motives than synergy are found, agency with statistical significance as well as non-significant traces of hubris in the total sample. This result reflects that of Lin et al (2008) who found hubris being present in the Japanese market, despite the close relationship between the market participants.

With the differences in corporate governance practices in the Nordic market and the Anglo-American system, one could also discuss the results of the study and the model we have used. The model presented in Berkovitch and Narayanan (1993) was initially created to test the presence of hubris in an American context, a context where agency problem may be more common due to e.g. the lack of monitoring of management in a pre-bid phase. We expect the Nordic market, with its closer monitoring of large owners as well as stakeholders, to prevent such behavior in an earlier stage of a merger process. It may therefore be erroneous to conclude that all of the value destroyed in the majority of our total sample deals should come from agency, despite the statistical significance. It is obvious that acquirers pay too much for their targets in the deal sample, and with that in mind, it should be more likely that both management and the parties monitoring the management are infected by hubris, rather than pure agency within management. This would also connect the results to investor sentiment, where investors become overoptimistic about takeovers in hot markets (as stated by e.g. Rosen 2006). Investor sentiment could have possible spillover effects on managers, and if so, those cannot be referred to as agency – according to the separation between hubris and agency. Therefore, we raise the argument that there might in fact be more hubris than the empirical results suggest.

Furthermore, institutional investors and owners with large percentages of the voting rights should, in protecting their own interests as principals, monitor the company sufficiently. The statistically significant evidence of agency problems in the deals studied

could in turn be explained by a lack of corporate stewardship among managers together with poor monitoring by owners and stakeholders. Mergers that are sufficiently monitored and approved by the owners should be motivated by hubris if the deal has negative total gains, where individuals involved in the deal, both managers and stakeholders may all see non-existing synergies, which leads to an overpayment.

5.2 The Cash and Stock Deals Subsamples

When looking at payment mode subsamples there seems to be differences in the presence of hubris. The correlations in our sample affirm that synergy seems to be the primary motive for deals using stock, as apposed to deals using cash where hubris seems to be the main motive on average. Concerning the distribution of wealth gains between bidders, targets and in total, our results differ from e.g. the Andrade et al (2001) study. They found that total gains were higher in deals using cash as opposed to deals using stock, a finding that contrasts our results. Our results are further strengthened by the fact that in both the positive and the negative total gain subsamples, the total gains are higher in the deals using stock as a financing. Notably, the stock subsample is the only subsample that has a higher amount of deals with positive total gains (55%) than negative total gains.

Table 5.2 Correlations between gains in the stock and the cash subsamples

Correlation between	Target and total gain	P-value	Target and acquirer gain	P-value
2. All Stock deals (44)	0.4042	0.9997	0.0169	0.6820
2a. Positive Total Gains sub-sample (24)	0.5590	0.0427**	0.1426	0.3270
2b. Negative Total Gains sub-sample (20)	-0.1937	0.0552*	-0.5204	0.1847
3. All Cash deals (45)	-0.0245	0.1050	-0.1965	0.0022***
3a. Positive Total Gains sub-sample (14)	0.2568	0.3053	0.0891	0.6504
3b. Negative Total Gains sub-sample (29)	-0.0343	0.0013***	-0.2231	0.0005***

The correlations are calculated using the aggregated gains/losses to the transaction parties during the 11-day event window and the p-values are used to determine the significance of the correlations. P-values show a significance level at 10%, 5%, 1% and are marked with *, **, *** respectively.

The successful deals in both of the subsamples seem to be driven by synergy, but in stock deals the total gains are more evenly distributed among the acquirers and the

targets. In the deals settled with cash there is a clear transfer of wealth from the acquirers to the targets. Even though this may not come as a surprise, there seems to be differences in underlying motives. Cash financed deals show significant evidence of agency and the corresponding stock deals present more ambiguous evidence of both synergy and hubris.

5.2.1 The Stock Subsamples - The MTH Perspective

One reason for the finding of deals using stock creating more total wealth on average than deals using cash might be information asymmetry. Therefore, we believe that the results of the stock subsample can be analyzed with the MTH. According to the MTH, managers have the ability to identify misvaluations, or at least think they can, and may therefore take opportunities to time transactions. As MTH assumes inefficient capital markets, in terms of under and overvaluation, at least in the short term, the theory may serve as an explanation for why stock deals on average create more value than cash deals. It is important to note that we do not research this aspect in particular, why the discussion about market timing is solely applied to understand the results seen in the stock subsample compared to the cash subsample.

Managers may successfully or unsuccessfully try to take advantage of using stock as a method of payment if they perceive it as overvalued. This could be hypothesized as if managers perceive their equity to be overvalued, then it does not matter if the deal itself creates negative announcement effects as long as the total gains are positive. If this is true, then there is a timing dimension of management behavior when using overvalued equity as deal payment (Shleifer & Vishny, 2003). Rodes-Kropf et al (2005) found evidence of stock acquirers being more overvalued than cash acquirers, which gives further strength to the argument that managers use stock instead of cash if they believe equity is overvalued.

With an overvalued stock a deal settled with stock as payment would decrease the risk of hubris since the acquirer would pay less due to the real value of the stock. On the other hand, one can argue that the market would punish the acquirer for using stock as deal financing, signaling overvaluation, in line with the Pecking order theory (Myers, 1984; Myers & Majluf, 1984). If so, we assume the market would punish market-timing bidders for overvaluation rather than overpaying. The resulting effect upon announcement

would therefore lead to market-timing bidders seeing negative gains, but less negative than if they had used cash in the same transaction. In this respect it is easy for ideas of MTH to become a self-fulfilling prophecy if the market systematically punishes bidders paying with stock, even if they are not overvalued. However, it is unlikely that market timing can be done systematically, which means that the discussion about the MTH cannot be applied to fully explain why the stock deals on average have created more total gains in our sample. If managers are in fact wrong about their overvaluations, they will pay too much for deals, also when using stock. This may explain why the negative stock subsample is primarily driven by agency and with signs of hubris.

5.2.2 Hubris in the Cash Subsamples – A Cash Problem?

The notion of managers being able to time the market as explaining why stock deals create more value than cash deals in our sample can be contrasted by what we in this section refer to as the cash problem. This refers to the issue of managers using the free cash flow to make poor investments simply because they have the possibility, which is an agency problem (Jensen, 1986; Harford, 2005). In the context of this paper, these value-destroying investments are acquisitions of other companies.

The fact that only 1/3 of the deals made with cash seem to be driven by synergies and the fact that cash deals on average are driven by hubris supports this theory. In line with the Harford (1999, 2005) model that predicts that capital liquidity drives M&A, one could assume that there is a timing aspect in deal activity when bidders are rich on cash or can access capital easily. The large negative total gain subsample of cash bidders can in this respect be explained by agency, in line with Jensen (1986) and Lang et al (1991). We assume possible explanations of the high portion of negative gains to bidders and to total gains in the all cash subsample can be that the market punishes these cash bidders for overpayment, which in turn is possible due to managers' access to excess capital or free cash flow as deal financing.

The empirical data from the total cash deal subsample suggests that hubris on average drives Nordic cash deals, and we see significant evidence of agency in the negative total gains subsample. Whether the motive is agency, in terms of pursuing managerial wealth, or hubris, in terms of overconfidence by overestimating M&A gains, is hard to distinguish in our sample.

5.3 The Fifth and Sixth Merger Wave Subsamples

The number of deals as well as the sizes of the individual deals appears to grow and decline in wave patterns, with one wave pattern during the time period 1993-2001 and another wave pattern during the time period 2003-2008. During both waves there was a significant growth in the number of deals during the beginning of the period and a sharp decline in the number of deals that coincide with a crash of the equity markets. In our sample, the wave pattern is more pronounced during the fifth merger wave than during the sixth merger wave.

Table 5.3 Correlations between the deal gains during the two merger waves

Correlation between	Target and total gain	P-value	Target and acquirer gain	P-value
1. Fifth Merger Wave (53)	0.2057	<i>0.0154**</i>	-0.1673	<i>0.0021**</i>
1a. Positive Total Gains sub-sample (22)	0.6762	<i>0.1521</i>	0.1890	<i>0.9344</i>
1b. Negative Total Gains sub-sample (31)	-0.3798	<i>0.0004***</i>	-0.6085	<i>0.0007***</i>
2. Sixth Merger Wave (35)	0.2346	<i>0.5319</i>	0.0187	<i>0.4708</i>
2a. Positive Total Gains sub-sample (15)	0.3616	<i>0.0842*</i>	0.0973	<i>0.1796</i>
2b. Negative Total Gains sub-sample (20)	-0.0361	<i>0.0675*</i>	-0.2551	<i>0.1075</i>

*The correlations are calculated using the aggregated gains/losses to the transaction parties during the 11-day event window and the p-values are used to determine the significance of the correlations. P-values show a significance level at 10%, 5%, 1% and are marked with *, **, *** respectively.*

We assume that the level of hubris would be smaller for the sixth merger wave sample than in the fifth merger wave sample, in accordance with Hypothesis 3. One reason for this would be that the corporate governance system of the Nordic countries should function as an agency and hubris repressing mechanism. Another reason would be the non-significant evidence of agency in the sixth wave compared to the fifth wave subsamples.

5.3.1 Hubris and the Development of Corporate Governance

The discrepancies between the Nordic and the Anglo-American corporate governance, which have previously been analyzed in chapter 5.1.2, should also have an effect on hubris induced decision making over time. We assume that the traits of Nordic corporate

governance should dampen the levels of hubris within Nordic M&A and do this to a greater extent over time.

There is also an occurring conformation of corporate governance systems (Clarke, 2007). This implies that the Nordic countries are adopting principles and practices from the other EU countries, such as the formulation of codes for corporate governance. This should also contribute to an overall enhancement of corporate governance system and thus smaller possibilities for shareholder wealth destroying behavior such as agency or hubris induced decision-making. There is a discussion regarding what corporate system will prevail and become the dominating system that a majority of countries will adopt, if there will be a conformation at all or if there will be several systems coexisting (Pedersen and Thomsen, 1997). There has been a shift towards best practice however and Nordic companies are to a higher degree forced to adopt international practices.

Because of this development towards best practice, we assume that the correlations should indicate a higher degree of agency and hubris during the fifth merger wave and a corresponding higher degree of synergy motive during the sixth merger wave. That can be observed in the data sample, however not with statistical significance. The fact that the size of the total gains is slightly higher during the sixth merger wave than during the fifth, also gives indication of the sixth merger wave having lower levels of hubris.

The results of the positive and negative total gains subsamples in the fifth and the sixth merger waves give strength to the implications above. In the positive total gains subsample, the correlations indicate synergy motives and in the negative total gains subsample the correlations indicate agency or hubris. The sole difference between the fifth and sixth merger wave subsamples is that the highly significant negative correlations in the negative total gains subsample in the fifth merger wave subsample is replaced by a less negative correlation of weaker significance in the sixth merger wave. This indicates that there might have been a decline in agency or hubris-induced decision-making and an increase of synergy induced behavior. Also this indicates that there might be an effect of the Nordic corporate governance system and conformation to international standards that helps to reduce hubris and agency induced behavior.

6. CONCLUSION

This sixth chapter presents the conclusions that are drawn from the analysis. Firstly, the main findings of the study are summarized and the conclusions that can be drawn from the analysis of the correlations are presented. Secondly, concluding remarks are presented. Thirdly, the limitations of the results are explained. Finally, future research of the topic of hubris is suggested.

6.1 Summary of Main Findings and Conclusions

Our findings for the total sample as well as the subsamples are summarized respectively in the following chapters. The three hypotheses outlined in chapter 3.2 are addressed.

6.1.1 Hubris in the Total Sample

In our sample, we find that 58% of the Nordic mergers between 1993 and 2008 have negative total gains, and can therefore conclude that our study provides evidence of Nordic acquirers paying too much for their targets. We see evidence of both synergy and non-synergy motives for Nordic mergers during this period. In contrast to previous studies made in other markets, we do not find statistically significant evidence for synergy motives, even if a clear pattern is present on a non-significant level. Instead, we see significant evidence of agency problems as the explanatory factor for the value destroying deals. Even if there is no significant proof of hubris as the primary underlying merger motive in the total sample, an eventual presence of hubris in the Nordic market cannot be discarded. *H1 can therefore neither be accepted nor rejected.*

6.1.2 Payment Affect the Level of Hubris in Nordic M&A

In an efficient market, without information asymmetry, there would be no separation between using stock or cash to finance M&A. In this respect the motives of takeovers would be the same for similar deals, independent on the type of financing. However, because of the issues of market timing and the cash problem, there could be discrepancies in the indications of the merger motives. Without drawing any conclusions

concerning the pros and cons of various forms of deal financing in general, we found evidence for the method of payment affecting the level of hubris in our sample of Nordic M&A and *H2 is therefore rejected*. If the observed hubris can be contributed only to managers or if investors are involved cannot be determined. However, we believe it can result both from managerial hubris and investor sentiment (in line with Rosen, 2006).

In the deals using cash subsample we find evidence that the studied deals on average are driven by hubris and that 67% of the deals are influenced by agency. On the contrary, the deals using stock subsample is to a larger extent driven by synergy but still, around 45% of the subsample show evidence of either hubris or agency. By applying the MTH and discussing the cash problem we give possible explanation to our results.

The implications of the MTH is used to explain why synergy drives the positive stock subsample since paying with overvalued stock is assumed to decrease the risk of overpayment. The negative total gain stock subsample on the other hand shows evidence of both hubris and agency. This would therefore be an opposite of market timing, i.e. target misevaluations and overconfidence in abilities to extract expected synergies leading to overpayment. On the other hand, we argue, managers might time the market but still overpay – resulting in hubris but to a lesser extent.

If the market punishes acquirers for paying in cash, on the other hand, it would reflect overpayment as opposed to stock overvaluation, since cash is assumed to have a constant value compared to equity. We believe that one reason for the Nordic market punishing cash bidders can be derived from the overinvestment theory, in which managers with large cash reserves tend to overinvest, in a M&A context, and pay too much for their targets – especially when having access to cash or other sources of capital, in line with Jensen (1986) and Harford (1999, 2005).

We apply the theories of the MTH and overinvestment to explain why 2/3 of the cash deals in our sample are driven by either agency or hubris, and that the cash deals are driven by hubris on average. The implication of the results is that in half of the studied deals, the deals using cash, managers do overestimate their own abilities when evaluating targets – on purpose, adhering to the agency motive, or because of overconfidence, adhering to the hubris motive.

6.1.3 Managerial Hubris During the Fifth and Sixth Merger Waves

The study shows that the merger motives are not significantly different between the two studied merger waves and therefore *H3 is rejected*. The exception to this is that there is a smaller degree of agency or hubris in the sixth merger wave than in the fifth, both in the total and negative total gains subsamples. The results are not statistically significant, however, but there are slightly higher total positive gains in the deals during the sixth merger wave than those during the fifth. The results raise the issue of Nordic corporate governance and its conformation to Anglo-American practices and whether it has a hubris dampening effect.

6.2 Concluding Remarks

In the confines of Nordic corporate governance, with close monitoring from institutional owners and stakeholders, agency problems should be mitigated, at least to some extent. If the monitoring by owners and stakeholders is sufficient, the negative gains should, at least to some extent, be explained by hubris-infected behavior due to the idea of corporate stewardship as a prerequisite for Roll's hubris hypothesis.

The findings of our study indicate synergy as well as non-synergy motives for Nordic tender offers, in line with previous studies made in other markets. Although, our findings consists of more deals with negative total gains compared to findings in other markets. This paper therefore contributes with a Nordic aspect of the issue of takeover motives and hubris, together with previous studies of North America (Berkovitch & Narayanan, 1993), Europe (Goergen & Renneboog, 2004), The United Kingdom (Hodgkinson & Partington, 2008) and Japan (Lin et al, 2008). We believe that our results, at least partly, can be generalized to other markets with similar characteristics, at least to some extent.

6.3 Limitations of Results

Firstly, our results and findings are limited to completed public tender offers in the Nordic market during the time period 1993-2008. Our findings may thereby not be valid for explaining friendly mergers or private settled deals. The ability to generalize the findings to the broad Nordic M&A market may therefore be restricted. However, we

believe our findings give valuable implications that might also be valid for non-tender offers in Nordic M&A deals.

Secondly, by interpreting short-term announcement effects we do not evaluate the actual long-term results. The used methodology does not evaluate if the pre-deal expectations actually are fulfilled ex post. Furthermore, as the hubris hypothesis assumes efficient markets, the used methodology does not discuss market specific issues such as if the Nordic takeover market is biased towards announcement of tender offers. In this respect, we thereby assume similar efficient markets as the assumptions of the Hubris Hypothesis. To conclude, it is important to stress that our study is based on the short-term effects of merger announcements – and that the results can be different for the long term.

Thirdly, by using Berkovitch and Narayanan's model the possibility of interpreting the level of hubris in individual deals or for individual acquirers is restricted. The used methodology provides results in a holistic manner, either for a total sample or for a subsample. Hence, our results and findings are valid to understand the studied population as a whole.

6.3 Suggested Future Research

During the process and on completion of the thesis, we have found several themes that we would find interesting to research further.

By studying completed tender offers we focus on acquisitions that have gone through, and do not analyze if managers listen to the market. Kau et al (2008) studied this on the US market and found that, on average, managers are more likely to cancel investments when the market reacts unfavorably to the related announcement. They also found that firms tend to listen to the market more when more of their shares are held by large shareholders. This makes the Nordic market interesting for further study especially concerning the high level of negative announcement effects.

Moreover, our subsamples focus on measuring variances due to method of payment and characteristics of two merger waves. Even though we focus on contrasting the studied two merger waves, it could be interesting to divide a wave into additional subsamples to understand when hubris is more present and if an eventual pattern can be observed across merger waves.

In addition, we find supplementary dimensions of interest, for example firm size, book-to-market, FDI activity, industry patterns and manager specific dimensions, such as executive compensation and manager media praise. Incorporating such dimensions would provide further insight into studies of takeover motives, such as hubris.

As a supplement to our study of the Nordic market as a whole, we suggest longitudinal studies of individual deals and individual managers to complement our study. Malmendier and Tate (2005, 2008) have performed studies of individual managers, and Hayward & Hambrick (1997) presented a study of individual deals. We believe that the results of a study combining these two attributes in a Nordic setting, such as the one that Brown & Sarma (2006) performed on the Australian market, would contribute to research. Especially when analyzing the impact of Nordic corporate governance.

Further concerning methodology, our empirical findings solely rely on quantitative data. We suggest the use of qualitative data, as either a complement or a substitute, to gain auxiliary insight. For example, interviews with key decision makers in individual deals may generate a deeper understanding of the research problem.

Another primary suggestion for further research is simply to extend the study to incorporate the long-term. This would prove if indicated hubris in the short-term could be justified when the two firms have integrated actual operating and financial performance. Rosen (2006) is one example of a study incorporating the long-term though it focuses on measuring and explaining merger momentum.

Moreover, the role of financial advisors is interesting after concluding findings of hubris and agency in Nordic tender offers. Halvorsen & Lundberg (2007) is one example of a study linking on hubris to financial advisors. They conclude that Nordic financial experts issue relatively more buy than sell recommendations. This aspect could be researched further concerning how financial advisors influence managers and if this is a source of hubris in the Nordic M&A market.

Finally, we encourage further research of the eventual link between the MTH and M&A, primarily concerning takeover motives. We have used the ideas of the MTH to understand the managerial behavior we observe in our empirical results, but additional research is needed to prove if this argumentation is valid and to what extent managers in this respect actually time the M&A market.

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Appendix 1. Summary of takeover waves

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
<i>Period</i>	1890s-1903	1910s-29	1950s-73	1981-89	1993-2001	2003-08
<i>Geographical Scope</i>	US	US	US, UK, Europe	US, UK, Europe, Asia	US, UK, Europe, Asia	US, UK, Europe, Asia
<i>M&A outcome</i>	Formation of monopolies	Formation of oligopolies	Growth through diversification	Elimination of inefficiencies	Adjustment to globalization process	Global expansion, economies of scale and integration
<i>Dominant sources of financing/ means of payment</i>	Cash	Equity	Equity	Debt financed/Cash paid	Equity	Debt and Cash financed/ Cash paid
<i>Cross-border M&As</i>	n.a	n.a	n.a	Some	Medium	High
<i>Other specifics</i>				LBOs, MBOs, going-private deals, and Divestiture	Mega deals, divestitures	Deals by private equity funds
<i>Events in beginning of wave</i>	Economic expansion; industrialization processes; development of NYSE, radical changes in technology	Economic recovery after the market crash and recovery from first world war, enforcement of US antimonopoly law	Economic recovery after second world war, tightening of antitrust regime in 1950s	Economic recovery after recession; changes in antitrust policy; deregulation of financial sector; new financial instruments and markets (e.g. junk bonds); technological progress in electronics	Economic and financial markets boom; globalization processes; technological innovation, deregulation and privatization	Economic recovery after dot com stock market burst in 2000-01, adaptation towards Sarbanes-Oxley
<i>Events coinciding with end of wave</i>	Stock market crash; economic stagnation; beginning of first world war	Stock market crash; beginning of big depression	Stock market crash; oil crisis; economic slowdown	Stock market crash	Stock market crash; 9/11 terrorist attacks	Stock market crash; Subprime and American mortgage crisis; financial crisis

Sources: Moeller & Brady (2007); Martynova & Renneboog 2008.

Appendix 2. Search Criteria used in Thomson OneBanker

Search Criteria			
Request	Operator	Description	Hits
Database	Include	All Mergers & Acquisitions	n/a
Announced Date	Between	01/01/1993 to 01/01/2009	n/a
Acquiror Nation (Code)	Include	FN{~}IC{~}NO{~}SW{~}DN	23802
Target Nation (Code)	Include	Denmark{~}Finland{~}Norway{~}Sweden{~}Iceland	17863
Acquiror Public Status (Code)	Include	Public	6035
Target Public Status (Code)	Include	Public	1106
Deal Type (Code)	Include	Tender Offers	208
Deal Status Rollup (Code)	Include	Completed	153
Ranking Value inc. Net Debt of Target (\$Mil)	Between	1 to HI	146
Deal Basics Report		Deal Basics Repor...{~}	146

Source: Thomson OneBanker – search made 2009-05-07.

Appendix 3. Deal Sample

Total number of deals = 88

T₀ = Announcement Day

T ₀	Acquirer	Acquirer country	Industry Setting	Target	Target country	Deal size (mUSD)	Payment Mode
2006-01-09	AcondoFrontec AB	Sweden	High Technology	Resco AB	Sweden	23.2	All share
2003-02-28	Adera AB	Sweden	High Technology	Mogul AB	Sweden	26.3	Newly issued share
1999-10-01	Amer Group Ltd	Finland	Consumer products	Suunto Oyj	Finland	63.0	All cash
1996-09-17	Anders Dios AB	Sweden	Real Estate	Hemstaden	Sweden	31.0	Newly issued share
1995-08-07	ASG AB	Sweden	Industrials	Frigoscandia AB	Sweden	254.5	All share
1995-09-15	AssiDoman AB	Sweden	Financials	Forvaltnings AB Hasselfors	Sweden	191.9	All share
1995-11-12	Atle AB	Sweden	Financials	Karolin Invest AB	Sweden	145.3	All cash
1993-11-08	Bergens Skillingsbank AS	Norway	Financials	Norges Hypotekinstitut	Norway	18.1	All cash
1995-11-15	Bergesen DY A/S	Norway	Industrials	Havtor	Norway	591.4	Newly issued share
2000-10-06	Bergman & Beving AB	Sweden	Industrials	FB Industri Holding AB	Sweden	11.9	All cash
2000-09-11	Bryggerigruppen A/S	Denmark	Consumer staples	Albani Bryggerierna A/S	Denmark	51.6	All cash
1996-03-06	C W Obel A/S	Denmark	Industrials	SN Holding(New)	Denmark	143.9	All cash
1995-05-23	Christiania Bank	Norway	Financials	Norgeskreditt Holding AS	Norway	401.5	All cash
2002-04-23	Columna Fastigheter AB	Sweden	Real Estate	Realia AB	Sweden	0.9	Newly issued share
1999-03-01	Danisco A/S	Denmark	Consumer staples	Cultor Oy	Finland	1394.6	All cash
2006-11-20	Danske Bank A/S	Denmark	Financials	RealDamnark A/S	Denmark	620.4	All cash
1998-11-12	Den Danske Bank AS	Denmark	Financials	Fokus Bank AS	Denmark	779.3	All cash
1997-03-21	Den Norske Banken ASA	Norway	Financials	Vital Forsikring A/S	Norway	398.9	All cash
1995-05-15	Den Norske Banken ASA	Norway	Financials	Bolig-og Naeringsbanken	Denmark	279.7	All cash
1997-08-06	Diligentia AB	Sweden	Real Estate	Hufvudstaden International	Sweden	122.3	Newly issued share
2001-12-17	Dimension AB	Sweden	High Technology	Kipling Holding AB	Sweden	2.6	Cash and share
2007-08-20	DNB Nor Bank ASA	Norway	Financials	SalusAnsvar AB	Sweden	103.6	All cash
1998-09-09	Drott AB	Sweden	Real Estate	Nackebro AB	Sweden	384.0	All cash
2001-06-22	Egnsbank Han Herred	Denmark	Financials	DAI Holdings	Sweden	19.8	All cash
2005-12-09	Fast Search & Transfer	Norway	High Technology	Opticom ASA	Denmark	262.7	All share
1999-03-23	Fastighets AB Balder	Sweden	Real Estate	PriFast AB	Sweden	183.4	All cash
2000-03-18	Friluftsbolaget	Sweden	Retail	Naturkompaniet AB	Sweden	9.6	Cash and share
1995-07-12	Getinge Industrier AB	Sweden	Industrials	LIC Care AB (Axel Johnson AB)	Sweden	76.3	All cash
1995-06-07	Getinge Industrier AB	Sweden	Industrials	Arjo AB	Sweden	312.4	All share
2003-01-06	GPV Industri AS	Denmark	High Technology	Chemitalic AS	Denmark	4.7	All cash
1996-08-27	Hexagon AB	Sweden	Industrials	Swepart Verktug AB	Sweden	48.6	All share
1994-03-14	Investor AB	Sweden	Financials	Export-Invest AB	Sweden	439.5	All share
2004-08-12	Islandsbanki hs	Iceland	Financials	Kreditbanken ASA	Norway	51.0	All cash
2002-09-29	Kaupthing Bank HS	Iceland	Financials	JP Nordiska AB	Sweden	32.5	All share
2002-05-20	Kone Corp	Finland	Industrials	Partek AB Oy	Finland	1134.7	Cash and liabilities

2000-05-08	Lindab AB	Sweden	Industrials	Folkebolagen AB	Sweden	14.9	All cash
2003-06-13	LjungbergGruppen AB	Sweden	Real Estate	Fastighets AB Celtica	Sweden	17.9	All cash
2006-06-09	Mamut ASA	Norway	High Technology	Active 24 ASA	Norway	24.4	All cash
2000-02-08	Mandator AB	Sweden	High Technology	Cell Network AB	Sweden	670.1	Newly issued share
2000-02-28	Merkantidata ASA	Norway	High Technology	Provida A/S	Norway	115.1	Cash and share
2000-06-21	Metso Oyj	Finland	Industrials	Svedala Industri AB	Sweden	1030.3	All cash
2000-11-20	Navision Software A/S	Denmark	High Technology	Damgaard A/S	Denmark	276.3	All share
2004-12-22	Nocom AB	Sweden	High Technology	TurnIT AB	Sweden	24.8	Newly issued share
1999-09-20	Nordbanken Holding AB	Sweden	Financials	Merita Oy	Finland	4824.6	Newly issued share
1997-01-08	OEM International AB	Sweden	Industrials	Cyncrona	Sweden	57.3	Newly issued share
1998-08-10	Prosafe ASA	Norway	Energy and Power	Discoverer ASA	Norway	116.7	Cash and share
2003-02-13	Raisio Yhtymä Oyj	Finland	Consumer staples	Diffchamb AB	Sweden	18.7	All cash
1997-01-15	Rieber & Son ASA	Norway	Industrials	Phoenix Contractors A/S	Denmark	133.6	All cash
1999-01-22	Rieber & Son ASA	Norway	Consumer staples	SE Labels AS	Denmark	54.5	All cash
2005-11-17	RNB Retail and Brands AB	Sweden	Retail	JC AB	Sweden	212.8	Newly issued share
1999-11-16	Saab AB	Sweden	Industrials	Celsius AB	Sweden	597.5	All cash
2004-01-11	Scania AB	Sweden	Industrials	Ainax AB	Sweden	992.9	Newly issued share
2001-02-05	Scribona AB	Sweden	Media	Sifo	Sweden	19.6	All cash
1996-05-31	Scribona AB	Sweden	Retail	PC-Lan ASA	Norway	33.6	All share
2006-01-04	SeaDrill Ltd	Norway	Energy and Power	Smedvig ASA	Norway	2392.9	All cash
1994-11-03	Sifab Fastighets AB	Sweden	Real Estate	Anderssons	Denmark	25.8	All share
1998-09-22	Sigma AB	Sweden	High Technology	Benima Ferator Engineering	Sweden	24.9	All cash
2004-05-06	Sigma AB	Sweden	High Technology	RKS AB	Sweden	14.4	All share
1997-10-02	Skandinaviska Enskilda Banken	Sweden	Financials	Trygg-Hansa Forsakrings AB	Sweden	2204.2	Cash and share
2000-04-13	Skanska AB	Sweden	Industrials	Skane Gripen AB	Sweden	368.8	All share
1996-06-10	Skanska AB	Sweden	Industrials	Selmer ASA	Norway	286.9	All cash
2007-10-01	Stockman Oyj	Finland	Retail	Lindex AB	Sweden	1237.0	All cash
1999-01-06	Storebrand AS	Norway	Financials	Finansbanken ASA Oslo Reinsurance Co ASA	Norway	189.4	All cash
1999-04-29	Storebrand ASA	Norway	Financials	Bergensbanken ASA	Norway	48.1	All cash
1999-05-03	Svenska Handelsbanken	Sweden	Financials	Bergensbanken ASA	Norway	182.7	All cash
2008-09-15	Svenska Handelsbanken	Sweden	Financials	Midtbank A/S	Denmark	262.5	All cash
2001-04-11	Svenska Handelsbanken	Sweden	Financials	Lokalbanken i Nordsjaelland A/S	Denmark	152.1	All cash
2008-09-12	Tanberg Data ASA	Norway	High Technology	Tandberg Storage ASA	Norway	1.2	All share
2004-09-14	TDC A/S	Denmark	Telecommunicat ions	Song Networks Holding AB	Sweden	754.6	All cash
2001-12-10	Teleca AB	Sweden	High Technology	AU-Systems AB	Sweden	126.2	All share
2002-07-05	Teleca AB	Sweden	High Technology	Pronyx AB	Sweden	2.2	All share
2006-06-05	Telefonbolaget LM Ericsson	Sweden	Telecommunicat ions	Netwise AB	Sweden	42.4	All cash
2005-03-15	Telelogic AB	Sweden	High Technology	Focal Point AB	Sweden	13.9	Newly issued share
2006-02-08	Teligent AB	Sweden	High Technology	Trio Enterprise AB	Sweden	36.4	All share
1999-03-03	Tieto Corp Oy	Finland	Retail	Enator AB	Sweden	1020.5	All share

2000-05-15	TietoEnator Oyj	Finland	High Technology	Entra Data AB	Sweden	264.5	Newly issued share
1998-05-14	Tryg-Baltica Forsikring	Denmark	Financials	Dansk Kautionsforsikring ASA	Denmark	109.9	All cash
2000-09-13	Turnit AB	Sweden	High Technology	Arete AB	Sweden	41.0	Newly issued share
2000-08-31	Veidekke ASA	Norway	Industrials	Stavdal Maskinutv. AS	Norway	26.6	All cash
2000-01-22	Veidekke ASA	Norway	Industrials	Hoffman & Sonner A/S	Denmark	47.1	All cash
2003-12-12	Vestas Wind Systems A/S	Denmark	Industrials	NEG Micon A/S	Denmark	403.8	Newly issued share
2004-07-19	Wihlborg Fastigheter AB	Sweden	Real Estate	Storheden Fastighets AB	Sweden	255.4	Newly issued share
1998-04-14	Wihlborg Fastigheter AB	Sweden	Real Estate	Fabege AB	Sweden	565.6	All share
1997-09-12	Wihlborgs Fastigheter AB	Sweden	Real Estate	Klovern Foervaltnings AB	Sweden	679.1	Cash and share
1998-12-14	WM Data AB	Sweden	High Technology	Caran AB	Sweden	69.7	All cash
2003-10-29	WM Data AB	Sweden	High Technology	Novo Group Oyj	Finland	236.5	Cash and share
1995-05-23	WM-data AB	Sweden	High Technology	Owell Svenska	Sweden	56.4	Cash and share
2007-09-24	Xpon CardGroup	Sweden	Industrials	All Cards Service Center	Sweden	296.0	All share

Appendix 4. Calculation of Beta

Example: Export Invest (Target), Source: Datastream

Name	EXPORT INVEST AF DEAD - 04/08/94(-E)					
Code	504036(P)-E					
CURRENCY	Euro					
	Stock					
Date	Price	Return	Date	Index	Return	
12/6/93	13.7	=LN(13.65/13.7)	12/6/93	8.1	=LN(8.2/8.1)	
12/7/93	13.65	0	12/7/93	8.2	0.001218769	
12/8/93	13.65	-0.005878048	12/8/93	8.21	0.002433091	
12/9/93	13.57	-0.005912804	12/9/93	8.23	-0.013455861	
12/10/93	13.49	-0.005202539	12/10/93	8.12	0	
12/13/93	13.42	0	12/13/93	8.12	-0.004938282	
12/14/93	13.42	-0.021846443	12/14/93	8.08	0.009852296	
12/15/93	13.13	-0.029368417	12/15/93	8.16	0.002447982	
12/16/93	12.75	0.022490285	12/16/93	8.18	0	
12/17/93	13.04	0.022745484	12/17/93	8.18	0.004878058	
12/20/93	13.34	0.001498128	12/20/93	8.22	0.002430135	
12/21/93	13.36	0.008199822	12/21/93	8.24	0.009661911	
12/22/93	13.47	0.002224695	12/22/93	8.32	0.010759219	
12/23/93	13.5	0.002219757	12/23/93	8.41	0.002375298	
12/24/93	13.53	0	12/24/93	8.43	-0.001186944	
12/27/93	13.53	-0.023178608	12/27/93	8.42	-0.001188354	
12/28/93	13.22	0.00452831	12/28/93	8.41	0.021177262	
12/29/93	13.28	0.026747508	12/29/93	8.59	0.003486349	
12/30/93	13.64	0.000732869	12/30/93	8.62	0	
12/31/93	13.65	0	12/31/93	8.62	0.013825105	
1/3/94	13.65	0.023888215	1/3/94	8.74	0.014764607	
1/4/94	13.98	0.020531695	1/4/94	8.87	0.008978736	
1/5/94	14.27	0.00349773	1/5/94	8.95	0.002232144	
1/6/94	14.32	0.023465535	1/6/94	8.97	0.025317808	

1/7/94	14.66	0.026255295	1/7/94	9.2	0.017241806
1/10/94	15.05	0.009917437	1/10/94	9.36	-0.003210276
1/11/94	15.2	-0.007926065	1/11/94	9.33	-0.009693129
1/12/94	15.08	0.012520757	1/12/94	9.24	0.008620743
1/13/94	15.27	-0.000655093	1/13/94	9.32	0.013852113
1/14/94	15.26	0.064702335	1/14/94	9.45	0.035346715
1/17/94	16.28	-0.055569851	1/17/94	9.79	-0.00204499
1/18/94	15.4	0.051877539	1/18/94	9.77	0.004085808
1/19/94	16.22	-0.035135358	1/19/94	9.81	-0.011276388
1/20/94	15.66	0.022103836	1/20/94	9.7	0.0102565
1/21/94	16.01	-0.002501565	1/21/94	9.8	0.008130126
1/24/94	15.97	0.00810731	1/24/94	9.88	-0.015298616
1/25/94	16.1	0.011732151	1/25/94	9.73	0.012257559
1/26/94	16.29	0.019453501	1/26/94	9.85	0.014113137
1/27/94	16.61	0.004205473	1/27/94	9.99	0.004992522
1/28/94	16.68	0.019591009	1/28/94	10.04	0.027506646
1/31/94	17.01	-0.028624495	1/31/94	10.32	-0.013658749
2/1/94	16.53	0.004828012	2/1/94	10.18	0.006852694
2/2/94	16.61	-0.009071728	2/2/94	10.25	-0.002931121
2/3/94	16.46	-0.009768087	2/3/94	10.22	0.005853675
2/4/94	16.3	-0.052262443	2/4/94	10.28	-0.02961717
2/7/94	15.47	0.043017385	2/7/94	9.98	0.006989544
2/8/94	16.15	-0.036574064	2/8/94	10.05	-0.004987542
2/9/94	15.57	-0.010978476	2/9/94	10	-0.032523192
2/10/94	15.4	-0.049927174	2/10/94	9.68	-0.013520747
2/11/94	14.65	-0.002049881	2/11/94	9.55	0.003136437
2/14/94	14.62	0.016955306	2/14/94	9.58	0.004166673
2/15/94	14.87	0.008037552	2/15/94	9.62	0.015472201
2/16/94	14.99	0.030872731	2/16/94	9.77	0.030244241
2/17/94	15.46	0.00837364	2/17/94	10.07	-0.002983592
2/18/94	15.59	-0.029289435	2/18/94	10.04	-0.004992522

2/21/94	15.14	0.01832512	2/21/94	9.99	-0.003007521
2/22/94	15.42	0.006464147	2/22/94	9.96	0.005007522
2/23/94	15.52	-0.036749542	2/23/94	10.01	-0.029398975
2/24/94	14.96	0.005998019	2/24/94	9.72	-0.01242252
2/25/94	15.05	0.016474837	2/25/94	9.6	0.00623055
2/28/94	15.3	-0.031875209	2/28/94	9.66	-0.015649772
3/1/94	14.82	-0.002026343	3/1/94	9.51	-0.021254785
3/2/94	14.79	-0.002708194	3/2/94	9.31	0.012807005
3/3/94	14.75	0.002708194	3/3/94	9.43	0.009498752
3/4/94	14.79	0.038466281	3/4/94	9.52	0.015633461
3/7/94	15.37	-0.01507731	3/7/94	9.67	-0.005184045
3/8/94	15.14	-0.003307975	3/8/94	9.62	-0.002081166
3/9/94	15.09	0.001324504	3/9/94	9.6	-0.003129893
3/10/94	15.11	-0.019379156	3/10/94	9.57	-0.011560822
3/11/94	14.82	0.238942514	3/11/94	9.46	0.018848726
3/14/94	18.82	-	3/14/94	9.64	-

A

B

C

D

E


F

**65-day
Beta**

1.10

=LINEST(C8:C72,F8:F72,1,0)

 = Announcement Day

 = Event Window

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