

Shareholder Return in Swedish M&A, Pre and Post Financial Crisis

An empirical study of public takeover bids on Nasdaq Stockholm

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ABSTRACT

This paper analyses various drivers for target shareholder return related to takeover bids on Nasdaq Stockholm between 2000 and 2016. For all takeovers analysed, we find announcement effects around 22 percent. Our results suggest that there are differences in the returns for hostile and friendly bids historically, but that no conclusion can be made whether takeover type have an impact on short-term wealth effects. There is strong evidence that all-cash payments generate 10 percent higher abnormal return than other payment methods. We further investigate whether there are any differences in target shareholder return between the periods pre and post financial crisis and what underlying factors that give rise to these differences, such as regulations, managerial behaviour and market-to-book ratios.

Keywords: M&A; Public takeovers; Shareholder return; CAR; Event study

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1. Introduction

The following section will provide the reader with a general background to the study. Furthermore, an explanation of the purpose of the study together with delimitations, will be outlined.

1.1. Background

The complex phenomenon of mergers and acquisitions (M&A) has played an important role for the corporate landscape across all geographies and thus given rise to a high interest within the field among researchers. Numerous papers have tested and described various angles of, and reasons for, M&A from perspectives such as achieved synergies, operational diversification, vertical or horizontal integration and even empire building for reasons described almost as selfish from a manager's perspective.

The economic rise leading up to the financial crisis in 2008 meant a high M&A activity on the Swedish market followed by a lower activity in the downturn that followed the financial crisis in 2008. John Abrahamson, Managing Director at SEB Corporate Finance, said that there is a larger loss if a bid not goes through today as it is associated with larger costs due to increased regulations, which requires advisory within finance, legal and PR, and even reputational damage due to higher media surveillance.

Separating friendly and hostile bids is, interestingly enough, something that has been mentioned seldom in Swedish media. For instance, Nasdaq does not even make this distinction in their database over Swedish takeovers. The reason for this is that most of the bids on the Swedish stock market are friendly.

Regardless of the economic landscape or the type of takeover, those ultimately affected by takeover bids are the shareholders in the target company and thus, this paper examines the public takeover-related economic return from their perspective.

1.2. Purpose

The research field of shareholder return in public M&A is fairly explored for larger markets such as the US, UK and European market. The field has not been as investigated for smaller markets and thus, this thesis aims to analyse public takeover bids on Nasdaq Stockholm. The study "Shareholder Value Creation in European M&As" by Campa & Hernando (2004), analyses the CAR for target shareholders during the time period 1998 to 2000. Campa and Hernando focus on the various drivers for shareholder return and insights

gained from reading their study gave rise to a willingness to perform a similar study on Nasdaq Stockholm.

By performing a similar study the results from Nasdaq Stockholm can be put in relation to those of larger markets. However, the main purpose with this study is to investigate what factors drive the target shareholder return on Nasdaq Stockholm. In cases where drivers differ from other markets, the underlying reasons for this will be analysed, and in cases where drivers are similar, reasons will be provided for this as well. Further, emphasis will be put on how the financial crisis in 2008 has shaped the Swedish M&A market.

1.3. Delimitations

This thesis has been limited to only look at Swedish takeovers. The reason for this is that previous research within this field is more common on the US, UK and European markets. Furthermore, this thesis only examines public takeovers on Nasdaq Stockholm, excluding takeovers on other Swedish exchanges such as First North, Alternativa Aktiemarknaden (the Alternative Stock Market) and NGM (Nordic Growth Market). This exclusion has been made due to the fact that companies traded on these exchanges are often much smaller with regards to market capitalisation and thus less liquid in terms of trading volume. As for methodology, cumulative abnormal return has been used to capture target shareholder return as this is the most practical and commonly used method to measure shareholder wealth gain. Looking at several separate event windows within both the shorter and longer range provide an objective image of the various drivers for target shareholder return. While the level of noise is minimised through the shorter windows, the longer takes into account effects from factors such as information leakage prior to announcement (Goergen & Renneboog, 2004).

2. Terminology

The following section will cover commonly used terms in this thesis. Outlined below is the interpretation and definition of the terms to be used reading this study.

2.1. Public Takeovers

A public takeover is a corporate action made by a bidding company in order to take control over the target company by acquiring the outstanding common shares through a tender offer. To induce the shareholders in the target company, the acquirer's bid often includes a premium well above the current share price (often 20 to 30 percent) conditional at least 51

percent of the shareholders accept the offer. The offer conditions can either include payment in cash, equity swap or both (hybrid).

2.2. Friendly vs. Hostile Takeovers

A friendly takeover occurs when the acquiring company has conducted initial discussions with the board of directors in the target company before placing the bid. If the target board, often accompanied by a financial advisor, finds the bid appropriate they recommend the shareholders to accept it.

Hostile takeovers, on the contrary, is either *i)* when the board in the target company rejects the acquirer's bid and the bidder continues to pursue it by making an official bid announcement or *ii)* if the bidder places the bid without any prior discussion with the board in the target company.

2.3. Target Shareholder Return

Target shareholder return refers to the realised return for the shareholders in the target firm when a takeover bid is placed. The return refers to abnormal returns (i.e. adjusted for market returns) in the target company's share price.

3. Regulatory Framework

In the following section, the legal background of takeover bids impacting target shareholder return will be discussed in general. An outline of the historical development of the regulatory framework will be provided together with a comparison of Swedish legal regulations versus those of the US and UK.

3.1. Mandatory Bid Rule

The mandatory bid rule (MBR) originates from the UK stock market where it was first introduced in the 1950s after a wave of takeovers where several actors were perceived as if they acted unfair on the, at that time, not regulated market. In 1968 the first regulatory function for the stock market was formed through the Commerce Stock Exchange Committee (Sw: "Näringslivets Börskommitté", NBK), which aimed to enable shareholders to evaluate bids properly and secure equal treatment of shareholders of same shareholder class across all transactions. Recommendations to the Swedish market were initially issued by NBK in 1971, rather than legal binding laws, and were built on the many aspects of the UK market.

However, not all aspects were copied. For instance, the rights for a Swedish board to act against a hostile bidder were limited at the time (Nachemson-Ekwall, 2012).

The Swedish takeover recommendations have been revised multiple times and have come to be defined as laws in many aspects. The first revision of takeover rules was made in 1979, following one of the first modern takeovers in Sweden – Beijer Invest's hostile bid on Företagsfinans the same year. This was the first time a takeover bid was announced without any prior negotiations with a dominant shareholder group nor the board of directors in the target firm.

However, the major change in the Swedish takeover regulations came in 1999 when the mandatory bid rule at 40 percent ownership was introduced. This can be set in contrast to the threshold of 30 percent in most other European countries. Shareholders already controlling 40 percent, or more, of the stocks or votes at the time of this introduction were excluded from the rule (Nachemson-Ekwall, 2012). The rule's intention is to protect the shareholders in the company when major changes in the ownership structure are taking place. Thus, this law force owners of more than 40 percent ownership to place a bid for all the remaining shares.

According to Nachemson-Ekwall, the introduction of new regulations as such has had a large impact on the takeover market. An introduction of mandatory bids at a certain ownership level would by default increase the number of takeover bids since all owners holding over 40 percent shares prior to these regulations, now would be forced to place a bid for the remaining shares. However, this is not the case due to the rules not being applicable in retrospect.

These regulations were later in 2003 revised to include an ownership level of 30 percent and further revised according to the EU Takeover Directive in 2006, which likely should increase the number of takeovers on Nasdaq Stockholm even further. In line with these arguments, previous studies give evidence for the takeover market being fuelled by factors such as regulations (Martynova & Renneboog, 2005). Although Martynova and Renneboog examine the American stock market, parallels can be drawn to Sweden where regulations regarding mandatory bids have changed over time.

In conclusion, the purpose of MBR is to protect minority shareholders in situations where the controlling influence in a company is concentrated. The shareholder should then be offered, but not required, to divest their holdings (Swedish Supervision Authority). Thus, mandatory bids have been defined as hostile in the context of this thesis, since the bidding company has no other choice than to place it.

Table 1
Revisions of Swedish takeover rules 1972-2012

Date of Change	Reason
1972	First takeover rules
1979 (revision 1)	Beijer Invest's hostile bid on Företagsfinans
1988 (revision 2)	Better prospectus
1999 (revision 3)	Better prospectus and mandatory bid rule at 40 percent
2003 (revision 4)	Addressing all listed companies
2003 (revision 5)	Technical revision, MBR lowered to 30 percent
2006 (revision 6)	EU Takeover Directive subject to <i>Lagen om Offentliga Uppköpserbjud.</i>
2009 (revision 7)	Major update addressing bidding party, target board and technical issues
2012 (revision 8)	Technical revision

Source: Nachemson-Ekwall (2012)

3.2. Disclosure Rules

In parallel to the MBR, Swedish owners also have to comply with disclosure rules. Disclosure rules require shareholders to register as their holdings reach certain threshold levels. In Sweden, this threshold level for reporting is set at 5, 10, 15, 20, 25, 30, 50, 67 (2/3), and 90 percent ownership (Sveriges Riksdag, SFS 1991:980).

Disclosure rules are motivated from a theoretical point of view by improving market efficiency. When a bid is placed, disclosure of the identity of large shareholders provide investors with a better view of agency costs as a more concentrated ownership increases the risk of majority owners acting for their own benefits. By requiring issuers to disclose ownership of large shareholders, investors can make more well-informed estimates of the implications of agency costs and thus the value of the share (Siems *et al.*, 2009).

On the other hand, disclosure rules can impact the M&A market negatively by reducing the number of takeovers from the perspective of corporate governance. This is due to the fact that mandatory disclosure rules can discourage the initial bidder from making a bid in the first place since the potential profits are reduced as the market can anticipate such an action better. Furthermore, mandatory disclosure rules can act as an early warning sign for the target board. If a target board is informed that an owner has reached 5 percent ownership they might introduce poison pills, golden parachutes and other defence mechanisms that can make a future takeover much more expensive for the bidder and might prevent the takeover from taking place altogether (Siems *et al.*, 2009).

3.3. Takeover Regulations Across Different Markets

There are important differences between countries during a takeover due to both varying regulations, perspectives on corporate governance and cultural differences. Since the fundamental objective with takeovers is to gain control of the target company, differences in control are of utmost importance. In the UK, the code of corporate governance prevents shareholders or related parties owning over 10 percent of the votes, to use his or her full voting right in the annual general meeting if there is a conflict of interest. Thus, an acquirer will not be able to get full control over the target company if not a vast majority of the non-tendering shareholders (i.e. the shareholders that have not accepted the tender offer) consent. This makes it very hard, almost impossible, for external parties to get full control in takeovers (Nachemson-Ekwall, 2012). The US regulations, on the contrary, does not prevent shareholders from issuing their voting rights in this way, however, the SEC 13-D filing^{*} restricts controlling shareholders to whom they can sell their shares. The US regulations also give the board of directors a substantial bargaining power in order to defend itself from bids considered to be hostile. The effect of this is the risk of bidders having to pay higher premiums in the US (and in the UK), relative to Sweden.

In Sweden, takeover regulations include a web of international and national legislation and self-regulation. This has led to several complications. One is that Sweden only has a single set of regulations, independently of ownership structure in the target company. Another example is the one of A and B shares which have made several deals on the Swedish market complicated (Nachemson-Ekwall, 2012). For reasons like these, the takeover characteristics on deals in Sweden are likely to differ from those of other markets where studies have been performed previously.

4. Theoretical Framework and Hypotheses

In the following section, the theoretical background of takeover bids and target shareholder return will be discussed in general and an outline of how the economic landscape differed pre and post financial crisis will be provided. The hypotheses have been based on these matters and will further address investigated theories.

^{*} Form that must be filed with the U.S. Securities and Exchange Commission (SEC). The form is required when a person or group acquires more than 5 percent of any class of a company's shares

4.1. Takeover Bids

In accordance with the efficient market hypothesis, the only factor impacting the outcome of a bid should be the bid premium as this theory assumes that the price of a share reflects its true value. However, only considering the bid premium is far from what companies and shareholders do. The logic behind the efficient market hypothesis would then imply that all bids including any degree of bid premium should be accepted since the current share price is the true value of the share. Thus, drawing it to the extreme, all bids including a premium can be said to be considered friendly and almost a kind of charity towards the target shareholders. As is commonly known, all bids are not considered friendly in reality and all bids including a premium are not even accepted.

Analysing the efficient market hypothesis more nuanced, one could instead argue for bids including low bid premiums to be considered hostile and thus not recommended, and bids including high bid premiums to be considered friendly and thus recommended due to the nature of the bid premiums impact on the target shareholder return. However, bidders nowadays are more likely to negotiate with the target firm instead of placing a hostile bid directly (Armour & Skeel, 2007). In other words, the conclusion to be drawn from this reasoning is that other matters play an important part besides from the bid premium. This viewpoint is further strengthened by John Abrahamson, who said that “the largest owners and the target company’s board does not only look at the price, and those other factors must the bidding company take into consideration”. In a transaction where both involved parties agree on the terms there should also be easier to agree upon the purchase price. The opposite outcome, where the parties do not agree and the target does not want to sell, would therefore force the buyer to offer a higher price.

4.2. Economic Return

Previous research has been conducted in the area of economic return with regards to public M&A. In general, most previous literature within this field focuses on the various value drivers for M&A, specific to the firms or businesses involved in the transaction. The main value driver is the size of the bid premium, while other factors can be synergies in terms of cost savings or cross-selling and managerial improvements. Independent of the motives for the takeover attempts, target shareholder return is measured in the same way by using cumulative abnormal return (CAR) over different lengths of event windows (Brown & Warner, 1985). As the bid premium is the main driver of the CAR, other variables have been

included in a more direct manner to explain further differences in target shareholder return not explained by the size of the bid premium itself.

4.3. The Economic Landscape Pre and Post Financial Crisis

It is commonly known that the stock market was on a strong growth path during the years pre financial crisis. The severe financial crisis that followed the crash of the US housing market and the bankruptcy of Lehman Brothers could possibly have a permanent effect on the stock market as a whole and thus the takeover market, due to increased awareness and a higher degree of risk aversion.

Borio (2012) highlights the differences and indications that characterise the time interval leading up to a financial crisis and the time period following it, constituting a whole financial cycle. According to Borio, there is no clear definition of a financial cycle. Instead a financial cycle is commonly referred to as “those self-reinforcing interactions between perceptions of value and risk, attitudes towards risk and financing constraints”. These interactions are then said to be able to “amplify economic fluctuations and possibly lead to serious financial distress and economic dislocations”. This is a very analytical perspective on financial cycles but a common perception. Another view is the concept of pro-cyclicality, designed to be the most relevant from a macroeconomic point of view, outlined by Borio (2012).

Comparing the time periods pre and post financial crisis, it is highly important to separate between financial cycles and business cycles. “Traditional business cycle frequencies range from one to eight years: this is the range that statistical filters target when seeking to distinguish the cyclical from the trend components in GDP”. On the contrary, the average length of the financial cycle has historically been around 16 years (Borio, 2012).

The peaks in a financial cycle are closely followed by a financial crisis of magnitude. The crisis following the bankruptcy of Lehman Brothers is one example of a “valley” in a financial cycle and thus all years following this crash are grouped in this thesis whilst the prior years are considered another subsample. To capture fluctuations in the business cycle as well, a distinction between boom and bust periods, which are shorter in terms of time and more frequently occurring, have been outlined.

Another aspect that impacts the M&A activity according to previous research is the one of takeover waves. Takeover waves are defined as consecutive years with more takeovers than normal. During the sixth takeover wave, which took place during 2003-2007, the market for corporate control was less competitive whilst the bidders were less acquisitive and the management in the acquiring companies were more bearish when it comes to value creation

through M&A. As a result, this period included substantially lower bid premiums than other years on the US stock market (Alexandridis *et al.*, 2012).

Although this paper does not focus on takeover waves in particular, the different drivers for merger waves are important to bear in mind as they impact the M&A landscape. The different drivers are unique for each takeover wave according to Alexandridis *et al.*, although some common denominators have been concluded that can be applied in this thesis. One is that takeover waves often occur in periods after a financial crisis when the stock market is flourishing. Furthermore, industrial and technological shocks drive the M&A activity together with macroeconomic aspects such as credit accessibility.

In the dataset on which this thesis is based, a large number of takeovers in the 2000s were related to IT companies, whereas many takeovers in 2003 were related to telecom companies, highlighting the impact of industrial shocks. Post financial crisis have been characterised by cheap financing with low interest rates, which theoretically would increase the number of takeovers. Thus, in conclusion, drivers that impact the public M&A market are cyclical and impact the takeover market to various extents pre and post the financial crisis since both these periods include economic downturns and upswings. Comparing the periods pre and post financial crisis, in combination with shorter time periods, would thus give an objective view of what drives the economic return for target shareholders.

4.4. Hypotheses

4.4.1. Target Shareholder Return

Dodd and Ruback (1977) conclude that target shareholders earn large and significant abnormal returns in the month of a takeover announcement. Franks and Harris (1989) further argue that these gains amount to 25 to 30 percent around the announcement date. To assure that the shareholder return originating from a takeover announcement on Nasdaq Stockholm is statistically different from zero, a T-test will be conducted.

Hypothesis one: Target shareholder returns originating from a takeover bid are statistically different from zero

When the economy is thriving, executives more often engage in empire building as margins are high and financing is more accessible, which in turn can result in larger amounts spent on M&A activities. During these periods, bidders often show a greater willingness to pay higher premiums and acquire more risky targets, which leads to a decrease in bidder gains

(Shelton, 2000), which further is supported by the hubris hypothesis of Roll (1986). This in turn means that the target shareholder return is lower when equity market cycles are low. However, in these periods firms often have low market-to-book ratios (low q ratios), which should motivate bidders to pay a higher premium. Previous research has shown that more value can be created in a takeover where at least one of the parties have a low q ratio (Servaes, 1991; Lang *et al.*, 1989). Thus, to get a better understanding how the shareholder return has changed after the financial crisis in 2008, the second hypothesis will focus on whether there are any differences in CAR between the two subsamples.

Hypothesis two: The difference in target shareholder return pre and post financial crisis is statistically different from zero

A T-test examining whether there are any differences in bid premiums have been conducted in parallel to the hypothesis to give a better understanding of what drives a potential change in car.

4.4.2. Hostile Takeovers

Previous research conclude that hostile bids generate higher return for target shareholders. The characteristics of a hostile bid is that it is either rejected nor pre-negotiated with the board of directors in the target company before the bid is made. Thus, bid premiums are often higher in hostile takeover attempts, leading to a higher target shareholder return. Goergen and Renneboog (2004) further conclude that the relatively larger surge in the target's share price also reflects the markets expectation of opposition from the management that will lead to upward revisions of the offer price. Their findings, showing a higher CAR for target shareholders in hostile takeovers, made on large intra-European takeover bids, are also in line with other research on the US market (Franks & Harris, 1989), the UK market (Sudarsanam *et al.*, 1996) and on the European market (Campa & Hernando, 2004).

On the contrary, the managerial welfare hypothesis, which was introduced in 1981, suggests that a merger typically leads to a reduced risk in the combined entity following corporate diversification. In perfect capital markets, a shareholder will be better off by diversifying their own portfolio. However, due to the agency problem, there might be a conflict of interest as a successful merger may result in a loss of compensation with a new employer. According to this, the target management's recommendation on a takeover bid will be dependent upon changes in their own welfare (Amihud & Lev, 1981). On the contrary,

research performed by Walkling and Long (1984) has shown that there is no significant difference in the percentage bid premium offered to target shareholders in a hostile versus friendly takeover attempt.

Hence, the third hypothesis will test whether hostile takeovers generate higher shareholder return than friendly.

Hypothesis three: Hostile takeover bids generate higher returns than friendly takeover bids

4.4.3. Boom or Bust

In addition to the second hypothesis, focusing on changes in financial cycles, this hypothesis will have a more short-term focus and investigate whether the size of target shareholder return correlate with index.

Melicher *et al.* (1983) found evidence that changes in aggregated M&A activity is explained by capital market conditions. They conclude that changes in stock prices and bond yields can be used to predict future changes in merger activity. Thus, as takeover negotiations tend to start about six months prior execution, a prospering M&A market should indicate higher anticipations of more receptive capital market conditions with booming equity markets.

When equity markets are booming, valuations tend to rise in relation to book value, which is in line with Tobin's Q. This implies that a bidder has to pay a higher price during a boom period compared to a bust period. As prices are higher, the competition among acquirers are expected to be lower due to the fundamentals of supply and demand. High prices would then drive down competition and make bid premiums less substantial in size. Thus, bid premiums, which drives shareholder return, should be lower in boom periods compared to bust periods. On the contrary, Chowdhury (1993) argues that changes in merger activity are random and not explained by macroeconomic factors.

Based on previous research and arguments outlined above, hypothesis four is formulated as follows:

Hypothesis four: The realised return for target shareholders is higher in bust periods than in boom periods

As Melicher *et al.* (1983) mentioned, merger negotiations often start half a year before the announcement date. Thus, the focus of this hypothesis will be whether the cumulative

return on Nasdaq Stockholm has been positive (boom) or negative (bust) during the last six months prior to the bid announcement. In contrast for testing for the two subsamples (pre and post financial crisis), which are created to capture long-term effects stemming from economic life-cycles, takeover waves and other fundamental principles, this hypothesis will have a more short-term focus.

4.4.4. Payment Method

When it comes to different payment methods, cash offers and equity swaps have different tax implications. A cash offer generates an immediate tax obligation for the target firm's shareholders, while an equity swap is tax-free for the bidder as any capital gains realised from the deal are being deferred until the sale of the stock. Travlos (1987) argues that this gives rise to higher bid premium when an all-cash offer is made compared to an equity swap or hybrid (mix of equity and cash).

Previous research further show that a takeover announcement involving an equity swap may signal that the bidding company's shares are overpriced since rights issues tend to occur when equity markets are peaking. Hence, all-cash offers should generate higher returns for the target shareholders (Yook, 2000; Franks & Harris, 1989; Franks *et al.*, 1988; Huang & Walkling, 1989 – cited in Goergen & Renneboog, 2004). Based on previous research and arguments outlined above, hypothesis five is formulated as follows:

Hypothesis five: All-cash payments generate higher shareholder return than other payment methods

4.4.5. Deal Outcome

Through a study conducted on the U.S. market between 1958-1975, Dodd and Ruback (1977) conclude that the realised return for target shareholders concerning a takeover attempt where the outcome later on is successful, is statistically higher compared to an unsuccessful bid. Their results should thus imply that the market is somewhat able to predict the outcome of a takeover attempt, as the market is not aware if the takeover attempt will be successful or not at the announcement date. Schoenberg and Thornton (2006) look at deal outcome as well, not with regards to drivers for shareholder return but instead at what affects deal outcome in hostile bids. One might argue that the usage of different protection mechanisms in the target company forces the bidding company to place a higher bid in order for it to be successful, increasing target shareholder return. Deakin *et al.* (2002) also analysed takeover bids in the

UK, outlining different rates of successfulness depending on whether the deal was recommended or hostile.

Consequently, this hypothesis will test whether there are any differences in target shareholder return depending on the deal outcome.

Hypothesis six: Successful takeovers generate higher shareholder return than unsuccessful takeover attempts

5. Methodology

The following section will explain the methodology used to analyse the matters on which this study is based. Based on data collection from Nasdaq Stockholm, the analysis has been conducted using an ordinary least square regression and t-tests to depict differences.

5.1. Research Approach

This study is made on Nasdaq Stockholm, where the full data sample is divided into two subsamples – pre financial crisis (2000-2008) and post financial crisis (2009-2016), drawing the line at 31 December in 2008 following the bankruptcy of Lehman Brothers the same year. In order to control for shareholder return, an event study approach outlined by Brown and Warner (1985) will be used. This approach is also in line with previous research (Campa & Hernando, 2004; Goergen & Renneboog, 2004; Huang & Walkling, 1987). All the hypotheses will further be tested for each subsample i.e. pre financial crisis (2000-2008) and post financial crisis (2009-2016) and subsequently the full dataset.

5.2. Event Study

Economists are often asked to measure the wealth effects originating from an economic event and how this will affect the value of a firm. This might sound like a difficult thing to do, but when using an event study it is more simplistic. By using financial market data, one can measure the immediate wealth effect of an event by looking at the firm's stock price (MacKinlay, 1997). There is no unique structure of an event study, but according to MacKinlay a general flow of the analysis looks like the following:

- i. First, one must define the event of interest and identify the period over which the stocks of the companies involved will be examined (the event window).

- ii. Secondly, the selection criteria for the inclusion must be determined. At this stage, it is important to summarise any sample characteristics so that any potential biases in the sample selection can be identified (e.g. friendly vs. hostile bids).
- iii. The final step is the appraisal of the event's impact on the abnormal return.

The following sections will go through these three steps. Section 5.2.1 will introduce the method used for calculating the economic effect originating from a takeover bid by using cumulative abnormal return, and also present the event windows used. Further, section 5.2.2 will present the selection and processing for the data sample. Lastly, 5.2.3 and 5.2.4 will explain how this will be tested statistically.

5.2.1. Cumulative Abnormal Return

To analyse the economic impact of takeover bids, emphasis has been put on the economic wealth effects of shareholders in the target company through application of the market adjusted return model outlined by Huang and Walkling (1987). This model compares the return in a specific share with the market return, based on the assumption that the underlying return in each share is driven by the market. By using this approach, the target shareholder return will be adjusted for movements in the stock not explained by the takeover bid itself but instead general market movements.

Market adjusted return, $AR_{i,t}$, is calculated with the following formula,

$$AR_{i,t} = R_{i,t} - R_{m,t} \quad (1)$$

Where $R_{i,t}$ is the return for share i on day t and $R_{m,t}$ the index return on day t . One can argue for the usage of different indices when calculating the market adjusted return. Since the following analysis is based on target companies listed on Nasdaq Stockholm, a share index on the same stock exchange is required. Among these, the two most commonly used are OMXS30* and OMXSPI**. Due to the fact that public takeover offers are more common among companies of smaller market capitalisation, OMXSPI has been used as indicator of the market return. The fact that OMXSPI reflects all shares on the Swedish stock market further

* Index comprising the 30 shares on Nasdaq Stockholm with the highest trading volume

** Index comprising all the shares on Nasdaq Stockholm, also known as OMX Stockholm All-Share

strengthens this decision, as the market adjusted return should be based on the whole stock market.

The return in each target company has been analysed with the cumulative abnormal return (CAR) method. Cumulative abnormal return is calculated accordingly:

$$CAR_{-t,t} = \sum_{-t}^t AR_{i,t} \quad (2)$$

The event window can also be expressed as $(-t, t)$, with $-t$ in the formula being the number of trading days prior to the announcement and t the number of days following the announcement date, i.e. the day the takeover bid became public (Brown & Warner, 1985; Huang & Walkling, 1987). Assuming the announcement date is at day 0, an event window of three days will be $(-1, 1)$.

Consequently, the average CAR, also called cumulative average abnormal return (CAAR) is calculated as follows:

$$CAAR_{-t,t} = \overline{CAR}_{-t,t} = \sum_{-t}^t \widehat{CAR}_{i,t} \quad (3)$$

Previous research suggests event windows of various lengths as there is a risk of information leakage which might affect the share price prior the announcement date. In order to adjust for these effects one could argue for using longer event windows. However, applying a longer event window also increases the risk of “noise” (events not analysed) that affects the share price (Tuch & O’Sullivan, 2007).

Consequently, the following analysis has been conducted using both short and long event windows: $(-20, 1)$, $(-10, 10)$, $(-3, 3)$, $(-1, 1)$, $(-1, 10)$ and $(-1, 20)$. Two of the most commonly used event windows to capture M&A wealth effects for shareholders are $(-20, 1)$ and $(-1, 1)$ (Andrade *et al.*, 2001). To get a broader view of the analysis, four other windows have been included, where two of them mainly focus on the market reactions after the announcement to include potential effects such as recommendations from the target’s board of directors.

5.2.2. Data Collection and Processing

The dataset used consists of 215 observations of public takeover bids on Nasdaq Stockholm from the period 1 January 2000 to 31 December 2016. Data has been gathered from Nasdaq OMX Nordic where the provided transaction details included bidding company,

target company, date of offer, and offer conditions (i.e. offer price per share, etc.). MergerMarket has further provided more specific information regarding the deal structure, including takeover type (friendly or hostile). Because no database has been able to provide all the data singlehandedly, complementary data, such as press releases and articles, has been collected from Retriever. Due to discrepancy between different sources, the databases have been used in combination to create a more extensive and robust dataset. Share price data has solely been extracted from Thomson Reuters' DataStream, while index data for OMX Stockholm All-Share (OMXSPI) has been collected directly from Nasdaq OMX Nordic's website.

Our sample initially consisted of 244 takeover bids. Due to incomplete information from Nasdaq, advanced offer conditions (e.g. advanced payment solutions) and other limitations such as mandatory bids, our selection was limited to 215 takeover bids. The exclusion of mandatory bids is an important adjustment in the data collection. As previously described, mandatory bids are per definition hostile and required by law. Therefore, these bids seldom include any premium, instead they might even include a bid discount. These bids have therefore been excluded since they to a high extent drive the analytic outcome for the subgroup hostile bids, due to the small sample size. However, excluding mandatory bids implies some implications as well, lowering the number of hostile bids even further and the size of this subgroup makes it less solid in terms of data points. This is something that the reader should bear in mind with regards to conclusions to be drawn for hostile takeovers.

Iterations regarding bid announcement date have been made in some observations. Due to information leakage, there are market reactions before the actual announcement date leading to abnormal returns in the share. King and Padalko (2005) stress the importance of identifying the righteous announcement date to measure the pre-bid share price. King and Padalko performed a news search on corporate actions six months prior to the formal press release to find the news-adjusted announcement date. This date is when any information concerning the takeover reaches the market. Observations where substantial trading volumes has been identified prior to the formal announcement date have had their dates adjusted in order to be able to account for the truthful CAR. However, the number of observations affected by these adjustments are few and will not have a significant impact on the outcome of this analysis.

Public takeover announcements on Nasdaq Stockholm (2000-2016)	244
Mandatory bids	-15
Missing market data and outliers	-14
Final sample	215
<i>Of which friendly takeovers</i>	<i>182</i>
<i>Of which hostile takeovers</i>	<i>33</i>

As the intentions with this thesis is to identify whether there are any effects on public takeover bids on Nasdaq Stockholm pre and post financial crisis, the time window is considered to be representative. This period include the end of the fifth takeover wave taking place between 1997 and 2000, and the sixth between 2004 and 2008 that ended with the Lehman Crash (Nachemson-Ekwall, 2012).

5.2.3. T-test

Hypothesis one and two will test *i)* whether the CAR is statistically different from zero and *ii)* if there are any statistically significant differences in CAR between the two subsamples (pre and post financial crisis). In addition t-tests will be used to test for differences between the outcome in each dummy variable for hypothesis three to six. Welch's T-test will be used as the subsamples are of unequal sizes and are assumed to have unequal variances.

$$t = \frac{CAAR_{t_1,t} - CAAR_{t_2,t}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (4)$$

where

$$s_1^2 = \frac{\sum_{i=1}^{n_1} (CAR_{t,i} - CAAR_{t_1,t})^2}{n_1 - 1} \quad (5)$$

and t is the test statistic and s^2 is the sample variance.

5.2.4. Regression Models

Below is a short summary of hypotheses three to six, and their respective variable.

Hypotheses	Variables
H ₃ : Hostile takeover bids generate higher return than friendly takeover bids	HOSTILE
H ₄ : The realised return is higher in bust periods than in boom periods	BUST
H ₅ : All-cash payments generate higher return than other payment methods	CASH
H ₆ : Successful takeovers bids generate higher return than unsuccessful	SUCCESS

Hypothesis three to six will be using an ordinary least square regression using dummy variables to test the statistical significance explaining cumulative abnormal returns (CAR). All the studied variables are dummy variables, i.e. they can take on a value of 1 or 0. The OLS regression will have the following formula.

$$CAR = \alpha + \beta_3HOSTILE + \beta_4BUST + \beta_5CASH + \beta_6SUCCESS + \varepsilon_t \quad (6)$$

HOSTILE – Dummy variable explaining takeover type with 1 if hostile and 0 if friendly

BUST – Dummy variable with 1 for bust and 0 for boom

CASH – Dummy variable with 1 for cash payment and 0 if equity swap or hybrid

SUCCESS – Dummy variable with 1 for successful and 0 for unsuccessful

As mentioned in section 5.1, all tests will be conducted by initially testing each subsample separately (i.e. pre and post financial crisis separately) and then for the full dataset.

Table 1
Descriptive statistics: correlation matrix

	HOSTILE	BUST	CASH	SUCCESS	CAR (-1, 1)
HOSTILE	1.0000				
BUST	0.0544 (0.427)	1.0000			
CASH	-0.0217 (0.752)	-0.0310 (0.652)	1.0000		
SUCCESS	-0.4070 (0.000)	0.0261 (0.704)	0.1168 (0.088)	1.0000	
CAR (-1, 1)	0.0231 (0.736)	0.0570 (0.406)	0.1908 (0.005)	0.1202 (0.079)	1.0000

As can be seen in Table 1, a correlation matrix has been created to test for multicollinearity. As there is no correlation that exceeds ± 0.5 , the variables used are to be seen as appropriate. Due to the usage of six different event windows, we just present one in the matrix above, i.e. CAR (-1, 1), as the other event windows show similar correlation.

6. Data

Data has been conducted with regards to public takeovers on Nasdaq Stockholm, in order to answer the hypotheses. The following section aims to provide an overview of the conducted dataset to give the reader an improved understanding of the Swedish takeover market during the analysed time period. Besides from providing an overall view of the market, it will picture differences between pre and post financial crisis will be the main focus.

6.1. *Introduction to Dataset*

Of the 244 gathered data points, 215 remained in the refined dataset. The dataset was refined and adjusted due to various factors, such as public takeovers with little information. Outliers were analysed in detail in order to address whether they were to be included or not since outliers often were related to mandatory bids, required by Swedish corporate law and thus not as an intention of an acquisition. The latter bids often include a bid discount and thus, they have been excluded from the dataset. Of the 215 analysed bids, 182 were considered friendly and 33 were considered hostile. Furthermore, 77 percent of the analysed takeovers were considered successful, whilst the remaining 23 percent were considered unsuccessful.

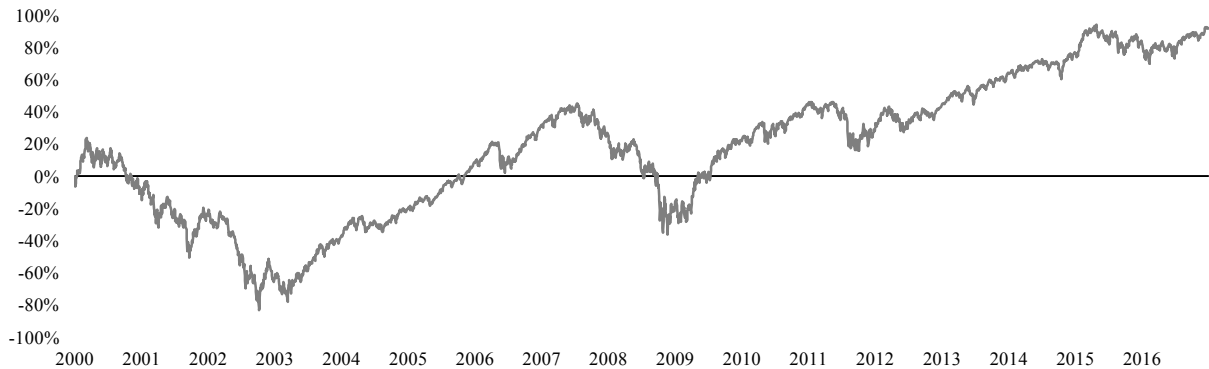
6.2. *M&A Timing*

Chart 1 shows the development of OMXSPI during the period 1 January 2000 to 31 December 2016, in other words the period in which public takeovers have been analysed. As can be seen below, the steepest downturns occurred after the IT bubble went bust in year 2000 and after the housing market crashed in the US in late 2008, leading to the financial crisis the same year. However, more importantly, the chart shows strong economic rebound on Nasdaq Stockholm during years both pre and post financial crisis. This supports the reasoning behind looking at boom and bust periods separately, instead of grouping pre and post financial crisis in two separate subsamples without addressing this matter.

Chart 1

Index development

The chart displays the development of the index OMXSPI between 2000 and 2016.*



Source: Nasdaq OMX Nordic

After having divided the data sample into the periods pre and post financial crisis it is found that the distribution between friendly and hostile bids are rather similar independent of economic landscape. As can be seen in Chart 2 and 3 below, 84 percent of all bids pre financial crisis were friendly compared to 86 percent post financial crisis. In terms of successfulness, 79 percent of all bids in the data sample had a successful outcome pre financial crisis, compared to 70 percent post financial crisis. Chart 4 further indicates that bids occur more frequently during boom periods compared to bust periods. In conclusion, companies have shown a higher M&A appetite during 2000-2008. Furthermore, the bids placed during this period have been successful slightly more often.

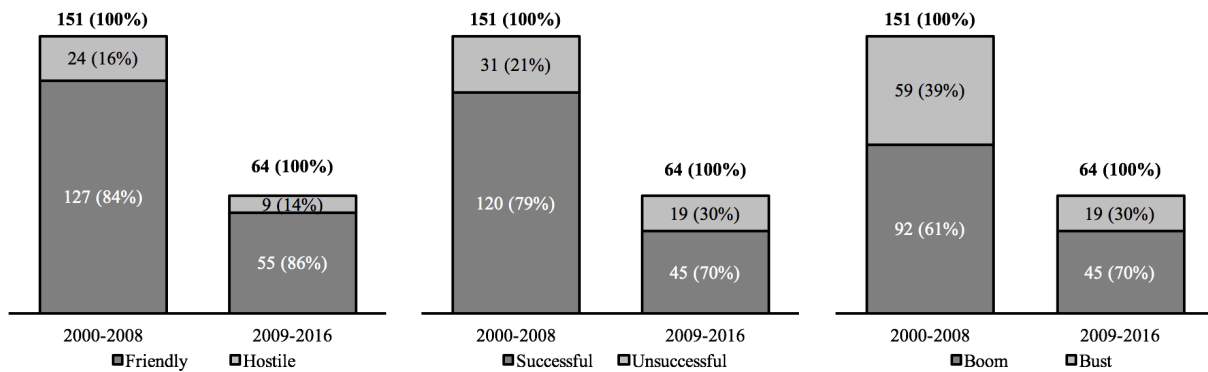
There is a relationship between takeover type and deal outcome. In the full data sample, 84 percent of the friendly takeovers had a successful outcome whilst that number for hostile bids were 35 percent. These results are somewhat lower than previous research. Schoenberg and Thornton (2006) reported a successful rate of 48 percent for hostile bids on the UK market 1996-1999 while Deakin *et al.*, (2002) reported a successful rate of 60 percent for hostile bids on the UK market 1993-1996.

* Rebased to the first trading day of year 2000

Chart 2, 3, and 4

Descriptive statistics: Timing of bid

Chart 2 shows the frequency distribution of friendly and hostile takeover attempts for each subsample. Chart 3 demonstrates the frequency distribution between successful and unsuccessful takeover attempts, pre and post financial crisis. The last chart, Chart 4, illustrates the frequency distribution of takeover attempts initiated during boom and bust periods.



Almost all economic activity is commonly believed to be stronger during periods of economic uplift. Goergen and Renneboog (2003) show that the aggregated value of all European M&A activity rose by more than 280 percent over the period from 1996 to 1999, leading up to the IT bubble. Not all actors benefit from the increased activity during as economic upswing though. Shelton (2000) provides evidence for a deteriorating bidding shareholder return in these periods. This is, according to Shelton, due to the bidding company's tendency to be overconfident in periods with e.g. easily accessible financing, leading up to paying too high prices for the acquired businesses.

Chart 5

Six month cumulative index development

The chart displays the six month cumulative return on OMXSPI between 2000 and 2016.



Looking at periods of economic uplift, examining shorter time spans than the pre financial crisis period as a whole, provides a more precise image (although both shorter and longer time spans are relevant for the analysis). This is due to the fact that the period analysed (2000-2016) includes shorter periods of both economic uplifts and downturns, which can be observed in Chart 5. In order to address this matter, as previously defined, a distinction has been made between boom and bust periods, with boom periods being periods where the overall Nasdaq Stockholm has been net-rising for bust periods and net-declining over the last six months.

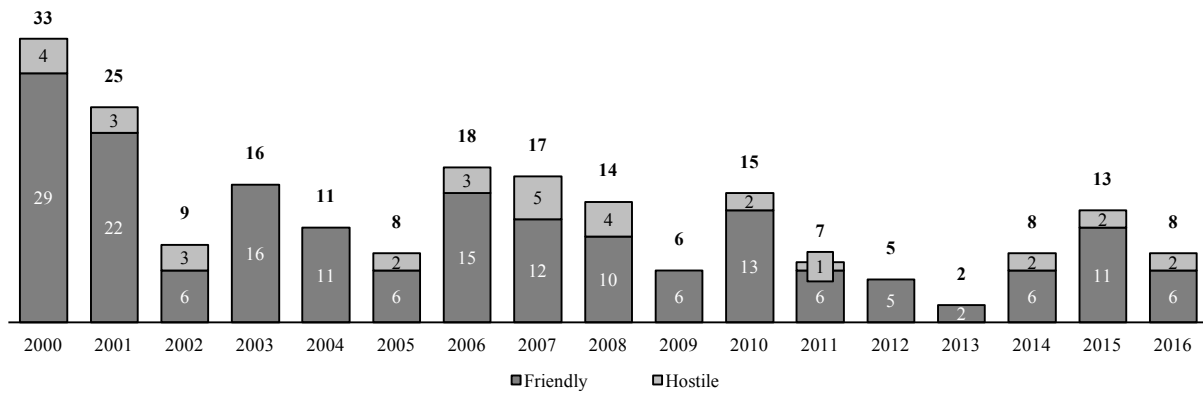
6.3. Historical Development of Public Takeovers

Since the takeover activity fluctuates over time, emphasis has been put on reviewing the data over a longer time frame. Chart 6 represents the yearly distribution of takeovers, stretching from 1 January 2000 to 31 December 2016. As previously discussed, this time frame allows for dividing the dataset into two subsamples, comprising of pre financial crisis (2000-2008) and post financial crisis (2009-2016). It is evident that public takeovers were more common between 2000 to 2008 with an average of 17 takeovers per year, compared to the years between 2009 to 2016 where the average was eight takeovers per year. The number of public takeovers peaked in 2000, with 33 takeover attempts. The reasons for the extraordinary high levels during 2000 can possibly be derived from the IT bubble with many M&A transactions taking place within the industry as well as the favourable market conditions in general, with low interest rates and strong economic growth. However, as the IT bubble went bust, the number of takeovers decreased in 2002. Since then, the number of public takeover attempts has been closer to average levels (17 takeover attempts per year) during the years since 2002 with the low point in 2013 following the European debt crisis in 2012. The conclusion to be drawn from looking at the public M&A market in retrospect is that it is rather cyclical.

Chart 6

Yearly distribution of bids

The chart shows the frequency distribution of takeover attempts on Nasdaq Stockholm between 2000 and 2016.



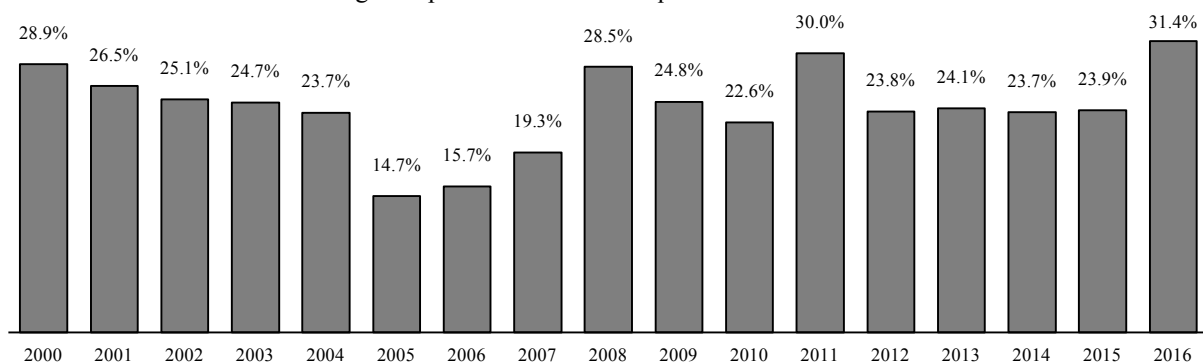
6.4. Historical Development of Bid Premiums

Looking at bid premiums in particular (see Chart 7), the data provides a view of bid premiums being higher, on average terms, post financial crisis. However, the difference is small and therefore no conclusion can be drawn about the size of bid premiums. During the overall period, bid premiums were 24.2 percent on average, compared to 23.0 and 25.5 percent on average pre and post financial crisis, respectively. Comparing the pattern of number of takeovers with bid premiums, there does not seem to be any correlation. The main difference is that bid premiums have not fluctuated as much as number of bids.

Chart 7

Descriptive statistics: bid premiums

The chart demonstrates the average bid premiums* on Nasdaq Stockholm between 2000 and 2016.



*Computed in relation to the share price the day before the bid announcement, i.e. (-1, 0)

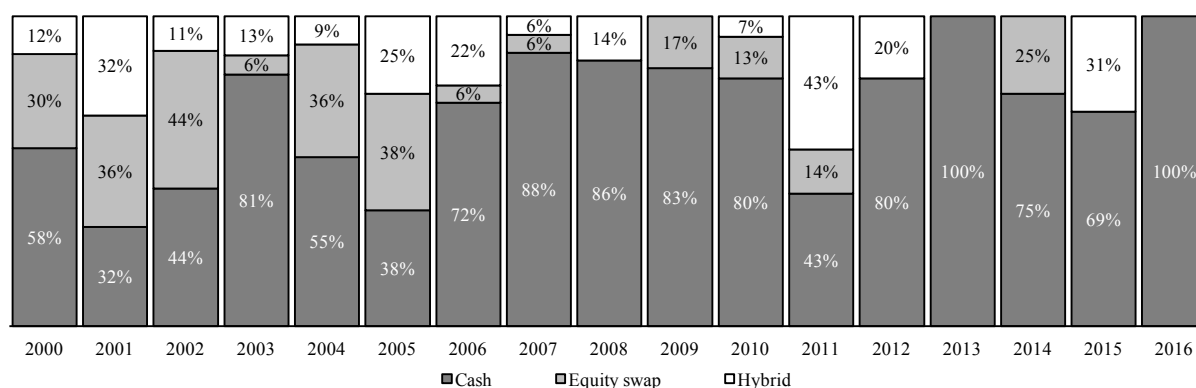
6.5. Payment Method

All-cash transactions are the most common payment method for public takeover transactions. In theory, all-cash transactions should imply higher bid premiums due to the immediate tax burden the target shareholder experiences from this payment method compared to equity swaps or hybrids (Travlos, 1987).

Chart 8

Percentage distribution of takeovers: payment method

The chart below displays the frequency distribution of the payment methods used for takeover bids on Nasdaq Stockholm between 2000 and 2016.



Previous research further shows that a takeover announcement involving an equity swap may signal that the bidding company's shares are overvalued since rights issues tend to occur when equity markets are peaking (Yook, 2000; Franks & Harris, 1989; Franks et al., 1988; Huang & Walkling, 1989 – cited in Goergen & Renneboog, 2004). As can be seen in Chart 8, equity swaps or hybrids were more common pre financial crisis. When comparing the development on Nasdaq Stockholm one could argue that the higher shares of equity and hybrid payments somewhat correlate with the periods of boom and bust.

7. Empirical Results

The following section will present the findings following the statistical analysis. The main results from the OLS regression is presented in Table 2, whereafter comments on these results, along with differences obtained from t-tests, will follow in the same order as the hypotheses.

Table 2

Determinants of short-term wealth effects for target shareholders

This table shows the results of the ordinary least square regression of CAR over all the event windows used in this thesis, tested for each subsample (pre f.c., post f.c.) and for the full dataset. CASH is a dummy variable that equals 1 if the payment is financed through cash and zero otherwise. The variable BUST is set to 1 if the takeover takes place during a boom period, and set to zero otherwise. SUCCESS indicates whether the takeover was successful (dummy = 1) or not (dummy = 0). HOSTILE is a dummy variable that equals 1 if the board of directors opposes the bid or if it was not recommended, and zero otherwise.

		Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
		Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Constant	(-20, 1)	0.1592	3.77 ***	0.1400	2.50 **	0.1535	4.59 ***
	(-10, 10)	0.0818	1.71 *	0.1610	2.68 **	0.1013	2.73 ***
	(-3, 3)	0.1096	2.68 ***	0.1387	2.27 **	0.1107	3.36 ***
	(-1, 1)	0.1060	2.63 ***	0.1376	2.54 **	0.1115	3.50 ***
	(-1, 10)	0.0367	0.83	0.1281	2.15 **	0.0618	1.79 *
	(-1, 20)	0.0216	0.47	0.1239	1.98 *	0.0544	1.50
HOSTILE	(-20, 1)	0.0088	0.20	-0.0259	-0.41	0.0020	0.05
	(-10, 10)	0.0139	0.27	-0.0143	-0.21	0.0174	0.43
	(-3, 3)	0.0724	1.68 *	-0.0402	-0.58	0.0442	1.22
	(-1, 1)	0.0674	1.58	-0.0409	-0.66	0.0363	1.04
	(-1, 10)	0.0695	1.49	-0.0121	-0.18	0.0492	1.29
	(-1, 20)	0.0763	1.57	-0.0078	-0.11	0.0581	1.46
BUST	(-20, 1)	0.0674	2.21 **	-0.0607	-1.36	0.0356	1.42
	(-10, 10)	0.0894	2.58 **	-0.0410	-0.86	0.0564	2.02 **
	(-3, 3)	0.0323	1.09	-0.0115	-0.24	0.0263	1.06
	(-1, 1)	0.0284	0.98	-0.0181	-0.42	0.0195	0.82
	(-1, 10)	0.0505	1.58	-0.0030	-0.06	0.0371	1.43
	(-1, 20)	0.0903	2.72 ***	-0.0190	-0.38	0.0614	2.26 **
CASH	(-20, 1)	0.0535	1.74 *	0.1022	2.11 **	0.0736	2.87 ***
	(-10, 10)	0.1373	3.95 ***	0.0726	1.40	0.1248	4.38 ***
	(-3, 3)	0.0818	2.76 ***	0.0662	1.26	0.0849	3.36 ***
	(-1, 1)	0.0503	1.72 *	0.0645	1.38	0.0647	2.65 ***
	(-1, 10)	0.1145	3.57 ***	0.0804	1.56	0.1143	4.30 ***
	(-1, 20)	0.1034	3.10 ***	0.0897	1.66	0.1068	3.85 ***
SUCCESS	(-20, 1)	0.0241	0.60	0.1055	2.16 **	0.0432	1.37
	(-10, 10)	0.0219	0.48	0.0435	0.83	0.0230	0.66
	(-3, 3)	0.0307	0.79	0.0650	1.22	0.0399	1.29
	(-1, 1)	0.0457	1.19	0.0838	1.77 *	0.0522	1.74 *
	(-1, 10)	0.0629	1.49	0.0524	1.01	0.0526	1.61
	(-1, 20)	0.0829	1.89 *	0.0477	0.87	0.0634	1.86 *
R ²	(-20, 1)	0.0555		0.2042		0.0603	
	(-10, 10)	0.1376		0.0692		0.1041	
	(-3, 3)	0.0831		0.0887		0.0701	
	(-1, 1)	0.0515		0.1349		0.0546	
	(-1, 10)	0.1249		0.0783		0.1083	
	(-1, 20)	0.1416		0.0763		0.1102	
Obs.		151		64		215	

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

7.1. Hypothesis One and Two – Target Shareholder Return

The first hypothesis is whether the target shareholder return is different from zero or not. Previous research has found evidence that public M&A increase target shareholder return. As can be seen in Table 3, the same results have been found in this analysis.

Franks and Harris (1989) found that target shareholders in the UK earn 25 to 30 percent around the announcement date. On the contrary, Goergen & Renneboog (2004) and Campa & Hernando (2004) found that the return were 9 and 4 percent on the announcement date, respectively. If the event window is extended to cover approximately a month before the announcement, the numbers are 23 and 9 percent, respectively. As both papers investigate short-term wealth effects on the European market, one might say that the results should be fairly equal. However, Goergen and Renneboog only analyse large intra-European takeovers while Campa and Hernando look at the M&A activity in the European union as whole. The results from the analysis in this thesis are more in line with Goergen and Renneboog, even though the shareholder target return on Nasdaq Stockholm seems to be more concentrated to around the announcement date, as the incremental return from extending the event window to 20 days prior the announcement only increase the CAAR with 5 percent.

Table 3

Cumulative abnormal returns of target shareholders by takeover type

This table displays CAARs over all event windows used in this thesis for target shareholders by takeover type (friendly, hostile), and divided by each subsample (pre f.c., post f.c.) and the full dataset.

Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Friendly (%)	t-stat	Friendly (%)	t-stat	Friendly (%)	t-stat
(-20, 1)	23.69	14.18 ***	28.44	12.12 ***	25.13	18.33 ***
(-10, 1)	21.65	10.82 ***	23.97	10.01 ***	22.35	14.23 ***
(-3, 3)	19.75	12.29 ***	23.87	9.79 ***	20.99	15.61 ***
(-1, 1)	18.64	11.90 ***	24.88	11.36 ***	20.52	15.89 ***
(-1, 10)	17.89	10.01 ***	23.25	9.89 ***	19.51	13.52 ***
(-1, 20)	18.88	10.15 ***	22.68	9.28 ***	20.03	13.39 ***
Observations	127		55		182	
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Hostile (%)	t-stat	Hostile (%)	t-stat	Hostile (%)	t-stat
(-20, 1)	25.02	7.52 ***	18.76	4.13 ***	23.32	8.55 ***
(-10, 1)	24.49	6.61 ***	19.22	4.77 ***	23.05	7.93 ***
(-3, 3)	26.68	7.68 ***	14.84	3.99 ***	23.46	8.23 ***
(-1, 1)	24.13	7.21 ***	14.92	3.90 ***	21.62	7.96 ***
(-1, 10)	23.60	6.09 ***	17.20	3.84 ***	21.86	7.10 ***
(-1, 20)	25.03	5.92 ***	17.44	3.29 **	22.96	6.73 ***
Observations	24		9		33	

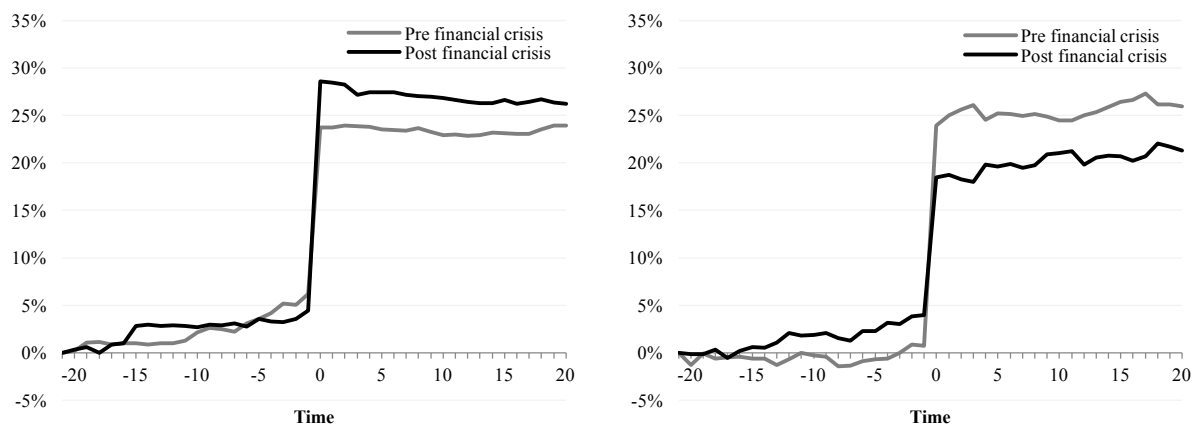
***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

The second hypothesis is whether the difference in target shareholder pre and post financial crisis is statistically different from zero. Chart 9 and 10 show the development of the CAAR in an event window of 40 days (-20, 20). As can be seen in Chart 9, the CAAR in friendly bids has increased by approximately 5 percent on the announcement date compared to pre financial crisis, while the CAAR for hostile bids (Chart 10), on the contrary, has decreased by some 5 percent.

Chart 9 and 10

Cumulative average abnormal returns for target shareholders

The left chart, Chart 9, displays the CAAR for friendly takeover attempts while the right chart, Chart 10, shows the CAAR for hostile takeover attempts. The event window stretches from 20 days prior the announcement date to 20 days after (-20, 20).



When looking at Table 4, the results support the hypothesis with statistical significance in four and two event windows, when it comes to friendly and hostile bids respectively. When it comes to all takeover bids, the hypothesis can only be accepted in two event windows. Thus, the results support the hypothesis for friendly takeovers, meaning that the difference in CAAR for friendly takeovers pre and post financial crisis is statistically different from zero. Thus, these results validate the findings of Servaes (1991) and Lang *et al.* (1989), who argue for target shareholder return being higher during low equity markets due to the theory of Tobin's Q. However, significance is only achieved in two of four event windows for hostile bids, where we in contrast to friendly takeover bids see a higher CAAR post financial crisis. This indicates that hostile bidders had a stronger willingness to pay higher premiums prior to the Lehman crash, which is in line with Shelton (2000).

Table 4

Cumulative abnormal returns of target shareholders by timing of bid

This table shows CARs over all the event windows used in this thesis for target shareholders by timing of bid (pre f.c., post f.c.), and divided by takeover type (friendly, hostile).

Event window	Friendly Takeovers		Hostile Takeovers		All Takeovers	
	Post f.c. - Pre f.c. (%)	t-stat for difference	Post f.c. - Pre f.c. (%)	t-stat for difference	Post f.c. - Pre f.c. (%)	t-stat for difference
(-20, 1)	4.74	1.65 *	-6.26	-1.11	3.17	1.21
(-10, 1)	2.32	0.74	-5.27	-0.96	1.20	0.43
(-3, 3)	4.12	1.41 *	-11.84	-2.33 **	1.75	0.66
(-1, 1)	6.24	2.32 **	-9.21	-1.81 **	3.97	1.62 *
(-1, 10)	5.36	1.81 **	-6.40	-1.08	3.60	1.35 *
(-1, 20)	3.80	1.24	-7.59	-1.12	2.08	0.74

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

The change in the CAAR can further be explained by changes in bid premiums for each group, as can be seen in Table 5. However, hostile bids have a fairly high discrepancy between the change in CAAR and bid premium, indicating that the share price has not reacted in line with the size of the bid premium.

Table 5

Bid premium by timing of bid

This table shows bid premiums over two event windows by timing of bid (pre f.c., post f.c.), and divided by takeover type (friendly, hostile).

Event window	Friendly Takeovers		Hostile Takeovers		All Takeovers	
	Post f.c. - Pre f.c. (%)	t-stat for difference	Post f.c. - Pre f.c. (%)	t-stat for difference	Post f.c. - Pre f.c. (%)	t-stat for difference
(-1, 0)	4.61	1.54 *	-17.91	-3.09 ***	1.25	0.45
Avg. 10 days	3.77	1.25	-17.45	-2.99 ***	0.62	0.22

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

After the Lehman crash in 2008, the market saw one of the worst financial meltdowns since the Great Depression of the 1930s. When looking at Nasdaq Stockholm, it took almost five years, until 2014, to recover to the same index levels as in the end of 2007. It is commonly believed that the time following the financial crisis of 2008 was characterised by a slow index development, compared to the flourishing years prior to the crisis. This would in turn lead to lower market-to-book values which is in line with the theory of Tobin's Q, that would support higher shareholder returns. Simultaneously, the time period post financial crisis has been characterised by a low interest environment and a strong index development,

which motivates the hubris theory and the theory of empire building. Looking at Nasdaq Stockholm, the period post financial crisis showcases an even stronger development than pre financial crisis, leading to the theories of empire building and hubris to have larger impact than the theory of Tobin's Q. In accordance with the reasons given above, in combination with statistically significant differences in target shareholder return, we therefore accept hypothesis two for friendly takeovers.

7.2. Hypothesis Three – Hostile Takeovers

The third hypothesis is whether hostile takeover bids generate higher returns than friendly. When looking at Table 6, we see that hostile takeovers generated approximately 5 percent higher CAAR pre financial crisis whilst hostile takeovers generated approximately 9 percent *lower* CAAR post financial crisis, with statistical significance in most of the event windows. When looking at the sample as a whole, we cannot see any differences that are statistically significant.

Table 6

Cumulative abnormal returns of target shareholders by takeover type

This table displays CAARs over all the event windows used in this thesis for target shareholders by takeover type (friendly, hostile), and divided by each subsample (pre f.c., post f.c.) and for the full dataset.

Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Hostile - Friendly(%)	t-stat for difference	Hostile - Friendly(%)	t-stat for difference	Hostile - Friendly(%)	t-stat for difference
(-20, 1)	1.33	0.36	-9.68	-1.89 **	-1.81	-0.59
(-10, 1)	2.84	0.67	-4.75	-1.01	0.70	0.21
(-3, 3)	6.94	1.81 **	-9.03	-2.03 **	2.46	0.78
(-1, 1)	5.50	1.49 *	-9.96	-2.26 **	1.10	0.36
(-1, 10)	5.72	1.34 *	-6.04	-1.19	2.35	0.69
(-1, 20)	6.15	1.33 *	-5.23	-0.90	2.93	0.79

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

These findings are partially in line with previous research. Goergen & Renneboog (2004) and Franks & Harris (1989) find that hostile bids on average generate 6 and 8 percent higher abnormal return than friendly bids on announcement date, respectively. This can be compared to the 6.94 percent higher return, in hostile bids, in the event window (-3, 3) pre financial crisis. However, no prior research providing a perspective of the post financial crisis period has been found. The statistically significant results for event windows post financial crisis must be questioned. Further, the theoretical framework does not support friendly bids leading

to higher target shareholder return in any instance. According to John Abrahamson, hostile bids should include higher bid premiums, driving the target shareholder return, all else being equal. This should be particularly true post financial crisis due to the higher costs of unsuccessful bids.

One explanation for the higher return for friendly bids post financial crisis could be due to the number of data points. The low number of hostile bids post financial crisis can possibly make the analysis inadequate.

In order to understand the underlying reasons for why the results in this study do not correlate with those of previous research the analysis has been extended. By testing for the difference between target shareholder return in hostile and friendly takeovers, conditional a *successful* outcome, one could argue that we should see a higher CAAR for hostile takeovers post financial crisis as a higher premium often is required by hostile bids in order to be successful. However, no statistical evidence has been found supporting this thought.*

Looking at takeover type in terms of hostile vs. friendly, statistical significance is achieved in some event windows during periods both pre and post financial crisis. As seen in the regression model in Table 2, there is no statistically significant correlation between target shareholder return and hostile takeovers. Hence, we conclude that the type of takeover is not a driver for target shareholder return. Hypotheses three cannot be accepted.

7.3. Hypothesis Four – Boom or Bust

The fourth hypothesis is whether takeovers made during bust periods generate higher returns than takeovers made during boom periods. As depicted in the Table 7, looking at differences in returns between boom and bust periods, target shareholder return is higher in bust periods compared to boom periods with statistical significance in four of six event windows pre financial crisis. For takeovers post financial crisis, no statistically significant difference can be concluded. As for the full dataset, it can be concluded that takeovers occurring in bust periods, on average generate approx. 3 to 5 percent higher target shareholder return in four of six event windows. This is in line with the hypothesis, that target shareholder return is higher in bust periods.

* See Table 10. Extension enclosed in appendix 1

Table 7

Cumulative abnormal returns of target shareholders by ‘boom or bust’

This table displays CAARs over all the event windows used in this thesis for target shareholders by ‘boom or bust’ (boom, bust), and divided by each subsample (pre f.c., post f.c.) and for the full dataset.

<i>Panel A: CAARs of target firms by means of Boom or Bust</i>						
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Boom (%)	t-stat	Boom (%)	t-stat	Boom (%)	t-stat
(-20, 1)	21.31	10.23 ***	28.29	10.79 ***	23.60	14.21 ***
(-10, 1)	18.64	7.99 ***	24.30	10.50 ***	20.50	11.71 ***
(-3, 3)	19.40	10.40 ***	22.49	8.67 ***	20.41	13.48 ***
(-1, 1)	18.25	9.97 ***	23.45	10.13 ***	19.96	13.71 ***
(-1, 10)	16.72	7.53 ***	22.23	9.15 ***	18.53	10.89 ***
(-1, 20)	16.24	7.02 ***	22.30	8.59 ***	18.23	10.22 ***
Observations	92		45		137	
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Bust (%)	t-stat	Bust (%)	t-stat	Bust (%)	t-stat
(-20, 1)	27.96	14.39 ***	24.21	6.49 ***	27.04	15.68 ***
(-10, 1)	27.48	10.52 ***	20.94	4.44 ***	25.89	11.29 ***
(-3, 3)	23.12	9.73 ***	22.86	5.48 ***	23.05	11.24 ***
(-1, 1)	21.48	9.47 ***	23.54	5.89 ***	21.98	11.20 ***
(-1, 10)	22.03	9.69 ***	22.79	5.25 ***	22.22	11.08 ***
(-1, 20)	25.51	11.07 ***	21.08	4.80 ***	24.43	11.97 ***
Observations	59		19		78	
<i>Panel B: Significance of differences in target CAARs between Boom or Bust</i>						
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Boom - Bust (%)	t-stat for difference	Boom - Bust (%)	t-stat for difference	Boom - Bust (%)	t-stat for difference
(-20, 1)	-6.65	-2.33 **	4.08	0.90	-3.44	-1.44 *
(-10, 1)	-8.84	-2.52 ***	3.36	0.64	-5.39	-1.87 **
(-3, 3)	-3.72	-1.23	-0.37	-0.07	-2.64	-1.04
(-1, 1)	-3.23	-1.11	-0.09	-0.02	-2.03	-0.83
(-1, 10)	-5.31	-1.67 **	-0.56	-0.11	-3.68	-1.40 *
(-1, 20)	-9.27	-2.84 ***	1.22	0.24	-6.20	-2.29 **
***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.						

As the stock market rises on average during boom periods the pre-decided bid price represents a lower premium to the current trading at time of announcement. As John Abrahamson said, “bid prices are often decided based on 90 days volume weighted average prices”. Thus, the current share price at announcement should not be as important. Therefore, when stock markets are on the rise, bid premiums become smaller, driving down the target shareholder returns, especially for the shorter event windows.

Furthermore, lower bid premiums in boom periods can be explained through the theory of Tobin’s Q. According to this theory, takeovers in boom periods should be characterised by

lower returns for target shareholders since boom periods imply higher market-to-book values for companies on the stock exchange. Following this reasoning, the higher market-to-book values affect bidders to offer lower bid premiums since the stock market overall is already highly valued.

Looking at takeover timing in terms of boom vs. bust, statistical significance is achieved in some event windows during periods both pre financial crisis and for the full dataset, this time unanimous in the way all differences from the t-tests suggests that target shareholder return is higher if the bid is placed during a bust periods. However, as seen in the regression model in Table 2, there is no statistically significant correlation between target shareholder return and boom/bust. Therefore we cannot validate that bust periods are a driver of target shareholder return and thus hypothesis four cannot be accepted.

7.4. Hypothesis Five – Payment Method

The fifth hypothesis is whether takeovers made using all-cash payments generate higher returns than takeovers using other payment methods. As depicted in the Table 8, looking at differences in returns between cash and other payment methods, target shareholder return is higher in takeovers with all-cash payment with statistical significance in all event windows and time periods.

Table 8

Cumulative abnormal returns of target shareholders by payment method

This table displays CAARs over all the event windows used in this thesis for target shareholders by payment method (cash, other), and divided by each subsample (pre f.c., post f.c.) and for the full dataset.

<i>Panel A: CAARs of target firms by means of payment method</i>						
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Cash (%)	t-stat	Cash (%)	t-stat	Cash (%)	t-stat
(-20, 1)	26.03	15.26 ***	30.19	11.69 ***	27.46	19.16 ***
(-10, 1)	27.43	12.63 ***	25.33	9.69 ***	26.71	15.89 ***
(-3, 3)	24.18	12.98 ***	24.66	9.23 ***	24.34	15.97 ***
(-1, 1)	21.67	12.86 ***	25.61	10.73 ***	23.03	16.68 ***
(-1, 10)	23.48	12.22 ***	24.60	9.74 ***	23.87	15.64 ***
(-1, 20)	24.17	12.40 ***	24.34	9.46 ***	24.23	15.63 ***
Observations	93		49		142	
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Other (%)	t-stat	Other (%)	t-stat	Other (%)	t-stat
(-20, 1)	20.50	7.48 ***	16.91	8.30 ***	19.77	8.91 ***
(-10, 1)	13.55	4.97 ***	16.67	6.36 ***	14.19	6.37 ***
(-3, 3)	15.52	6.94 ***	15.88	5.75 ***	15.59	8.39 ***
(-1, 1)	16.04	6.43 ***	16.53	5.75 ***	16.14	7.83 ***
(-1, 10)	11.29	4.27 ***	15.19	4.77 ***	12.09	5.50 ***
(-1, 20)	12.94	4.37 ***	14.10	3.62 ***	13.18	5.33 ***
Observations	58		15		73	
<i>Panel B: Significance of differences in target CAARs between types of payment method</i>						
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Cash - Other (%)	t-stat for difference	Cash - Other (%)	t-stat for difference	Cash - Other (%)	t-stat for difference
(-20, 1)	5.52	1.71 **	13.27	4.03 ***	7.70	2.91 ***
(-10, 1)	13.88	3.99 ***	8.65	2.34 **	12.51	4.48 ***
(-3, 3)	8.66	2.97 ***	8.78	2.29 **	8.75	3.64 ***
(-1, 1)	5.63	1.87 **	9.07	2.43 **	6.89	2.78 ***
(-1, 10)	12.19	3.73 ***	9.42	2.32 **	11.78	4.40 ***
(-1, 20)	11.23	3.17 ***	10.24	2.19 **	11.05	3.79 ***
***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.						

By testing for the difference in target shareholder return with regards to payment method used in the transaction, it is evident for all studied event windows and time periods, that all-cash transactions generate higher target shareholder return than other payment methods with approximately 10 percent for the full dataset. The results in Table 8 can be compared with those findings of Huang and Walking (1989) who conclude that the abnormal return for cash payment is 29 percent and somewhere between 14 to 23 percent for equity swaps or hybrids. Goergen and Renneboog (2004) further support this standpoint by providing statistically

significant evidence for cash payments generating substantially higher CAARs of approx. 4 to 20 percent, compared to equity swaps and hybrids.

From an accounting perspective, these results can be explained through the immediate tax obligation that arises from cash transactions while equity swaps and other payment methods include a deferred tax obligation. This is due to the fact that the target shareholders require to be compensated for this immediate tax obligation and thus, the bid premium must be higher, which drives the target shareholder return (Travlos, 1987).

Looking at takeover payment in terms of cash vs. other payment methods, statistical significance is achieved in all event windows both during pre and post financial crisis and for the full dataset, unanimous in the way all differences from the t-tests suggests that target shareholder return is higher if the bid is placed using cash as payment. As seen in the regression model in Table 2, there is a statistically significant correlation between target shareholder return and type payment method. Thus, all-cash payment is considered to be a driver of target shareholder return, and hypothesis five is accepted.

7.5. Hypothesis Six – Deal Outcome

The sixth hypothesis is whether successful takeovers generate higher returns than unsuccessful. As depicted in the Table 9, looking at differences in returns between successful and unsuccessful takeovers, target shareholder return is higher in successful takeovers with strong significance in most of the event windows post financial crisis and for the whole dataset.

Table 9

Cumulative abnormal returns of target shareholders by deal outcome

This table displays CAARs over all the event windows used in this thesis for target shareholders by deal outcome (successful, unsuccessful), and divided by each subsample (pre f.c., post f.c.) and for the full dataset.

<i>Panel A: CAARs of target firms by means of deal outcome</i>						
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Success. (%)	t-stat	Success. (%)	t-stat	Success. (%)	t-stat
(-20, 1)	24.37	14.42 ***	30.68	11.27 ***	26.09	18.02 ***
(-10, 1)	22.66	11.78 ***	24.90	9.07 ***	23.27	14.68 ***
(-3, 3)	21.09	12.40 ***	25.22	8.95 ***	22.22	15.23 ***
(-1, 1)	20.02	12.35 ***	26.62	10.93 ***	21.82	15.94 ***
(-1, 10)	19.78	10.87 ***	24.51	9.14 ***	21.07	13.89 ***
(-1, 20)	21.11	11.86 ***	23.83	8.63 ***	21.85	14.61 ***
Observations	120		45		165	

Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Unsuccs. (%)	t-stat	Unsuccs. (%)	t-stat	Unsuccs. (%)	t-stat
(-20, 1)	22.13	6.76 ***	18.54	7.80 ***	20.76	9.36 ***
(-10, 1)	19.94	4.44 ***	19.51	6.53 ***	19.78	6.63 ***
(-3, 3)	19.91	6.98 ***	16.39	6.04 ***	18.57	9.08 ***
(-1, 1)	17.52	5.85 ***	16.05	5.57 ***	16.96	7.93 ***
(-1, 10)	15.00	4.15 ***	17.40	5.66 ***	15.91	6.34 ***
(-1, 20)	15.02	3.25 ***	17.47	4.91 ***	15.95	5.07 ***
Observations	31		19		50	

<i>Panel B: Significance of differences in target CAARs between types of deal outcome</i>						
Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Success. - Unsuccs. (%)	t-stat for difference	Success. - Unsuccs. (%)	t-stat for difference	Success. - Unsuccs. (%)	t-stat for difference
(-20, 1)	2.24	0.61	12.14	3.36 ***	5.32	2.01 **
(-10, 1)	2.72	0.56	5.39	1.33 *	3.49	1.03
(-3, 3)	1.18	0.35	8.84	2.26 **	3.65	1.45 *
(-1, 1)	2.50	0.74	10.57	2.80 ***	4.86	1.92 **
(-1, 10)	4.78	1.18	7.11	1.74 **	5.16	1.76 **
(-1, 20)	6.09	1.23	6.36	1.41 *	5.90	1.69 **

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

The results are to a large extent in line with research of Dodd and Ruback (1977) who conclude that the abnormal return for successful takeovers (one month after announcement) is equal to 21 percent whilst the abnormal return for unsuccessful offers is equal to 19 percent. The t-stat for difference is greater in absolute terms in our analysis compared to the one of Dodd and Ruback.

Looking at takeover characteristics in terms of successfulness, statistical significance is achieved in 11 of 12 event windows during the period post financial crisis and for the full

dataset combined, unanimous in the way all differences from the t-tests suggests that target shareholder return is higher if the bid is successful.

However, as seen in Table 2, there is no statistically significant correlation between target shareholder return and bid outcome of takeovers. Thus, hypothesis six saying that successful bids should drive a higher CAAR cannot be accepted.

8. Conclusions

The intention with this thesis has been to examine various factors that drive the target shareholder return in public M&A on Nasdaq Stockholm. Previous research in the field of shareholder return has to a large extent been focused on the US, UK and European markets (e.g. Campa & Hernando, 2012). In this study we analyse the target shareholder return in takeover offers through different angles and perspectives. The data sample contains 215 takeover offers in total, divided in subgroups according to their characteristics as for example 182 friendly and 33 hostile takeovers, 165 successful and 50 unsuccessful takeovers and 137 bids placed during boom and 78 bids placed during bust periods.

The thesis further provides the reader with a comprehensive overview of the Swedish takeover market with regards to regulations, theories and descriptive statistics, e.g. the development of public takeovers over time, divided by takeover type, payment method and successfulness etcetera. Thereafter the different value drivers are tested for correlation with target shareholder return. The only statistically significant driver is all-cash payment for takeovers, where the correlation can be strengthened with over 99% confidence for all six event windows analysed. Furthermore, these different drivers are compared to their alternatives in order to answer the hypothesis and thus the question, what drives target shareholder return in public M&A on Nasdaq Stockholm.

The analysis investigates whether target shareholder return is changed over the different time periods, pre and post financial crisis. Here, we can conclude that this is the case for friendly takeovers and no conclusion can be made as for hostile takeovers or takeovers in general. The explanation for seeing a higher return post financial crisis could either be low market-to-book values or trend changes in managerial behaviour.

Further in the analysis, the takeover type is investigated for target shareholder return. We find statistical evidence for hostile takeovers generating a higher shareholder return in four of six event windows pre financial crisis and three of six event windows post financial crisis. Our analysis suggests that hostile takeovers generated circa 5 to 6 percent higher CAAR pre financial crisis, which is fairly in line with Goergen and Renneboog (2004), whilst hostile

takeovers post financial crisis generated approx. 9 to 10 percent *lower* CAAR, which contradicts most previous research. One explanation could be the low number of hostile data points on which our analysis is based. These results also contradicts the view of John Abrahamson, stating that hostile bids must include higher premiums to a greater extent than friendly. However, as no correlation can be seen between hostile and CAR, we cannot prove that hostile takeover bids drive a higher target shareholder return.

Further, we find statistical evidence that target shareholder return is higher in bust periods compared to boom periods (ca. 2 to 6 percent higher for the full dataset). We believe this is due to the underlying definition of boom periods, implying that bids based on volume weighted average prices, approx. 90 days prior the announcement date, leads to lower bid premiums, which in turn impacts the shareholder return negatively. The theory of Tobin's Q further supports the shareholder return being higher in bust periods due to lower market-to-book value, providing the bidder with more headroom in terms of bid premium. However, as no correlation can be found, no conclusion about bust periods generating a higher shareholder return can be drawn.

Lastly, shareholder return is tested with regards to payment method and deal outcome. The test for payment method unanimously concludes that cash offers generate a higher return for target shareholder than other payment methods, due to the direct tax obligation cash offers include which shareholders require compensation for. This is further strengthened by the regression model, suggesting that all-cash payment is a driver of target shareholder return. With regards to deal outcome, it is evident that successful takeovers have generated higher target shareholder returns than unsuccessful ones over the analysed period 2000 to 2016. Despite this, no correlation have been found and thus we cannot say that successful bids generate a higher CAAR.

In conclusion of the hypotheses, the following results have been achieved; the only significant driver for target shareholder return on Nasdaq Stockholm is cash payment for takeovers, here it is concluded that all-cash offers generate higher target shareholder return. No other hypotheses can be accepted with statistical significance. This study has explained and outlined different value drivers for target shareholder return on Nasdaq Stockholm, compared the results with those of other, larger markets. By adding the perspective of time periods pre and post financial crisis, and boom and bust, we provide a more nuanced view of stock market movements and its implications for the public M&A market. This thesis further put emphasis on the legal and regulatory aspects of public M&A as something that shapes the market and its foundation in a more direct manner than previous studies we have found.

9. Discussion

The following section will discuss the limitations with this study and what suggestions for further research that came to mind during the development of this thesis.

9.1. Limitations

The aim of this thesis has been to examine various drivers of target shareholder return on Nasdaq Stockholm and how these various aspects has changed over time. No source was sufficient in the data collection, meaning that the data collection required various sources. Unfortunately, we have not been able to provide any details in how the different sources differ in terms of information gathering, etc. The data collection further required some manual adjustments to be performed by us due to lack of information. In those cases we have searched the information ourselves through media but we cannot stress the fact enough that the information gathered here might be wrongful.

Furthermore, as for hostile bids, mandatory bids were excluded, meaning that the hostile population of data points became very small (33 in total). This small subgroup is clearly a limitation since outliers gain a much higher impact compared to the friendly subgroup, which comprised 182 takeovers.

9.2. Suggestions for Further Research

Possible areas for further academic research could include a comparison between takeovers in Sweden and other Nordic countries to see how drivers for target shareholder return differs in the Nordics. Furthermore, it would be interesting to put more emphasis on the pre and post announcement share performance, i.e. using event windows that omit the announcement date. In this study, the pre announcement event windows could be used to investigate for insider trading through information leakage, whilst event windows post announcement could be used to highlight the stock market's ability to predict takeover outcome by putting the post announcement return in relation to the bid premium.

A third suggestion for further research is to see how various types of takeover defence mechanisms impact target shareholder return. This could be done through a more qualitative approach for conducting the study, with the help of a number of industry experts, like John Abrahamson, to get a different perspective than that of data analysis, since the data points related to hostile takeovers are limited on Nasdaq Stockholm.

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11. Appendices

11.1. Appendix 1 – T-test: Takeover Types – Conditional Successful Deal Outcome

Table 10

Cumulative abnormal returns of target shareholders by takeover type, conditional successful outcome

This table displays CAARs over all the event windows used in this thesis for target shareholders by takeover type (friendly, hostile), and divided by each subsample (pre f.c., post f.c.) and for the full dataset.

Panel A: CAARs of target firms by means of takeover type

Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Hostile (%)	t-stat	Hostile (%)	t-stat	Hostile (%)	t-stat
(-20, 1)	24.17	4.94 ***	25.24	1.40	24.35	5.28 ***
(-10, 1)	25.43	4.53 ***	20.45	1.53	24.60	4.96 ***
(-3, 3)	25.41	3.95 ***	19.86	1.64	24.49	4.41 ***
(-1, 1)	23.49	4.55 ***	19.71	1.94	22.86	5.12 ***
(-1, 10)	24.25	3.70 ***	18.66	1.46	23.32	4.12 ***
(-1, 20)	24.07	3.92 ***	17.90	1.27	23.04	4.27 ***
Observations	10		2		12	

Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Friendly (%)	t-stat	Friendly (%)	t-stat	Friendly (%)	t-stat
(-20, 1)	24.38	13.59 ***	30.93	11.12 ***	26.22	17.23 ***
(-10, 1)	22.40	10.98 ***	25.11	8.85 ***	23.16	13.89 ***
(-3, 3)	20.70	11.72 ***	25.47	8.73 ***	22.04	14.54 ***
(-1, 1)	19.71	11.53 ***	26.94	10.71 ***	21.74	15.12 ***
(-1, 10)	19.37	10.20 ***	24.78	8.95 ***	20.89	13.23 ***
(-1, 20)	20.84	11.17 ***	24.11	8.47 ***	21.76	13.94 ***
Observations	110		43		153	

Panel B: Significance of differences in target CAARs between types of takeover

Event window	Pre f.c. (2000-2008)		Post f.c. (2009-2016)		Full dataset (2009-2016)	
	Friendly - Hostile (%)	t-stat for difference	Friendly - Hostile (%)	t-stat for difference	Friendly - Hostile (%)	t-stat for difference
(-20, 1)	0.21	0.04	5.70	0.31	1.87	0.39
(-10, 1)	-3.03	-0.51	4.66	0.34	-1.44	-0.28
(-3, 3)	-4.71	-0.71	5.61	0.45	-2.45	-0.43
(-1, 1)	-3.78	-0.70	7.23	0.69	-1.12	-0.24
(-1, 10)	-4.87	-0.72	6.12	0.47	-2.42	-0.41
(-1, 20)	-3.23	-0.50	6.21	0.43	-1.28	-0.23

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.