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The Nordic Evidence

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In search of value drivers in mergers and acquisitions: The Nordic evidence

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Abstract

The international literature on M&As is extensive, but surprisingly little evidence exists for the Nordic countries. This article attempts to fill the gap by studying 184 merger announcements from 1995 to 2014. Our findings differ in a number of ways. "First, we extend the current literature since we find that diversifying acquisitions" generate a higher bidder abnormal return compared with focused transactions. A possible explanation is that in diversifying acquisitions acquirers overpay for target firms within their core industry because they overestimate operational synergies. The managerial implication is that the notion of core business should not restrict diversified value-enhancing M&As. Secondly, we find evidence that bidder abnormal returns depend not on the method of payment. The implication is that bidders may have more flexibility with regard to the financing of deals in the Nordic countries, because the acquirer's managers do not have to take into account any negative market reactions with regard to the payment method.
Thirdly, we explore the relationship between cash flows and abnormal returns. Our results confirm current literature since we find that low-valued bidders with excessive free cash flows experience negative returns prior to an announcement. Furthermore, our results imply that a bidder company must be able convincingly to justify an acquisition to the market by communicating the presence of a sound and coherent integration plan.

Keywords: M&A value creation, means of payment, free cash flow, diversifying acquisitions

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1 INTRODUCTION

As a growth strategy M&A is risky and often comes with the promise of sizable synergies that justify the vast premiums paid to the target's shareholders. However, the stock price reaction is often not in line with expectations. Conventional wisdom states that nearly half of all mergers and acquisitions do not create added value. By way of illustration, The Boston Consulting Group (2007) found that 58.3% of deals between 1992 and 2006 destroyed value for the acquirer's shareholders. On average, they found that M&A destroyed value for the shareholders of bidding companies. Accounting for the gain of target shareholders, more than 56% of deals did in fact create value, implying that the creation of value was mostly to the benefit of target shareholders.

Several scholars have investigated the performance of M&As, but the evidence on the Nordic markets is scarce. In general, the results are not promising for the acquirer's shareholders. Franks et al. (1988) did not find any significant gains for shareholders in the UK. Similarly, Eckbo and Thorburn (2000) found no significant abnormal returns when analyzing Canadian bidding firms. Mulherin and Boone (2000) found slightly negative, but insignificant gains from M&A activity. In the US, Walker (2000) documented an insignificant negative abnormal return when analyzing US deals between 1980 and 1996. More recently, Campa and Hernando (2004) reported zero cumulative abnormal return for European acquirers, while Moeller and Schlingemann (2005) found small negative announcement returns for US bidding companies. On the contrary, Bradley et al. (1988) reported evidence of a significantly positive, yet small, abnormal return in the US. In Europe, Goergen and Renneboog (2004) documented evidence of a statistically significant announcement effect of 0.7% for bidders. Finally, the results for the target's shareholders are quite consistent, target firms having reaped vast gains.

From the paragraph above, there are at least two noteworthy observations. First, there seems to be a large body of research on the topic of value creation from M&As.

This is quite reasonable as M&As have a large effect on both bidder and target. An M&A transaction involves high risk and is a good example of the metaphor "double-edged sword" – there are both large up and downsides of a transaction. Second, the research of M&As in the *Nordic countries* is limited. However, the Nordic M&A market is growing and in 2014 reached its highest year since 2006. Due to the lack of relevant literature in the Nordic region, it seems especially important to investigate value creation and drivers arising in the growing M&A market in the Nordic countries.

According to neoclassic theory, the means of payment should not affect price reactions assuming that all securities are correctly priced and that all relevant information fully incorporated by the market participants. In practice, this will not be the case for a variety of reasons. Overall, the bidder's choice of payment method seems to be influenced by market conditions. Consequently, we study the payment method and its effect on abnormal returns of both the bidder and the target shareholders. Furthermore, we analyze cross border as well as diversifying acquisitions as these drivers may impact the price due to risk considerations. Following Georgen and Renneboog (2004), we also explore the impact in relation to value firms. Prior evidence has specifically shown that acquisitions of value firms generate the highest abnormal returns for the bidding firms, but the question remains whether this also holds true for the Nordic countries.

This article is organized as follows. The following section includes a literature review. We motivate a number of hypotheses regrading M&A-related value creation in section three. The data and methodology are outlined in section four. We present our results in section five and our conclusion in section six.

2 LITERATURE REVIEW

The evidence on value creation/destruction in relation to M&As is relatively substantial. Franks and Harris (1988) found that on average acquisitions in the UK did not generate any significant abnormal return for bidders. This evidence was also supported by Eckbo and Thorburn (2000) in their study of Canadian bidding firms. For a sample of 138 acquirers, Mulherin and Boone (2000) found a slightly negative, but still insignificant return of -0.37% across a 9-year period in the US. To complement this, Walker (2000) found an insignificant negative abnormal return of -0.84% when analyzing US deals between 1980 and 1996. Camp and Hernando (2004) investigated the performance of European mergers and acquisitions and found that on average the acquiring companies' shareholders earned zero abnormal returns. In line with this, Moeller and Schlingemann (2005) reported small negative announcement returns of bidding companies in the US. On the contrary, Bradley et al. (1988) found evidence of a significantly positive, yet small, abnormal return of 0.97% when investigating 161 deals in the US in the period from 1963 to 1984. Goergen and Renneboog (2004) found evidence of a statistically significant announcement effect of 0.7% for bidders when analyzing 228 European deals in

the period from 1993to 2000. Ultimately, a common and consistent conclusion has not been reached with regard to the benefits of M&As for the acquirers' shareholders.

The relationship between the owners of listed firms and top management including the members of the Board of Directors is characterized as a principal agency relationship. This means that top management is acting on behalf of the principals and thereby the owners. However, with the imperfect/inadequate? information available and the separation of ownership and control, agency costs arise. One of the most profound examples of agency costs is that bidder shareholders react negatively, since they associate a tender offer with agency costs.

The evidence is much more consistent and reliable when analyzing the creation of value from the point of view of the target shareholders. Most of the previous scholars investigating the presence of abnormal returns for bidding firms also investigate the effect of M&As on the target firms. They all unanimously found that shareholders of target companies reap large benefits resulting from, the sizable takeover premiums. Franks and Harris (1988) found that UK targets in the period between 1955 and1985 had a statistically significant average abnormal return of 23.3%.

By analyzing their sample of 138 US acquirers over a 9-year period (1990- 1999), Mulherin and Boone (2000) found a 20.2% significant cumulated average abnormal return in a short period after announcement. More recently, Goergen and Renneboog (2004) have documented that target firms in large intra-European M&A deals experience a 9% surge in stock price in the event window.

It is in line with the principal agency theory that target shareholders benefit from a takeover announcement since management may seek to optimize its own utility at the expense of the bidder shareholders. Growth is an important element in the utility function of most CEOs where large acquisitions may increase the status among peer CEOs. In theory, agency costs can be reduced by relying on stock options, but whether the use of stock options in itself is part of the problem with overpayment is dubious

The choice of payment method is a value driver known to affect the market reaction following a deal announcement. Travlos (1987) found evidence consistent with the well-known signaling hypothesis, when he reported that pure stock exchange bidding firms experience significant losses at the announcement, while cash bids earn "normal" rates of return for bidding firms. This is often referred to as the "signaling effect" as the company signals to the market that its equity might be overvalued. Franks and Harris (1988) analyzed 2,500 US and UK-based acquisitions from 1955 to 1985 and made the following discoveries. In both countries, target shareholders were better off in terms of short-term wealth gains from pure cash offers than from equity offers. For the bidding firm's shareholders in the UK, neither cash nor stock bids caused abnormal returns. In the US, the bidding firms earned significant and positive abnormal returns in cash acquisitions. This effect was negative for equity acquisitions. In a study of mergers and acquisitions in the US, Servaes (1991) found that both targets and bidders achieve significantly positive abnormal returns when the transaction is financed with cash and significantly lower abnormal returns when the transaction is financed with mixed funds. Doukas et al. (2001) found evidence from the Swedish stock market that all-cash offers generated positive abnormal returns for bidders. Shleifer and Vishny (2003) presented a model theorizing that overvalued companies have powerful incentives to make acquisitions using stocks because they expect to see negative long-term returns on their share. Anticipating this, the market should react negatively to all-equity acquisitions. Officer (2003) found evidence of positive and significant correlation between cash offers and bid premiums.

Goergen and Renneboog (2004) also documented that market reactions are sensitive to the method of payment. Specifically, they find strong evidence that pure cash bids generate higher returns compared to pure stock bids. They observed target abnormal returns of close to 10% in all-cash offers, while abnormal returns of 6% were calculated if offers contained all-equity or a cash/equity combination.

Perhaps more interestingly, they found that the bidding firm's price reaction was weakly negative to an all-cash offer, but that on average the market reacted positively for the bidding firm in case of an equity offer. These findings contradict much prior research based on US data. In a more recent paper based on European data, Martynova and Renneboog (2006) present evidence that supports the signaling effect since they find that bidder returns are significantly lower in all-equity and mixed offers.

Another interesting characteristic often studied is the bidder's cash flow prior to an acquisition. Jensen and Meckling (1976) argued that agency problems can arise when management avoid paying out excess cash, and use such cash to invest in negative NPV projects instead. Later, Jensen (1986) formulated the "free cash flow hypothesis". Building on Jensen's research, Lang et al. (1991) put the hypothesis to the test on large acquisitions in the US using tender offers. With the use of Tobin's Q to identify companies' investment opportunities, they found that takeover gains of low Q acquirers are negatively related to cash flow. This research is backed by Servaes (1991), who extends the sample to

include both mergers and tender offers and classifies companies as valued either high or low using industry averages of Tobin's Q. Harford (1999) and Owen and Yawson (2010) control for differences in required cash holdings by estimating cash reserves in firms. Consistent with the hypothesis, they found that cash-rich firms are more likely to acquire companies and that these acquisitions are value decreasing. Delcoure and Hunsader (2006) found that cash flow is only significantly negative for cash offers in diversifying acquisitions.

Uysal (2007) supports the free cash flow hypothesis as the author finds that underleveraged firms announcing takeovers experience negative market reactions, and that this effect is stronger for low market-to-book acquirers. Goergen and Renneboog (2004) investigated the effects of cash holdings, but from a target's point of view. They hypothesized that a large cash reserve can be an attractive target attribute as it can support the bidder's financing.

Although not statistically significant, the intuition of target cash flow is interesting and Jensen (1986) described this as a desirable characteristic of leveraged buy-out candidates.

Merger waves and their typical characteristics are well documented in M&A literature, see e.g. Alexandridis, Mavrovitis, & Travlos, (2011); Goergen & Renneboog (2004); Golbe & White (1993). The characteristics of waves often differ. Whereas the third wave in the 1960s was seen as a wave of conglomerate M&As, the fourth and fifth waves were characterized by divestitures and the focus on core business. This discrepancy has motivated scholars to investigate whether focused or diversifying acquisitions create the most value. When comparing diversifying M&As, the findings of Healy et al. (1992) are relevant. They found that post-merger operating performance measured by cash flow improvements was enhanced more in case of focused acquisitions, i.e. core acquisitions outperform non-core. Doukas et al. (2001) studied Swedish acquisitions from 1980 to 1995 and found that diversifying transactions lead to negative market reactions and deteriorated operating performance. They concluded that acquisitions within bidder's core business created the largest synergies. Their findings match other findings from Europe (Goergen & Renneboog, 2004; Martynova & Renneboog, 2006) and findings from the US (Delcoure & Hunsader, 2006; Hazelkorn & Zenner, 2004), who all found that focused M&As trigger higher wealth effects than non-core takeover bids.

The difference between domestic and international growth may have implications for the price reaction upon announcement. There could be several advantages of performing foreign direct investments in general and cross-border acquisitions in particular. The motives of cross-border acquisitions can be to increase/protect one's market share, increase geographical presence, acquire new products/services orscale economies (Sudarsanam (2003). Nevertheless, there are also hurdles to overcome that include differences in political and economic environment and differences in culture, tradition, taxation and accounting.

Eckbo and Thorburn (2000) found that Canadian domestic bidders outperform US (foreign) bidders when acquiring targets in Canada. However, in an American sample, Zenner and Hazelkorn (2004) found that acquirers engaging in cross-border transactions are more successful than those acquiring domestic targets. They attribute their findings to the possibility of broader geographic coverage and access to both local technological expertise and low-cost production facilities. Georgen and Renneboog (2004) did not find convincing evidence of differences between cross-border and domestic acquisitions of bidder's return in Europe. Their findings suggest that premiums are higher for domestic than for foreign acquisitions. Martynova and Renneboog (2006) found that a sizable portion of intra-European deals was cross-border. Further, they showed that target shareholders in domestic deals are better off than target shareholders in cross-border M&As. However, this difference also stems from the fact that the sample of domestic targets consisted of more UK targets where premiums are higher generally. Thus, it seems that there are discrepancies in terms of value creation of domestic and cross-border acquisitions. Previous research has looked at whether a target firm being defined as a growth firm or a value firm has any implications for the bidder's abnormal return. By looking at the market-to-book ratio for targets, Rau and Vermaelen (1998) found that acquisitions of targets defined as value firms generated higher abnormal return for bidders. They also found that acquisitions of high market-to-book targets, so-called growth firms, created substantial negative return for bidders. This research is in line with the more recent report by Goergen and Renneboog (2004). When looking at European and cross-border takeover bids they found that a high market-to-book ratio for targets leads to a negative abnormal return for the bidding firms. With a slightly different approach, Zenner and Hazelkorn (2004) looked at projected earnings growth rates for US acquirers over the past 12 years. They found evidence that bidders' returns were higher when the target had low projected earnings growth rates, i.e. when acquiring value firms.

3 HYPOTHESES

3.1 Value creation

We investigate the cumulative average abnormal returns of bidders and targets in hypothesis 1.1 and 1.2., respectively. As the literature review shows, previous research has diverse conclusions of bidders' abnormal returns, but there are commonalities. The abnormal return is either insignificant, or very small. Based on this we develop the first hypothesis:

Hypothesis 1.1. Bidder stock return zero upon announcement of acquisition.

For target firms, previous research consistently finds positive abnormal returns, and we therefore base our hypothesis upon these results:

Hypothesis 1.2. Target stock return positive upon announcement of acquisition.

3.2 Means of payment

According to neoclassic theory, the means of payment should not affect price reactions assuming all securities are correctly priced and all relevant information fully incorporated by market participants. In practice, this will not be the case for several reasons.

The literature review clearly shows that cash offers yield higher abnormal returns than equity offers in the US. In Europe the evidence was mixed, at least for bidding companies. From the bidding company's point of view, several aspects will affect the payment method. By paying with cash, the company can signal to the market that it has complete confidence in the acquisition in at least two ways. First, it does not have to share the acquisition risk with the target, which it would by paying in stocks. Second, by paying in cash it is effectively increasing leverage.

This signals confidence in future operations. It is also documented that leverage-increasing transactions result in positive stock price reactions (Jensen, 1986). Based on these arguments we form the following hypothesis:

Hypothesis 2.1. Cash offers yield higher bidder returns than stock offers.

Based on findings of especially Lang et al. (1991), we want to expand hypothesis 2.1. From this hypothesis, we imply that all-stock acquisitions will result is lower abnormal returns compared to all-cash or a combined offer. This is based on the pecking order hypothesis (Beck & DeMarzo, 2014, p. 570) and signaling effects. Consequently, we would expect that high value companies financing acquisitions through the stock exchange will experience the lowest abnormal returns. Because market participants are aware of asymmetric information problems, pure stock payments can cause negative price reactions due to signaling effects. This is not only observed in M&As, but also generally when companies raise money in the capital market.

If an acquirer offers cash as payment, it signals that the company is confident of the synergies of the deal, as it assumes the risk reward itself. Explained differently, by offering stocks the bidding company could share the risk of a poor deal with the target, see Martynova & Renneboog (2006). Based on this rationale, we test the following hypothesis.

Hypothesis 2.2. Stock offers from highly valued companies have the lowest abnormal bidder returns.

We also expect the payment method of the deal to affect the target's return. For the target company there are smaller risks associated with receiving a stock offer from the acquirer assuming that an acquirer never uses undervalued stocks as a means of payment. Thus, it seems rational that target shareholders will experience the highest return in case of pure cash offers.

As Shleifer & Vishny's (2003) model predicted and from the signaling effect, it seems obvious that acquirers only pay using stock if their managers believe such stock is overvalued. Anticipating this, the market will assume that the payment received by the target investors is overvalued and likely to decrease in value. Hence, all-cash offers will not possess this valuation risk and likely to be best received by the market, which gives rise to hypothesis 2.3:

Hypothesis 2.3. Cash offers yield higher target returns than stock offers.

3.3 The impact of cash flow

Following the free cash flow hypothesis, it seems that excessive cash flow may allow an acquirer to more easily avoid conducting a thorough due diligence review, as the need for raising money decreases with the size of the excessive cash flow (Jensen, 1986). This implies that managers hold more control, which can be a root to agency problems. Specifically, entrenched managers may pursue

self-interested acquisitions that would otherwise be rejected if the company needed to raise capital through the market. Alternatively, management may be overconfident rather than self-interested, which may again result in value-decreasing acquisitions. When firms have extensive cash flows, management should distribute cash to shareholders unless value-increasing projects are available. The reason is that money invested in projects with expected returns below the cost of capital will yield a negative net present value and should rather be invested individually by shareholders. However, as pointed out by Jensen & Meckling (1976), management occasionally avoid paying out cash, and any excess cash is instead used to chase the interest of the management which might drive the firm into taking on negative NPV projects.

The reasons behind agency costs vary and do not necessarily stem from self-interest. One explanation presented by Malmendier & Tate (2005) is that as a firm has earned excess cash flow from operations for a long period, the managers of such firm might become overconfident and believe they have the ability to outperform the market and that they are therefore able to turn negative NPV projects into positive ones.

As they point out, executives tend to be especially disposed to overconfidence because of the "better-than-average" effect. Managers will have engaged in and won multiple contests in order to achieve their position. It might therefore be natural to believe that their success is only attributed to skills, when most likely luck has affected the outcome as well. More relevant, the authors found that investments of overconfident CEOs are significantly more responsive to cash flow. A second factor is the wish to build an empire because of the personal value and motivation created when controlling a large corporation. A third factor is the importance of each transaction for the firm combined with the scrutiny of raising cash in the external market. If a firm is highly leveraged and has low cash flows, it will have to select acquisitions more carefully and only approach the market for financing when absolutely necessary. The opposite can be observed for firms with extensive cash flow (Jensen, 1986). Harford (1999) and Owen & Yawson (2010)) found that mature firms with ample cash are less likely to be involved in profitable deals. We therefore hypothesize that large free cash flows are negatively related to the abnormal return of the bidding firm.

Hypothesis 3.1. High cash flow will negatively affect bidder returns.

Jensen (1986) argues that the firm's value should reflect the value of its assets plus the value of any growth options available. In other words, it will be value deteriorating for the undervalued company to invest its cash because the cost of capital is higher than its potential return on investments.

The agency problems of free cash flow seem especially important for companies with low growth prospects reflected by their valuation (Lang et al., 1991). The argument is that a firm's value should reflect the value of its assets plus the value of any growth options available. In other words, it will be value deteriorating for the undervalued company to invest the cash because the cost of capital is higher than its potential return on investments. These companies should instead engage in leverage-increasing activities such as dividend payout and stock repurchases. However, this will not always be the case, as low Q firms may find positive NPV projects, e.g. find targets with profitable synergies lower than the premium they are paying, but on average it seems to be true. The idea is that the debt control function is most important for companies with low growth prospects that generate large free cash flows. Furthermore, Jensen (1986) argues that increasing cash of low Q firms will be harmful for shareholders, as management will be more inclined to engage in value-destroying acquisitions. Therefore, we formulate the following hypothesis:

Hypothesis 3.2. High cash flow and low valuation will negatively affect bidder returns

From Goergen and Renneboog (2004) as well as the private equity industry we hypothesize that a steady and high cash flow of *target* companies is a compelling target attribute, as it may serve as collateral for the bidding company or help finance the bid. This can increase the bid premium and in turn, the abnormal return. By holding large reserves of cash, a company may position itself as an attractive acquisition targetbecause target cash can help finance the deal, which will result in a higher premium. This is also true for large cash flows, which can be used to manage debt. Theoretically, when acquiring a target with a large and steady cash flow, the bidder will be able to incur more debt, which will create value through the tax shield.

Interest payments are tax deductible. With the possible tax benefits, acquirers can increase their premium, as the synergies of the deal increase. This should directly affect the abnormal return of target shareholders, as stated in hypothesis 3.3.

Hypothesis 3.3: Target cash flow will positively affect target abnormal return.

3.4 Diversifying vs. focused M&A

When expanding the business through acquisitions, management can typically choose between performing focused acquisitions where a bidder purchases a firm within the same industry, or perform a diversifying acquisition where a bidder acquires a company operating in another industry. The core of the discussion is synergies, which are supposed to rationalize conglomerates.

There are often two main ways to create value with diversifying acquisitions/conglomerates: (1) Increased market power through cross-subsidizing, mutual forbearance and reciprocal buying, and (2) operating an efficient internal capital market, in which the conglomerate can create value through enhanced capital allocation. There is insufficient conclusive empirical evidence to support the increased market power hypothesis. The efficient internal capital market hypothesis may offer a better explanation of value creation in conglomerates, as the conglomerate has better information regarding its subsidiaries, and may have a longer-term view and thus be less averse to taking risks. The hypothesis assumes that managers always act in the best interest of their shareholders. However, based on the agency theory, they may indeed be maximizing private benefits. By diversifying the revenue streams of the conglomerate, the variation in the revenue stream will decrease, which again will decrease the risk of bankruptcy and therefore enable the company to increase leverage to benefit from the tax shield. Alternatively, the company can transfer losses from one company to another profit-making company to reduce taxes. Furthermore, the strategy perspective argues that by relocating managerial talent within the conglomerate, value can be created. Nevertheless, the aforementioned benefits may be difficult to quantify and thereby test. Although there are many theories supporting value creation in conglomerates, the evidence is mixed. The most prevalent evidence against conglomerates is probably the conglomerate discount. Most of the studies in the US on this subject report discounts. This also holds true for several other countries. Furthermore, from an organizational and managerial perspective, we find that major costs will reduce the value in conglomerates; t such costs being managerial entrenchment and costs related to integration, influence and coordination.

The discussion about diversifying versus focused acquisitions is ultimately a question of which synergies weigh the most. Previous research has found that diversifying transactions lead to negative market reactions and deteriorating operating performance for the Swedish market, for the European market as a whole and for the US. Focused acquisitions may increase operational synergies, expand market shares and enhance the focus on core business, whereas diversifying acquisitions can benefit from a more efficient internal capital market and potentially a more efficient use of talent. Because there is limited empirical evidence of an improved internal capital market and because of the well-known "conglomerate discount," we expect greater synergies from focused acquisitions.

Specifically, following several findings, see e.g. Delcoure & Hunsader (2006); Doukas et al., (2001); Goergen & Renneboog (2004); Healy et al. (1992); Martynova & Renneboog (2006), we investigate whether diversifying acquisitions are value deteriorating. The majority of these articles found a negative effect of acquiring non-core companies.

This suggests that core acquisitions increase the focus on core operations, while diversifying acquisitions fail to capitalize on the proposed synergies and may be driven by self-interested intentions, such as empire building. Our hypothesis is therefore:

Hypothesis 4.1. Focused acquisitions cause higher bidder returns than diversifying acquisitions.

In the next hypothesis, we study the difference on a target's cumulative abnormal return when being acquired by a company of either the same or an unrelated industry. Following the logic from the previous hypothesis, and from research on this specific topic, we hypothesize that targets should gain the most when being acquired by a related acquirer. The intuition is that a bidder believes higher synergies can be created from a core acquisition. This, in turn, should result in a higher premium paid for the target, which leads to the following hypothesis:

Hypothesis 4.2. Focused acquisitions cause higher target returns than diversifying acquisitions.

3.5 Cross-border transactions

The next two hypotheses are based on foreign direct investment theory and findings from M&A literature. Zenner and Hazelkorn (2004) found that cross-border acquisitions enhance abnormal return in the US, while Eckbo and Thorburn (2000) found that foreign acquisitions have abnormal returns insignificantly different from zero in Canada, whereas domestic acquisitions resulted in positive abnormal returns. Martynova and Renneboog (2006) have also presented evidence suggesting that on average cross-border mergers and acquisitions yield a significantly lower abnormal return compared to domestic transactions. Research in relation to European acquisitions varies, previous research in this field being inconclusive.

The Nordic countries differ slightly. While Denmark, Finland, and Sweden are members of the European Union (EU), Norway and Iceland are part of the EU economic EEA agreement. Finland has adopted the currency of the EU; the other Nordic countries still use their local currencies. However, the similarities will not give rise to any locational advantages, such as access to cheaper labor or production facilities. Furthermore, there are clear differences amongst the Nordic countries, most prevalent among them their languages, cultures and traditions. This can complicate the integration process after transactions and may hinder knowledge transfer, thereby ultimately decreasing synergies.

Economic theory presents a strong motive for making foreign direct investment; see e.g. Goergen and Rennebog (2004). The bidding firm is entering a new market with potentially new customers, larger potential revenue and profit pool, and a higher degree of diversification to country-specific risks. Renneborg argues that the ability to increase or protect market share, increase geographical presence, acquire new products or services and scale economies are benefits of FDI. On the one hand, the ability to optimize tax systems and exploit favorable exchange rate movements by moving operations into other countries or by acquiring foreign firms may favor cross border transactions.

On the other hand, by acquiring a company in another geographical area, the bidding firm exposes itself to another legal system including different taxation and accounting principles, differences in political and economic environments and a new market for the domestic investors to analyze.

We believe that barriers related to integration will outweigh the potential benefits, leading us to hypothesis 5.1.:

Hypothesis 5.1. Bidder returns are lower in cross-border acquisitions.

Due to lack of conclusive evidence regarding the target's price reaction to foreign versus domestic acquisition plans, and because we expect cross-border acquisitions to affect bidder's abnormal returns negatively, we have similar expectations in respect of the target's abnormal returns. Goergen and Renneboog (2004) found that premiums are higher for domestic than for foreign acquisitions. We believe that the market anticipates integration issues to arise in cross-border deals and therefore state hypothesis 5.2:

Hypothesis 5.2. Target returns are lower in cross-border acquisitions.

3.6 Value vs. growth

In behavioral finance, the performance of value and growth companies has been extensively investigated. Fama & French (1992) pioneered the studies when they empirically tested the renowned CAPM model and found evidence of a more comprehensive model in explaining expected return. Furthermore, they found that value stocks, characterized by low earnings potential, outperform growth stocks that are characterized by high earnings potential. Companies assumed to grow rapidly in the future—so-called growth companies—can be seen as better investment alternatives compared with companies that are presumed to have reached a level of steady state: referred to as value companies. Companies with potential future growth are known for their high price-to-book ratio and for reinvesting free cash flows instead of paying out dividends.

On the contrary, value companies are defined to have low market-to-book ratios, and pay out large dividends rather than reinvesting in new projects. An important implication is the fact that growth companies have several positive NPV projects available and value companies have few.

Despite the logic that the acquisition of growth firms creates higher abnormal return for bidders, Rau & Vermaelen (1998) showed that acquisitions of firms with low market-to-book ratios generate a high abnormal return of 12% for bidding shareholders. They also found that firms with high market-to-book ratio generate substantial negative abnormal return for bidders. Goergen and Renneboog (2004) supported this research by finding that a high market-to-book ratio for targets leads to a negative abnormal return for the bidding firms. Lastly, Zenner and Hazelkorn (2004) provided evidence suggesting that bidder returns were higher when the target had low projected earnings growth rates. Zenner and Hazelkorn (2004) stated that there are several reasons why it proves beneficial to acquire value companies rather than growth companies. Value companies are in mature industries, so synergy effects can be easier to collect than for growth companies.

Acquisitions are often the only way mature companies can create growth, as they find it hard to grow organically with few positive NPV projects available. A third reason is the perception that companies tend to overpay for the growth availability and that markets therefore react negatively upon announcement of an acquisition. Despite the logic that the acquisition of growth firms creates higher abnormal return for the bidders, Rau and Vermaelen (1998), Goergen and Renneboog (2004), and Zenner and Hazelkorn (2004) showed that acquisitions of value firms yield the highest abnormal returns for the bidding firms. When buying growth options, in this case in terms of growth firms, the probability of overpayment may be high.

Georgen and Renneboog (2004) argue that the market is anxious that acquirers do in fact overpay for such growth options. Thus, based on the result of the previous research, we form hypothesis 6.1:

Hypothesis 6.1. Target's valuation negatively affects bidder's abnormal return.

4 DATA AND METHODOLOGY

4.1 Data selection

The relevant data is gathered from Denmark, Sweden, Norway, Iceland and Finland. We use the database Zephyr as it is a comprehensive database that specializes in providing market information about M&A deals. First, we apply five criteria affecting what data to collect from the chosen database in order to obtain a gross sample. Secondly, we apply five additional criteria that are important for the methodology. The following are the criteria of selection process 1:

1) Both bidder and target have to be publicly listed
2) Both bidder and target have to be listed on one of the Nordic stock exchanges
3) The deal has to be completed
4) The deal must have been announced between 1 January 1995 and 31 December2014
5) The transaction has to be classified as either a merger or an acquisition

Both the bidder and the target have to be listed on one of the Nordic stock exchanges, ensuring that the sample include only Nordic companies. The focus on Nordic countries is motivated by similarities in corporate governance systems, culture, geography and the importance of cross-border trade within this region. La Porta et al. (1998) find that the Nordic countries share similar legal systems, a fact that simplifies the comparison of corporate actions.

We chose a 20-year time-span to ensure sufficient data as well as the possibility to cover both economic cycles and merger waves. After applying these criteria, we collected a gross sample of 258 completed deals. Additional criteria were required because Zephyr's search filter could not be customized to match our methodology and requirements. Thus, we had to filter and sort the data manually. The additional criteria are as follows:

6) The acquisition had to result in the bidding firm owning a majority share of the target
7) Stock prices had to be available for ~200 days prior to the announcement and at least ~10 days after the announcement
8) The stock price had to be traded at least 2/3 of the days in the ~200 days period prior to announcement, i.e. in the estimation window
9) Sufficient financial data prior to announcement had to be available
10) Internal transactions were omitted from the sample

We set the majority stockholding criteria to discriminate between investments in minority stockholdings from corporate control. We presuppose that the above 50% stockholding is a viable proxy for full control of the company. In order to include the deal, the initial stockholding could not surpass 49.9% and the final stockholding had to exceed 50%. Thus, we choose not to look at dual class shares. As we are looking at the market reaction in our event study, we assume that the market reacts equally when an investor acquires a majority set of A, B or both shares, and we therefore emphasize that not accounting for dual class share will not affect our data.

Moreover, thin trading occurs if the stocks in the sample are traded infrequently so that the relative return approaches zero. These illiquid stocks belong to small and more risky companies. The problem with thin trading is that one will observe less risk in these illiquid and small stocks as their covariance with the market return is very low. Consequently, their beta will be close to zero indicating low risk, when it might be the opposite. An inaccurately low beta value will cause expected return to be lower and thereby provide an incorrectly high abnormal return. There are different ways of adjusting for this. Scholes & Williams (1977), and later Dimson (1979), obtain an unbiased beta estimate by calculating a new type of beta through running OLS beta estimates for securities more thinly traded than the market index. The model accounts for nonsynchronous trading. Later, Cowan & Sergeant (1996) found that the previously found correction for nonsynchronous trading provides no significant benefit in coping with the problems caused by thin trading. In fact, Cowan and Sergeant stated that the correction might actually make the calculations worse. To adjust for thin trading, we have excluded companies that are not traded in more than 1/3 of the estimation period, i.e. we have excluded companies without any movement in their stock price in more than 2/3 of the estimation period. This is to reduce the effect of companies with inaccurately low beta values. A few observations were omitted as they were internal transactions.

The financial data is gathered from Bloomberg Data Services and complemented using Orbis Financial Databank. Daily stock prices excluding non-trading days were gathered for up to 200 days prior to the announcement date and at least 10 trading days after the announcement.

We have looked at stock prices, not the total return index. Using the total return index would enable us to account for dividends and stock splits, etc. However, our choice of using stock prices is based on two things. First, stock prices are used by MacKinlay (1997). Secondly, the use of stock prices makes interpretation simple and easy. Data from financial statements was gathered from year-end prior to the announcement date, while market data was gathered using stock prices on the last day of the estimation window. Thus, multiples such as price-to-book ratio for any given company would be calculated using adjusted closing price 11 days prior to announcement and book value per share at 31 December the year prior to the event. We have applied different lengths of event windows, but for reasons of simplicity, the market data has been gathered the day before the longest event window starts, i.e. 11 days prior to announcement. The logic is to use data unaffected by the event, which is assumed to be unbiased with regard to the announced transaction. This is also in line with prior research of the short-term effects of M&A announcements, see also Servaes, (1991).

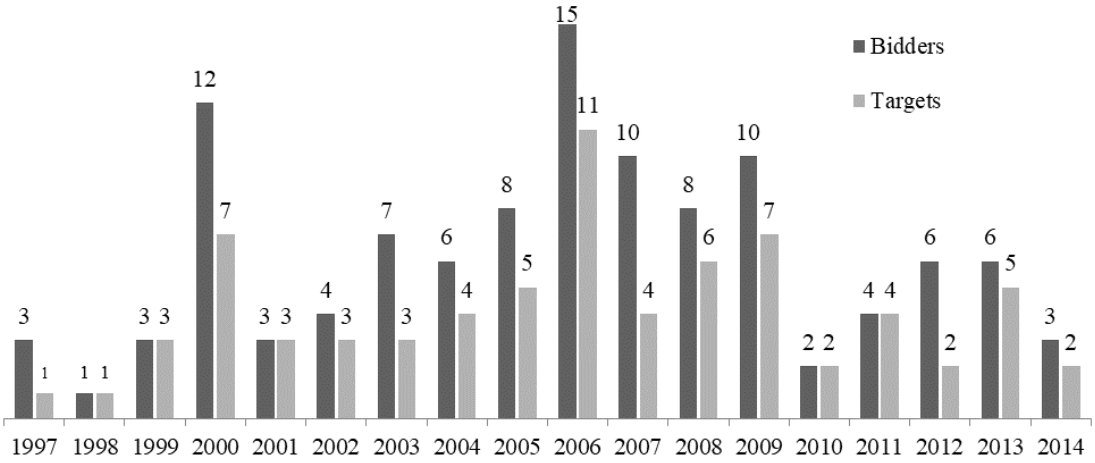
The final sample consists of a total of 184 M&A announcements, also termed "events", where 111 are for bidding firms and 73 are for target firms. The total number of matching deals, i.e. we have the required data for both the bidder and the target is 68.

4.2 Descriptive statistics

The data in figure 1 represents our final sample of events. The data in our sample appears to have characteristics of waves. However, the waves are not as clear as found in previous research.

The figure reports the distribution of the two samples that consist of 111 bidder and 73 target events. The event is defined as the announcement date of a transaction. The number of bidder and target events does not match as these have been through the selection process, which is discussed in part 4.1.

Figure 1: Total deal count distribution

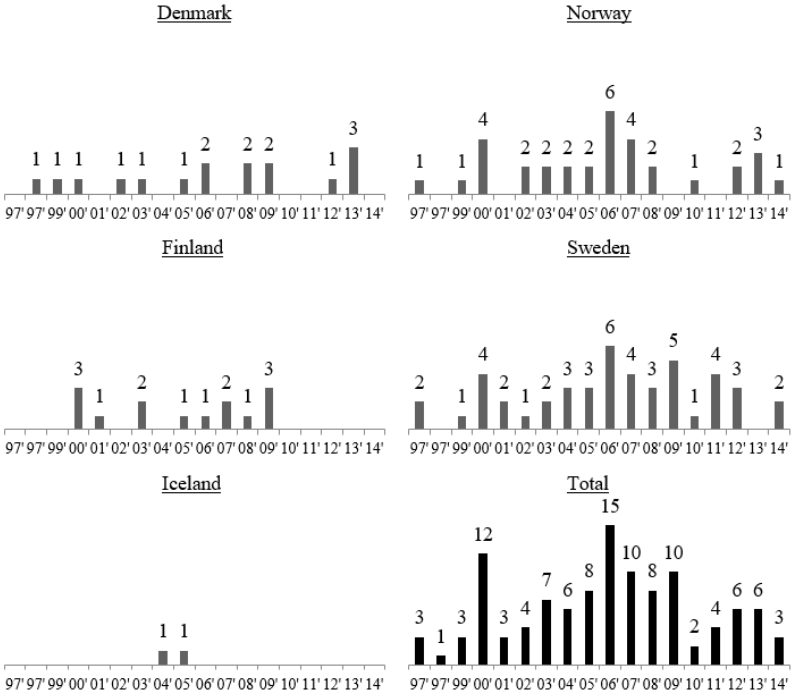


Source: Zephyr data, various articles and press releases

Figure 2 shows how the bidding deals are distributed geographically and across time. Sweden represents the lion share of M&A activity by deal count, as it represents approximately 40% of the bidding companies in our sample.

The charts present the distribution of 111 bidder events, the bidder being publicly listed on one of the Nordic stock exchanges. The figure is divided per country and in total, recorded in the period from 01.01.95 to 31.12.14. The vertical axes represent deal count.

Figure 2: Countrywide bidding deal count distribution - Final deals



Source: Zephyr data, various articles and press releases

This is natural as the Swedish economy is larger than the other Nordic economies. This finding matches that of the MergerMarket 2014 Trend Report which shows Sweden with consistently more deals than its peer countries from 2007 to2014.

The table presents various deal characteristics for the bidding firm for the sample of 111 transactions. Acquisitions are characterized as diversifying, if the two-digit SIC code does not match, in line with prior research.

Table 1: Deal characteristics

	Sweden	Norway	Denmark	Finland	Iceland	Total
Cash	20	22	5	3		**50**
Mixed	10	4	4	4	1	**23**
Stock	14	6	7	7		**34**
Unknown	2	1			1	**4**
Total	**46**	**33**	**16**	**14**	**2**	**111**
Cross-border	14	10	1	7		**32**
Domestic	32	23	15	7	2	**79**
Total	**46**	**33**	**16**	**14**	**2**	**111**
Focused acquisitions	26	18	11	9	2	**66**
Diversifying acquisitions	20	15	5	5		**45**
Total	**46**	**33**	**16**	**14**	**2**	**111**
Financial institutions	9	7	7	3		**26**
Manufacturing	13	5	7	5		**30**
Mineral-and Construction Industries	2	6	1			**9**
Wholesale- and Retail Trade	3	4	1			**8**
Service industries	13	3		4		**20**
Transportation, Communication and Utilities	6	5		2		**13**
Agriculture, Forestry and Fisheries		3			2	**5**
Total	**46**	**33**	**16**	**14**	**2**	**111**

Source: Zephyr, annual reports, various news articles and press releases

From the data given in Table 1 showing deal characteristics, we see that 45% of the deals are financed purely by cash, followed by 31% pure stock deals, the remaining deals being financed by a combination of stocks and cash (21%), or unknown (3%).

In broad terms, this pattern is similar to what Goergen & Renneboog (2004) find in their data covering domestic and cross-border transactions in Europe, and similar to what Ghosh (2001) finds using US data from 1981 to 1995. 71% of the deals in our sample are domestic acquisitions while 29% of the transactions are cross-border transactions in the Nordic countries.

We have characterized an acquisition as diversified, if the two-digit SIC code[1] of the bidder and the target does not match. In our opinion, the matching of firms based on one-digit is too inaccurate, since it implicitly assumes that there are only 10 industries in the economy. Two-digit classification is used in prior research (Alexandridis et al., 2011; Doukas et al., 2001; Ghosh, 2001) when classifying general economic characteristics. Furthermore, Clarke (1989) finds that using three- or four-digit SIC codes will not significantly improve similarity among companies. By using this approach, 59% of the deals in the final sample are transactions where both the bidder and the target operate in the same two-digit industry, while 41% of the deals were across industries.

Finally, we include an overview of deals in the different industries. The largest industry is manufacturing, representing 27% of our final sample of bidding firms. Service industries, transportation, communication and utilities represent 18% and 12%, respectively. We note that financial institutions represent 23% of the deals in our sample, a relatively large share from one sector. In their research on M&As in 40 European cross-border bank transactions during the period from 1998 to 2009, Drymbetas & Kyriazopoulos (2014) report that the Nordic countries account for 23% of the total deal count in Europe. In other words, it seems that financial institutions in the Nordic region have actively been pursuing acquisitions. Our data supports this observation.

We conclude the descriptive statistics part by presenting the summary statistics of our independent variables from the cross-sectional regressions and the average firm characteristics shown in table 2.

The table displays the average financial characteristics of bidders and targets. These characteristics are important for an in-depth regression analysis of value drivers. It is important to notice that the number of observations varies across the different variables. This is due to lack of information. Furthermore, financial institutions are excluded because these are not part of the cross-sectional regression analysis. Market capitalization, total assets and revenues are given in mEUR. The definition and calculations of Tobin's Q, price to book, cash flow/assets and CFO/assets are explained in the empirical part.

Table 2: Financial characteristics

	Bidder				Target			
	n	Mean	Median	St. dev	n	Mean	Median	St. dev
Total assets	85	2 966	504	6 138	51	614	214	1 383
Market cap	84	4 173	411	12 777	54	310	91	824
Revenue	85	2 386	431	6 201	52	399	113	626
Tobin's Q	81	1.80	1.44	1.03	47	1.73	1.40	1.12
Price to book	78	2.69	2.01	2.07	48	2.67	1.84	2.82
Cash flow/assets	85	0.05	0.06	0.55	35	0.03	0.05	0.08
CFO/Assets	85	0.12	0.08	0.53	49	0.07	0.06	0.13
Beta	85	0.69	0.66	0.46	55	0.51	0.48	0.42

Source: Bloomberg, Orbis and annual reports

On average, it is evident from table 2 that bidders are larger than targets on all three measures of size – total assets, market capitalization and revenues. This was expected and intuitively makes sense. Note that there are large differences within the sample in terms of size. For the sample of bidding firms, mean is much greater than the median, which indicates outliers. This is also evident from high standard deviations.

In comparing Tobin's Q and price to book, it seems that there is no large discrepancy in valuation. Both measures are relatively close when calculating both mean and median. There are minor differences in cash flow to assets and CFO to assets, in addition to beta values.

[1] *SIC is an abbreviation of "Same Industry Code", and explains, with different levels of complexity, which industry a firm mainly operates in.*

4.3 Methodology

First, we estimate the abnormal return of each firm and accumulate these in order to calculate the abnormal returns. Secondly, we run several regressions using independent variables on the cumulative abnormal return found in the event study. In order to measure an effect, we choose to use the reaction in stock price for each firm on the days surrounding an event and throughout this analysis we will base our event study on the popular framework of MacKinlay (1997), see also Bowman (1983) and Henderson (1990). We will also use the methodology and terminology of MacKinlay (1997), so it will not be explained in the following.

The estimation period in our analysis is nine months before the event. The lengths of estimation periods are normally set between 200 and 250 trading days, equaling between nine and 12 months of *traded* stock price data, see Bartholdy, Olson & Peare (2007) and Goergen & Renneboog, (2004).

We also test which event window that is the most relevant for the analysis by comparing the results from different windows. We test the abnormal return in the period ±10 days, ±5 days, ± 3 days and ± 1 day symmetrically surrounding the event. In order to estimate the expected abnormal return we rely on the market model which is used frequently, see Dyckman, Philbrick, & Stephan, 1984. It is applied in several event study research papers such as Bartholdy et al. (2007), Brown & Warner (1985), and Goergen & Renneboog (2004).

5 RESULTS

5.1 Value creation

Table 3 shows that the abnormal return is small, negative and insignificant for the 21-day event window. When the event window is narrowed down to 5 days before and after the announcement, the abnormal return becomes slightly positive, but still insignificant on all relevant significance levels. When we narrow the window further down to two days before and after the announcement, the abnormal return increases, but remain insignificant. For the event window one day before and after the announcement, the CAAR is 0.98%, and the result is significant on a 10% level. This indicates that there are abnormal returns for bidding firms in our sample only when the window is very short.

This table reports the results from the parametric t-test for cumulative average abnormal return of bidding firms. The dependent variable is ±10, ±5, ±2 and ± 1 days, respectively, surrounding the announcement day of the merger or acquisition.

Table 3: Parametric test for cumulative average abnormal return of bidding firms

	-10,10	-5,5	-2,2	-1,1
CAAR	-1,26%	0,58%	0,85%	0,98%
σ^2	1,35%	0,98%	0,66%	0,51%
t-stat	-0,93	0,59	1,29	1,92*
p-value	35,47%	55,33%	20,09%	5,69%
N	108	110	111	111

*Note: *, **, *** indicate significance level of 10%, 5% and 1%, respectively*

Source: own calculations

Figure 3: Average abnormal returns for bidding firms

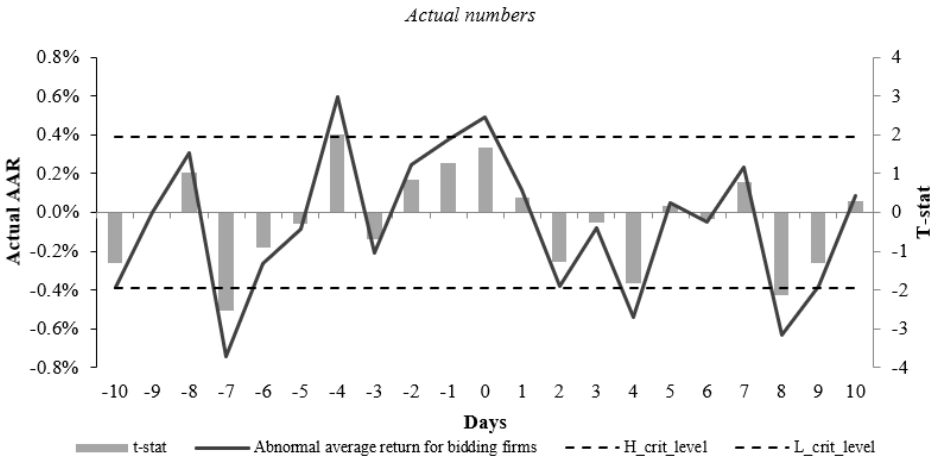


Figure 3 shows the average abnormal returns graphed along with t-stats for each observation and significance bands at 5% level. The figure is included to give a graphical presentation in order to better grasp the development of stock returns in the event window.

Our results from the Nordic countries are in line with prior research which also struggled to find significant abnormal returns for the shareholders of the bidding firms. Based on these results, we fail to reject the first 1.1 hypothesis, which means that the acquirer's shareholders experience insignificant gains when mergers or acquisitions are announced. There are positive abnormal returns around the announcement of an M&A transaction, but the reaction is fairly small and only significant at a 10% level. This is in line with the research of Bradley, Desai, & Kim (1988) and Goergen & Renneboog (2004).

By purchasing a majority stake and paying a market premium, the stock price of the target firm will naturally be pushed up, and one can therefore assume that there will be a short-term positive effect on the stock price. Previous research is unanimous in their study of target stock price effect. Franks, Harris, & Mayer (1988) and Mulherin & Boone (2000) found evidence of an average abnormal return of 23.3% and 20.2% when investigating UK and US acquirers, respectively. In more recent studies, Goergen & Renneboog (2004) found a 9% average abnormal return. All abnormal returns found in previous studies have been proven statistically significant, and this influences our second hypothesis:

The test on cumulative average abnormal return for target firms, summarized in table 4, we can see that the CAAR is large and positive, and highly significant for all the event windows. Our findings are overall very similar to the findings in previous research in other geographical areas and time periods.

This table reports the results from the parametric test for CAAR event study. The dependent variable is ±10, ±5, ±2 and ± 1 days, respectively, surrounding the announcement day of the merger or acquisition.

Table 4: Parametric test for cumulative average abnormal return of target firms

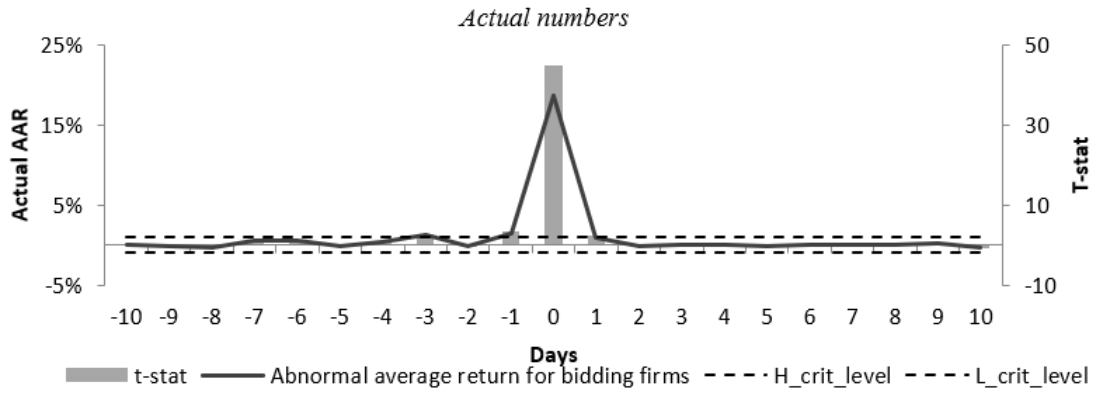
	-10,10	-5,5	-2,2	-1,1
CAAR	22,96%	22,06%	20,77%	21,01%
σ^2	1,91%	1,38%	0,93%	0,72%
t-stat	12,03***	15,97***	22,30***	29,13***
p-value	0,00%	0,00%	0,00%	0,00%
N	71	73	73	74

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Authors' own calculations

When interpreting the results in table 4, we see that the CAARs are relatively stable around ~21-23% in the various event windows. It is interesting to see if there are specific days when the average abnormal return is especially large and significant; the rationale being that the return on the announcement day is large enough to influence the longer event windows and make them statistically significant.

Figure 4: Average abnormal returns for target firms



We provide the average abnormal returns for target firms in figure 4 in order to better visualize the data from table 4. As for bidding firms, we see that the significance of the observation is correlated with the extremeness of the observation, due to the fact that the standard deviation is the same across days, and the t-stat is a result of the observation and the standard deviation. As expected, the abnormal return on the announcement day is high and significant. Because of its large value, it may distort the price movements in the other 20 days of the event window, but, as seen from table 6.6, there are only small and insignificant abnormal returns in such period. The exceptions are the two observations on day -3 and -1, which we discussed above. One striking difference between the AARs in figure 6.3 and 6.1 is that the price movements of target firms are relatively flat except for the announcement day. This may reflect the degree of complexity in the valuation of synergies. Put differently, the lion share of the abnormal return of the target shareholders is the premium offered by the acquirer, which should be relatively straightforward to incorporate in the stock price of targets upon announcement. For bidding firms, however, the valuation of synergies arising from the merger is more complex and thus more difficult to calculate. Our findings in the test of target firms are highly consistent with previous research, and we therefore cannot reject the given hypothesis.

Thus, our findings are similar to Franks et al. (1988), Mulherin & Boone (2000), Goergen & Renneboog (2004), but the degree of market efficiency surprises us as it seems that most of the information is priced into the stock immediately after the transaction is announced.

5.2 Means of payment

To test this hypothesis we calculate the mean difference in CAR for pure cash, pure stock and mixed offers. To increase the robustness of our regressions, we use the CARs for both the 3-day and 11day windows. We include dummy variables for each payment type, using mixed offer as the benchmark in the regression. We hypothesize that the dummy coefficient for cash is significantly higher than the dummy coefficient for the two other variables, which implies a positive market reaction when offers contain cash only. We run the regression using control variables found to be influential in previous and similar studies. To control for differences in size we include the natural logarithm of market capitalization in million Euros.

As an acquisition might alter the capital structure of a company, we believe that the leverage ratio might be an important contributor to the announcement effect, in line with Lang et al. (1991) and Drymbetas & Kyriazopoulos (2014). Thus, we include the debt-equity ratio in the year prior to the deal. To account for different risk profiles, we include the company's beta value (Drymbetas & Kyriazopoulos, 2014). Finally, we include industry dummies to control for differences in returns in the various industries from which we retrieve our data. We use the one-digit SIC codes to classify the industries. The regression results are reported in the table below.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each bidder company using either a 3-day or an 11-day event window. Cash bid (stock bid) equals one if the payment was cash (stock), and zero if otherwise. The benchmark is mixed payment, equal to one if the payment was a mixture of stock and cash, and zero otherwise. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 5: Regression results for hypothesis 2.1

	CAR [-1, 1]		CAR [-5, 5]	
Variables	Coefficient	T-stat	Coefficient	T-stat
Intercept	0.039	1.11	0.029	0.54
Cash bid	-0.011	-0.59	-0.028	-1.18
Stock bid	-0.017	-0.55	-0.012	-0.35
Control variables				
Log(Mcap)	-0.007	-1.60	-0.005	-0.84
Debt/equity	0.0013	0.22	0.028	0.43
Beta	0.024	1.05	0.016	0.62
Agric., Forestry and Fish.	-0.053	-2.04**	-0.078	-1.42
Manufacturing	-0.001	-0.05	-0.001	-0.03
Transp., Comm. and Util.	0.008	0.46	0.030	0.92
Wholesale- and Retail	0.008	0.47	-0.017	-0.61
Service industries	0.021	0.79	-0.013	-0.35
Adjusted R-squared	0.010		-0.019	
No. of observations	83		83	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

From table 5, we see that both cash and stock bids have lower mean returns than the benchmark, which is mixed payment. Cash offers yielded higher returns than pure stock offers, even if the results were insignificant. However, with the CAR from the 11-day event window, the findings are different. In this case, cash offers yield the lowest returns, with a 1.6% difference from all-stock offers. The mean differences are not significant in this regression either. If we place more reliability on the first regression with the lowest event window containing less noise, our findings are consistent with previous findings in that pure-stock offers yield the lowest return. Neither of the coefficients is significant, which would indicate that the means/method? of payment does not necessarily affect the announcement effect of bidders in the Nordic countries. This could stem from the Nordic market being highly efficient, in which misevaluations are already accounted for. This seems to be an unlikely characteristic of the Nordic market, considering that the US and the UK stock markets are more developed and liquid and still experience different announcement effects due to payment method (see e.g. Servaes, 1991 or Goergen and Renneboog, 2004). Another possible reason is that the signaling effect is weak in the Nordic countries. This could also explain why the financing of deals seems irrelevant to the creation of wealth. Thus, we reject our hypothesis 2.1 that cash offers yield higher returns than stock or mixed offers. The implication of this is that bidders may have more flexibility with regard to the financing of deals in the Nordic countries, because the acquirer's managers do not have to take into account any negative market reactions with regard to the payment method.

Tobin's Q is often used to assess whether the market value of assets is higher than its book value, which would imply overvaluation. To classify as highly valued companies, we set the threshold as the median of the sample. Using the median of the sample reduces the effect of outliers compared to using the mean observation. However, this classification method can give rise to selection bias, if overvalued companies are the ones making acquisitions. In that case, the selection of companies in itself will be biased by high valuation.

Comparing the median of Tobin's Q for bidders and targets suggests that selection bias is not a major problem. The median Tobin's Q of bidders is 1.44 and for targets 1.40 (see table 2). Moreover, this classification method has been utilized in other research, see Delcoure and Hunsander (2006). Tobin's Q is calculated as the book value of total assets less the book value of equity plus the market value of equity divided by total assets, see Schlingemann, Stulz, & Walkling, (2002). We run two different regressions using 3-day and 11-day event window CARs and use two different sets of independent variables testing the same relation to increase robustness.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each bidder company using either a 3-day or an 11-day event window. Cash bid (stock bid) equals one, if the payment was cash (stock), and zero if otherwise. The benchmark is mixed payment, equal to one if the payment was a mixture of stock and cash, and zero otherwise. High valuation is a dummy equal to one, if the observation has Tobin's Q higher than the median of the sample, zero if otherwise. Tobin's Q is calculated as the book value of total assets less the book value of equity plus the market value of equity divided by total assets (Schlingermann et al., 2002). Interaction variables between Cash (Stock) payment and Tobin's Q are also included. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window

of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 6: Regression results from hypothesis 2.2

	(1)				(2)			
	CAR [-1, 1]		CAR [-5, 5]		CAR [-1, 1]		CAR [-5, 5]	
Variables	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
Intercept	0.048	1.27	0.023	0.44	0.085	1.63	0.071	1.08
Cash bid	-0.011	-0.54	-0.033	-1.34	-0.037	-1.13	-0.068	-1.82*
Stock bid	-0.014	-0.44	-0.012	-0.35	-0.033	-0.85	-0.023	-0.62
High valuation	-0.007	-0.57	0.019	1.17				
Tobin's Q					-0.018	-2.13**	-0.010	-1.02
Cash bid*Tobin's Q					0.013	0.99	0.020	1.35
Stock bid*Tobin's Q					0.012	0.76	0.009	0.69
Control variables								
Log(Mcap)	-0.008	-1.75*	-0.008	-1.38	-0.008	-1.74	-0.008	-1.31
Debt/equity	0.001	0.01	0.043	0.67	-0.015	-0.24	0.010	0.15
Beta	0.034	1.47	0.032	1.17	0.032	1.41	0.031	1.18
Agric., Forestry and Fish.	-0.066	-2.24**	-0.085	-1.40	-0.067	-2.40**	-0.096	-1.56
Manufacturing	0.001	0.07	0.003	0.13	0.002	0.12	0.002	0.06
Transp., Comm. and Util.	0.008	0.46	0.030	0.92	0.005	0.28	0.026	0.78
Wholesale- and Retail	0.002	0.09	-0.004	-0.13	-0.002	-0.10	-0.011	-0.42
Service industries	0.013	0.49	-0.029	-0.81	0.011	0.29	-0.033	-0.91
Adjusted R-squared	-0.011		-0.005		-0.022		-0.039	
No. of observations	76		76		76		76	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

In the first regression, the benchmark is a mixed bid from a low-valued company. The results are consistent with our hypothesis. However, the mean differences are not statistically significant making a conclusion based on the results difficult. Furthermore, with the 11-day event window, we get a different picture. In this regression, cash bids have the lowest mean return and stock bids from high-valued companies have the second highest mean return. The results from the second regression therefore contradict our expectations. Again, it seems that the payment method is irrelevant to the price reaction upon an announcement.

The third and fourth regressions are included to get a better understanding of the effects of the method of payment combined with valuation. When we include the continuous variable of Tobin's Q rather than a dummy variable for high valuation, we find that Tobin's Q negatively affects the CAR for stock and mixed bids, an effect that is statistically significant at a 5% level. Thus, the higher the valuation of a company paying with either stock or mixed payments, the lower the announcement returns.

The payment method does seem to affect the CAR in combination with valuation. If our results are representative for the Nordic market, then this is evidence of signaling effects.

The results from the four regressions presented above yield a mixed picture of the effect of payment method in combination with valuation. Using dummy variables for high and low valuation, we found neither consistent evidence in the two event windows, nor significant evidence to support our hypothesis that stock offers from high-valued companies suffer the most in terms of announcement returns. However, with the interaction of the payment method and Tobin's Q, we were able to analyze how increasing Tobin's Q prior to announcement affected the returns depending on the various payment methods.

Hypothesis 2.3 in table 7 focuses on abnormal target returns. In order to test the validity of this hypothesis, we calculate the mean difference by regressing the dummy variables that represent the payment method on the CAR of bidders. As in hypothesis 2.1, we include dummy variables for cash and stock bids, implying that the benchmark regression is the mean return of mixed payment. For regressions on target CAR, we also include the same relevant control variables. No target companies were represented in the industry Agriculture, Forestry, and Fisheries, and this industry has therefore been omitted as a control variable.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each target company using either a 3-day or an 11- day event window. Cash bid (stock bid) equals one if the payment was cash (stock), and zero if otherwise. The benchmark is mixed payment, equal to

one if the payment was a mixture of stock and cash, and zero otherwise. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 7: Regression results from hypothesis 2.3

	CAR [-1, 1]		CAR [-5, 5]	
Variables	Coefficient	T-stat	Coefficient	T-stat
Intercept	0.356	2.12**	0.354	1.58
Cash bid	-0.057	-1.02	-0.042	-0.67
Stock bid	-0.090	-1.33	-0.104	-1.21
Control variables				
Log(Mcap)	-0.010	-0.50	-0.005	-0.18
Debt/equity	-0.235	-1.57	-0.378	-1.87*
Beta	-0.086	-1.31	-0.110	-1.45
Manufacturing	0.140	1.15	0.239	1.49
Transp., Comm. and Util.	0.143	1.03	0.027	1.36
Wholesale- and Retail	-0.028	-0.02	0.059	0.36
Service industries	0.032	0.23	0.103	0.57
Adjusted R-squared	0.010		0.115	
No. of observations	47		47	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

It is evident that stock bids have the lowest mean return. The regressions with 3-day and 11-day event windows, respectively, show that on average mixed offers yield the highest return and stock offers the lowest return. However, the main differences observed in the table above may not be significantly different from zero. From a practical point-of-view with imperfect capital markets, this makes economic sense.

As discussed previously, the valuation risk and the reliability of synergies in the merged company should play a role in case of stock-based payment. Unless paying cash for a company is an impossible option, a stock-based payment should send signals to the market. This could either be overvaluation of the acquirer's stock or uncertainty about synergies from the merged company and thereby the success of the deal. Obviously, the upside potential of the deal follows in a stock deal. However, these benefits will most likely be capitalized long into the future, and this decreases the present value of the potential upside. With a cash payment, the upside is non-existent along with the various risks. Based on this, we cannot conclude that target investors' excessive announcement return is sensitive to the method of payment.

5.3 Cash flow

In this part of the empirical investigation, we show the effect of cash flow prior to announcement of both the acquirer and the target. Especially for the acquirer, it seems that prior to an announcement cash flow causes significant price movements. Thus, for the bidding companies, we expect to find a negative relationship between free cash flows and cumulative abnormal returns. We test this by regressing the CAR of the bidding firm on the cash flow from operations as a percentage of total assets. Cash flow is calculated as operating income before depreciation minus interest expense, taxes, preferred dividends and common dividends following Lang, Stulz, & Walkling (1991) and Servaes (1991). We also run the same regression using cash flow from operations divided by total assets as an alternative to the first cash flow measure, also used in previous research (Lang et al., 1991 and Uysal, 2007). The second method is included to increase the robustness of our results. The second method may also be a more practical method of measuring cash flow. Table 8 shows that the coefficient of cash flow/assets is negative in the first regression, with the interpretation that increasing the ratio of cash flow over assets by one unit decreases the CAR by 0.9%. This is in line with our expectations.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each bidder company using either a 3-day or an 11- day event window. Cash flow is calculated as operating income before depreciation minus interest expense, taxes, preferred dividends and common dividends following Lang et. al (1991). Additionally, we test the hypothesis using cash flow from operations (CFO) (Lang et al., 1991). Both cash flow measures are normalized by total assets. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated

using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 8: Regression results from hypothesis 3.1

	(1)				(2)			
	CAR [-1, 1]		CAR [-5, 5]		CAR [-1, 1]		CAR [-5, 5]	
Variables	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
Intercept	0.028	0.71	0.023	0.42	-0.015	-0.35	-0.060	-0.86
Cash flow/assets	-0.009	-0.58	0.013	1.27				
CFO/assets					0.002	0.14	-0.004	-0.32
Control variables								
Log(Mcap)	-0.006	-1.47	-0.007	-1.28	-0.007	-1.85*	-0.005	-0.99
Debt/equity	0.006	0.12	0.022	0.38	0.004	0.07	0.026	0.43
Beta	0.019	0.97	0.012	0.56	0.019	0.92	0.013	0.57
Agric., Forestry and Fish.	-0.051	-1.89*	-0.072	-1.29	0.049	1.85*	0.075	1.33
Manufacturing	-0.001	-0.09	0.006	0.24	0.050	1.92*	0.008	1.50
Transp., Comm. and Util.	0.003	0.19	0.034	1.04	0.054	1.96*	0.107	1.91*
Wholesale- and Retail	0.009	0.59	-0.007	-0.26	0.061	2.26**	0.065	1.27
Service industries	0.020	0.73	0.028	0.08	0.072	2.06**	0.075	1.33
Adjusted R-squared	0.0214		-0.015		0.016		-0.021	
No. of observations	83		83		83		83	

, **, * indicate significance level of 10%, 5% and 1%, respectively*
Source: Bloomberg, Orbis, Zephyr

However, when extending the event window, the effect is the opposite – increasing the same ratio is associated with a 1.3% increase in CAR. Neither result is statistically significant, which makes it difficult to conclude whether increasing cash flow prior to announcement has a negative effect on CAR. The same problem is encountered above in the third and fourth regressions, in which the coefficient on CFO/assets has the opposite signs, and neither is statistically significant different from zero. Prior to the acquisition in itself, it seems that cash flow does not significantly affect the cumulative abnormal return of Nordic bidders upon an announcement. Thus, we reject our hypothesis.

Turning to the second cash flow hypothesis relating high cash flow and low valuation to bidder returns, we test this hypothesis using the two different measurements of cash flow. First, we regress the interaction of high and low Tobin's Q firms with cash flow to test for the relationship with CAR. We measure cash flow as operating income before depreciation minus interest expense, taxes, preferred and common dividends, following Lang et al. (1991) and Servaes (1991). To obtain a comparable measurement, cash flow is normalized by total assets. To test the robustness we include another measurement of cash flow. Following Lang et al. (1991) and Uysal (2007), we use cash flow from operations normalized by total assets. The variable we are interested in is the interaction between a dummy for high and low Q and the measurement of cash flow, the logic being that increasing cash flow prior to the announcement for low-valuation companies should negatively affect CAR. The first regression in table 9 yields results that are in line with our expectations and previous research. The interaction coefficient between low valuation and cash flow/assets is negative and significant.

In the following regressions, the dependent variables are the cumulated abnormal returns (CAR) for each bidder company using either a 3-day or an 11-day event window. Low valuation is a dummy equal to one if the observation has Tobin's Q higher than the median of the sample, zero if otherwise. Tobin's Q is calculated as the book value of total assets less the book value of equity plus the market value of equity divided by total assets (Schlingermann et al., 2002). Cash flow is calculated as operating income before depreciation minus interest expense, taxes, preferred dividends and common dividends following Lang et. al (1991). Additionally, we test the hypothesis using cash flow from operations (CFO) (Lang et. al, 1991). Both cash flow measures are normalized by total assets. We include the interaction between either one of the cash flow variables and the low valuation dummy. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 9: Regression results from hypothesis 3.2

	(1)				(2)			
	CAR [-1, 1]		CAR [-5, 5]		CAR [-1, 1]		CAR [-5, 5]	
Variables	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
Intercept	0.052	1.21	0.018	0.32	0.034	0.87	0.012	0.22
Low valuation	0.014	1.15	-0.018	-1.02	0.014	1.04	-0.021	-1.18
Cash flow/assets	0.032	1.79*	0.002	0.09				
Cash flow/assets*Low val.	-0.066	-3.98***	0.015	0.82				
CFO/assets					0.020	1.56	-0.014	-1.06
CFO/assets*Low val.					-0.056	-2.41**	0.022	0.88
Control variables								
Log (Mcap)	-0.070	-1.66	0.007	-1.30	-0.006	-1.44	-0.006	-1.11
Debt/equity	-0.044	-0.85	0.051	0.83	-0.021	-0.44	0.057	0.93
Beta	0.015	0.75	0.017	0.71	0.013	0.60	0.020	0.77
Agric., Forestry and Fish.	-0.051	-1.83*	-0.065	-1.15	-0.050	-1.81*	-0.067	-1.18
Manufacturing	0.008	0.56	0.003	0.12	0.006	0.47	-0.001	-0.03
Transp., Comm. and Util.	0.009	0.55	0.033	1.00	0.007	0.47	0.031	0.94
Wholesale- and Retail	0.003	0.15	0.004	0.14	0.004	0.26	0.001	0.04
Service industries	0.025	0.84	-0.001	-0.04	0.030	1.05	-0.006	-0.16
Adjusted R-squared	0.055		-0.041		0.022		-0.042	
No. of observations	79		79		79		79	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

When extending the event window to 11 days, the effect of increasing cash flow to assets for low valuation companies is positive but insignificant. Again, we assign more credibility to the shorter event window due to less noise in results. For the third regression, using CFO/assets instead of cash flow/assets, we get a similar effect. The coefficient on the interaction between low valuation and cash flow measure is significantly negative at a 5% level. Again, when extending the event window to 11 days, the effect of increasing cash flow to assets for low valuation companies is positive but insignificant. We complete the investigation of cash flow's effect on cumulative abnormal return by examining its effect on the target companies.

We expect cash flow to be positively related to CAR, with the interpretation that increasing cash flow in the year prior to an announcement will positively affect the abnormal return. The two regressions we run and the results are given below. We get results that are consistent with our hypotheses in table 10 – the sign on both cash flow measurements is positive in all four regressions. When regressing cash flow/assets on the 3-day and 11-day event windows, respectively, the effects of increasing cash flow to assets are associated with an increase in cumulative abnormal returns. However, the effects we estimate are not statistically significant. When regressing CFO/Assets on CAR in the 3-day window, we find a similar but significant result – increasing CFO/assets is associated with a large increase in the target's CAR.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each target company using either a 3-day or an 11-day event window. Cash flow is calculated as operating income before depreciation minus interest expense, taxes, preferred dividends and common dividends following Lang et. al (1991). Additionally, we test the hypothesis using cash flow from operations (CFO) (Lang et. al, 1991). Both cash flow measures are normalized by total assets. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 10: Regression results from hypothesis 3.3

	(1)				(2)			
	CAR [-1, 1]		CAR [-5, 5]		CAR [-1, 1]		CAR [-5, 5]	
Variables	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
Intercept	0.096	0.91	0.004	0.02	0.101	0.79	0.105	0.08
Cash/assets	0.140	0.58	0.245	0.56				
CFO/assets					0.283	1.65*	0.232	1.26
Control variables								
Log(Mcap)	-0.008	-0.34	0.004	0.15	0.000	0.01	0.016	0.68
Debt/equity	-0.242	-1.22	-0.406	-1.84*	-0.115	-0.75	-0.175	-1.08
Beta	-0.062	-0.79	-0.064	-0.72	-0.063	-0.96	-0.086	-1.19
Manufacturing	0.357	3.52***	0.060	2.96***	0.192	2.33**	0.286	2.85***
Transp., Comm. and Util.	0.286	1.86*	0.389	2.22**	0.123	1.00	0.191	1.46
Wholesale- and Retail	0.202	1.89*	0.340	1.81*	0.082	0.97	0.154	1.52
Service industries	0.221	2.47**	0.365	2.00*	0.136	1.40	0.230	1.97*
Adjusted R-squared	0.075		0.211		0.023		0.097	
No. of observations	34		34		48		48	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

Based on the consistency in the four regressions presented above, we conclude that higher cash flow prior to an acquisition announcement will positively affect the *target* shareholders' abnormal return. The implication for target management is important, as knowledge of this aspect may be significant in takeover negotiations with the acquirer. If target management can show a track record of steady and above industry average cash flow, it could increase its bargaining power substantially.

5.4 Diversifying vs. focused M&A

We include a dummy variable equal to one if the acquisition is diversifying and zero otherwise, and regress this variable along with control variables on CAR for 3-day and 11-day event windows. An acquisition is classified as diversifying, if the two-digit SIC code does not match both bidder and target. We expect a negative and significant coefficient for the dummy variable. The regression we run to test hypothesis 4.1 is given below along with the results from the regression analysis in table 11.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each bidder company using either a 3-day or an 11-day event window. Non-core equals one if the acquisition is diversifying, i.e. when the two-digit SIC code of bidder and target does not match, zero if otherwise. The benchmark is core, equal to one if the acquisition was focused, and zero otherwise. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 11: Regression results from hypothesis 4.1

	CAR [-1, 1]		CAR [-5, 5]	
Variables	Coefficient	T-stat	Coefficient	T-stat
Intercept	0.023	0.63	0.002	0.03
Non-core target	0.030	1.84*	0.043	2.25**
Control variables				
Log(Mcap)	-0.006	-1.58	-0.005	-0.96
Debt/equity	-0.010	-0.20	0.004	0.07
Beta	0.013	0.64	0.004	0.19
Agric., Forestry and Fish.	-0.049	-1.63	-0.073	-1.26
Manufacturing	0.006	0.50	0.012	0.56
Transp., Comm. and Util.	0.014	0.83	0.047	1.51
Wholesale- and Retail	0.005	0.35	-0.016	-0.71
Service industries	0.034	1.10	0.011	0.34
Adjusted R-squared	0.064		0.046	
No. of observations	83		83	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

As seen in table 11, the coefficient related to diversifying acquisitions is positive and significant for both regressions, which is the opposite of our expectations and most relevant research on the same topic. This means that the mean return for bidders pursuing diversifying acquisitions is significantly higher than for focused acquisitions. The two figures seem to confirm what the regressions found – in the Nordic countries, diversifying acquisitions yielded higher bidder abnormal returns relative to core acquisitions. As seen in the indexed graph, the volatility around core acquisitions is very small, whereas there is a much larger effect in case of non-core acquisitions.

Our findings differ from previous research as we find significant results indicating that diversifying mergers and acquisitions yield higher return than do core acquisitions. Optimally, we would prefer to distinguish between synergies that arose from each category, in order to conclude *why* diversifying acquisitions have a higher mean cumulative abnormal return in our sample. One possible reasonis that acquirers overpay for targets in their own core industry because they overestimate operational synergies.

An acquisition is classified as diversifying, if the two-digit SIC code does not match both bidder and target. The results of the regression given below are presented in table 12.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for target each company using either a 3-day or an 11-day event window. Non-core equals one if the acquisition is diversifying, i.e. when the two-digit SIC code of bidder and target does not match, zero if otherwise. The benchmark is core, equal to one if the acquisition was focused and zero otherwise. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 12: Regression results from hypothesis 4.2

	CAR [-1, 1]		CAR [-5, 5]	
Variables	Coefficient	T-stat	Coefficient	T-stat
Intercept	0.261	1.89*	0.236	1.26
Non-core bidder	-0.090	-1.68*	-0.078	-1.30
Control variables				
Log(Mcap)	-0.011	-0.59	-0.012	-0.05
Debt/equity	-0.196	-1.28	-0.345	-1.70*
Beta	-0.097	-1.74*	-0.132	-1.93*
Manufacturing	0.235	1.86*	0.336	2.12**
Transp., Comm. and Util.	0.151	1.10	0.280	1.64
Wholesale- and Retail	0.116	0.90	0.186	1.17
Service industries	0.111	0.88	0.195	1.24
Adjusted R-squared	0.074		0.154	
No. of observations	49		49	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

For both windows, the coefficient of the dummy variable is negative, if the transaction was non-core. Furthermore, in the first regression, both the intercept and the coefficient on non-core were significant at a 10% level. Based on the regression results, we conclude that the average target CAR is higher for core acquisitions relative to non-core acquisitions in the Nordic countries. The mean abnormal return for diversifying acquisitions is significantly lower than for focused transactions at a 10% level. The implication of our findings is that on average the target's shareholders will earn a higher abnormal return when being acquired by a company within the same industry.

5.5 Cross-border transactions

We study cross-border and domestic deals to reveal differences in cumulative abnormal return for both the bidders and the targets. We test our hypothesis by regressing a dummy variable equal to one, if the acquisition is cross-border, and expect its coefficient to be negative, indicating that on average cross-border acquisitions yield a lower abnormal return than do domestic transactions.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each bidding company using either a 3-day or an 11-day event window. Cross-border equals one when the countries of bidder and target are different, zero if otherwise. The benchmark is domestic, and zero otherwise. The logarithm of market capitalization is measured in million Euros. The beta

coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 13: Regression results from hypothesis 5.1

	CAR [-1, 1]		CAR [-5, 5]	
Variables	Coefficient	T-stat	Coefficient	T-stat
Intercept	0.026	0.71	0.003	0.05
Cross-border	-0.011	-0.70	-0.022	-1.14
Control variables				
Log(Mcap)	-0.005	-1.25	-0.003	-0.57
Debt/equity	0.007	0.15	0.030	0.52
Beta	0.017	0.87	0.010	0.45
Agric., Forestry and Fish.	-0.051	-1.91*	-0.077	-1.38
Manufacturing	0.002	0.14	0.007	0.26
Transp., Comm. and Util.	0.007	0.40	0.037	1.13
Wholesale- and Retail	0.012	0.82	-0.006	-0.21
Service industries	0.027	0.90	0.009	0.24
Adjusted R-squared	0.020		-0.010	
No. of observations	83		83	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

Neither of the coefficients is statically significant on any acceptable critical level. As we lack significant results, it is difficult to conclude that there are any significant differences. To complete the investigation of cross-border and domestic mergers and acquisitions, we carry out a regression analysis on the target firms' abnormal returns. There have been difficulties finding guidance for the expected effect of being acquired by either a foreign or a domestic firm.

Goergen and Renneboog (2004) found that premiums are higher for domestic than for foreign acquisitions, and Martynova and Renneboog (2006) later supported this by proving that targets in domestic bids earn a somewhat higher abnormal return compared with cross-border bids. In support hereof cross-border transactions present many challenges, especially in terms of the integration of the two companies. The results of the regression analysis are presented in table 14 below.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each target company using either a 3-day or an 11-day event window. Cross-border equals one when the countries of bidder and target are different, zero if otherwise. The benchmark is domestic, and zero otherwise. The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 14: Regression results from hypothesis 5.2

	CAR [-1, 1]		CAR [-5, 5]	
Variables	Coefficient	T-stat	Coefficient	T-stat
Intercept	0.215	1.58	0.186	0.99
Cross-border bidder	0.061	0.94	0.024	0.34
Control variables				
Log(Mcap)	-0.245	-1.67	-0.376	-1.89*
Debt/equity	-0.009	-0.41	0.003	0.13
Beta	-0.093	-1.46	-0.130	1.70*
Manufacturing	0.222	2.31**	0.322	2.40**
Transp., Comm. and Util.	0.189	1.64	0.313	1.98*
Wholesale- and Retail	0.095	1.01	0.168	1.26
Service industries	0.115	1.07	0.202	1.39
Adjusted R-squared	0.046		0.129	
No. of observations	49		49	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

For the shortest event window, we find that cross-border deals have higher announcement returns than domestic deals. For the longer event window, we find the same trend with smaller magnitudes. However, the coefficients for both regressions are /statistically insignificant. Based on the results we must reject our two hypotheses.

5.6 Value vs. growth

We test this hypothesis by regressing the cumulative abnormal return for bidders on two quantitative measures of growth potential, Tobin's Q and price-to-book. Both measures have been explained in detail earlier. From the hypothesis, we expect that on average both of these measures show a significantly negative relation to the CAR of each firm. We test this hypothesis by running two different regressions. First, with the CAR of each firm as the dependent variable we regress the target firm's Tobin's Q level as a continuous variable. Secondly, we run a similar regression, but with the target's P/B rather than its Tobin's Q level.

Table 15 shows the coefficients and the t-stats for the regressed coefficients and control variables estimated by the two regression models. The first regression yields that the size of the target's Tobin's Q has very small and negative effect on the abnormal return of the bidding firm.

In the following regressions, the dependent variables are the cumulative abnormal returns (CAR) for each bidder company using either a 3-day or an 11-day event window. To proxy for growth companies we include either target's Tobin's Q or P/B. Tobin's Q is calculated as the book value of total assets less the book value of equity plus the market value of equity divided by total assets (Schlingemann et al., 2002). The logarithm of market capitalization is measured in million Euros. The beta coefficients are calculated using the market model with an estimation window of 200 days prior to the longest event window, i.e. [-210;-11]. Industry dummies are included using the one-digit SIC code, Mineral and Construction being the benchmark industry. T-statistics are calculated using heteroscedasticity-robust standard errors.

Table 15: Regression results from hypothesis 6.1

	(1)				(2)			
	CAR [-1, 1]		CAR [-5, 5]		CAR [-1, 1]		CAR [-5, 5]	
Variables	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
Intercept	0.028	0.83	-0.018	-0.42	0.036	1.07	-0.001	-0.02
Target Q	-0.002	-0.36	-0.005	-0.58				
Target P/B					0.001	0.30	0.005	1.13
Control variables								
Log(Mcap)	-0.007	-1.63	-0.004	-0.78	-0.010	-2.30**	-0.014	-2.55**
Debt/equity	0.019	0.36	0.033	0.58	0.044	0.75	0.057	0.94
Beta	0.026	1.13	0.015	0.58	0.037	1.66	0.040	1.74*
Agric., Forestry and Fish.	-0.082	2.32**	-0.084	-1.04	-0.099	-2.55**	-0.110	-1.23
Manufacturing	-0.001	-0.08	0.031	1.20	-0.009	-0.45	0.041	1.25
Transp., Comm. and Util.	-0.007	-0.29	0.025	0.86	-0.021	-0.90	0.016	0.45
Wholesale- and Retail	0.019	0.93	0.019	0.64	0.008	0.40	0.017	0.47
Service industries	-0.002	-0.05	0.022	0.45	-0.042	-1.21	-0.038	-0.86
Adjusted R-squared	0.004		-0.0227		0.0245		0.113	
No. of observations	49		49		42		42	

, **, * indicate significance level of 10%, 5% and 1%, respectively*

Source: Bloomberg, Orbis, Zephyr

However, we cannot conclude whether this effect is significantly different from zero. The story is similar for the price-to-book multiple, which differentiates itself from the Tobin's Q by excluding the market and book values of liabilities. The P/B coefficient is positive, yet very small and insignificant with values for the 3-day and 11-day event windows, respectively.

Our research differs from studies such as Rau and Vermaelen (1998), Goergen and Renneboog (2004) and Zenner and Hazelkorn (2004), which all found consistent evidence that the acquisition of value firms creates higher abnormal return for bidders. However, our findings do not contradict previous studies; the issue is lack of statistically significant coefficients. Rau and Vermaelen study the long-term performance of firms, while we study the short-term. Goergen and Renneboog study the 40 countries in the European market. Zenner and Hazelkorn combined long-term and short-term studies. Another explanation may be that our findings are correct, and we cannot state that there is a difference between value and growth firms in terms of performance during an M&A transaction.

Based on the analysis of hypothesis 6, we are able to reject the hypothesis that for bidding companies an acquisition of growth companies yields lower return than value companies. Our findings suggest that whether a target firm is a value or a growth company has no effect on the bidding firm's announcement return.

6. CONCLUSION

We have examined the value creation as well as value drivers in the Nordic countries based on a dataset of publicly traded companies from the Nordic stock exchanges in the period from 1995 to 2014. We have analyzed 111 bidding and 73 target companies' announcement returns.

We find weak evidence of any value creation for the acquirer's shareholders. Using the 3-day event window, we find significant abnormal return close to 1%. For target companies, our results are consistent and highly statistically significant. Cumulative abnormal return of approximately 20% is observed in every event window. In short, we find no consistent evidence of gains to the bidder's shareholders, while the target's shareholders can pocket large and meaningful returns from being acquired. Since bidder shareholders do not benefit from an acquisition in the short run, bidder managers should take this into consideration when contemplating financing the takeover with the company's own shares. Secondly, in case a bidder CEO wants to take over another listed company, it is important that the stock market is informed that the takeover decision is well prepared such as having a clear integration plan, if bidder shareholders are not to be disappointed

While the majority of previous research finds that on average cash offers yield higher returns for acquirers than mixed or pure stock offers, we do not find evidence supporting this in the Nordic countries "so in that respect our finding does not confirm the literature". We also combine the payment method with valuation to test whether highly valued companies paying with stock achieve significantly lower returns. Our findings are not significant, but suggest that high valuation and stock payments cause lower announcements returns, in line with the signaling effect and pecking order hypothesis. However, we do find weak evidence of target shareholders earning the highest return when offered cash rather than mixed pure stock payment.

Our findings show that high levels of cash flow do not seem to cause negative market reactions upon M&A announcement for acquirers. However, the combination of cash flows and valuation yields some interesting results. We create an interaction variable i.e. measure of low valuation with cash flow and find strong and robust results in line with the free cash flow hypothesis. That is increasing cash flow for low valued companies, prior to announcement negatively affects abnormal returns, implying possible agency problems. Our findings are consistent with previous research.

We find weak evidence of a positive relation between cash flow and cumulative abnormal returns for target companies, suggesting that this is an attractive attribute.

Furthermore, diversifying acquisitions yield higher abnormal returns on average than focused acquisitions, a result that is contrary to the majority of previous research results. Our results are significant. This result is an extension of the current literature, as we find that the cumulative abnormal return for bidders equals 3 and 4,3 percent. During the last decade there has been a tendency towards focusing on core business which has resulted in an increase in divestitures. However, our findings suggest that one may question if stock markets really believe in a strong focus on core business. Thus, we are unable to find any strong relationship between the target's abnormal return and core versus non-core acquisitions. The managerial implication is that the notion of core business should not restrict the ability to engage in diversifying M&As.

In line with the growing interest in cross-border transactions, we investigate the difference between acquiring foreign or domestic targets. Our results indicate that the average announcement returns are lower for cross-border M&A events. However, the calculated differences are not significantly different from zero. For targets being acquired by foreign companies, we find insignificantly higher returns.

Finally, we test the relationship between the acquirer's announcement return and value versus growth targets. There is a large body of research supporting the outperformance of value firms relative to growth firms. We could not find any significant or significant relationship between target's growth prospects and acquirer's cumulative abnormal return upon an M&A announcement.

Overall, we find evidence that both supports and contradicts research from other markets. This suggests that the stock markets in the Nordic region behave somewhat differently when compared to markets in the US, the UK and Europe generally.

One should take into account that our findings only analyze the short term impact on the bidder's and the target's share prices. However, whether M&As are able to generate value or destroy value in the long run is highly uncertain, as noise and other significant events may influence the analysis. Moreover, we have studied the impact from the perspective of the shareholders, but it is uncertain, how

M&As influence other key stakeholders such as employees, customers, suppliers and local communities, etc. We acknowledge that such stakeholders will be affected in an M&A situation, but quantifying the impact is very difficult.

Our findings also have theoretical implications since our results seem to confirm that there are agency costs associated with bidder announcements, also in the Nordic countries. As a consequence, there is a need to analyze the corporate governance setup in these countries, which differs considerably in the various Nordic countries. To illustrate this, the appointment of new board members in Sweden is delegated to the largest institutional investors. The role of the CEO in Sweden also differs compared with Denmark and Norway as the Swedish CEO (entitled VD) is acting more autonomously; in Denmark and Norway the CEO is formally in charge of the management board as a collective decision body. Our results imply that such institutional differences are not able to explain different levels of agency costs in terms of bidder returns, as all the Nordic stock markets react in a similar manner

Future research avenues in this area would benefit from focusing on how the bidder firms announce their acquisitions. In theory, a bidder has in advance identified a number of synergies, the implementation of which is expected after the acquisition. However, the stock market anticipates that in practice the realized synergies do not always exceed the bidding premium. In practice, it is often easier to reduce costs than increase revenues, and it might be difficult to integrate different management teams. One may consequently consider studying the postmerger integration process in more detail in order to find any pitfalls that might reduce the value creation from the perspective of a bidder company

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