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Analysis of Market Efficiency Following Cancelled M&A Deals -From a Target's Perspective

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Abstract:

Over the last decade the numbers of mergers and acquisitions have increased, and only a small fraction of these are cancelled. In this thesis the market efficiency post an announced cancellation is analysed by performing an event-study based on 101 cancelled deals among the North American-, European-, Asian- and Australian markets. The study shows that the reactions are inefficient on all markets and a divergence between the North American and the combined European and Asian/Australian market is noticeable. Further, it is clear that there is an evident distinction depending on the actor of cancellation, however, no such distinction has been found depending on means of payment. An profitable investment strategy based on the results is drawn which indicates that one should short sell acquirer companies stocks after a proposed merger or acquisition is cancelled within the period of 25 days.

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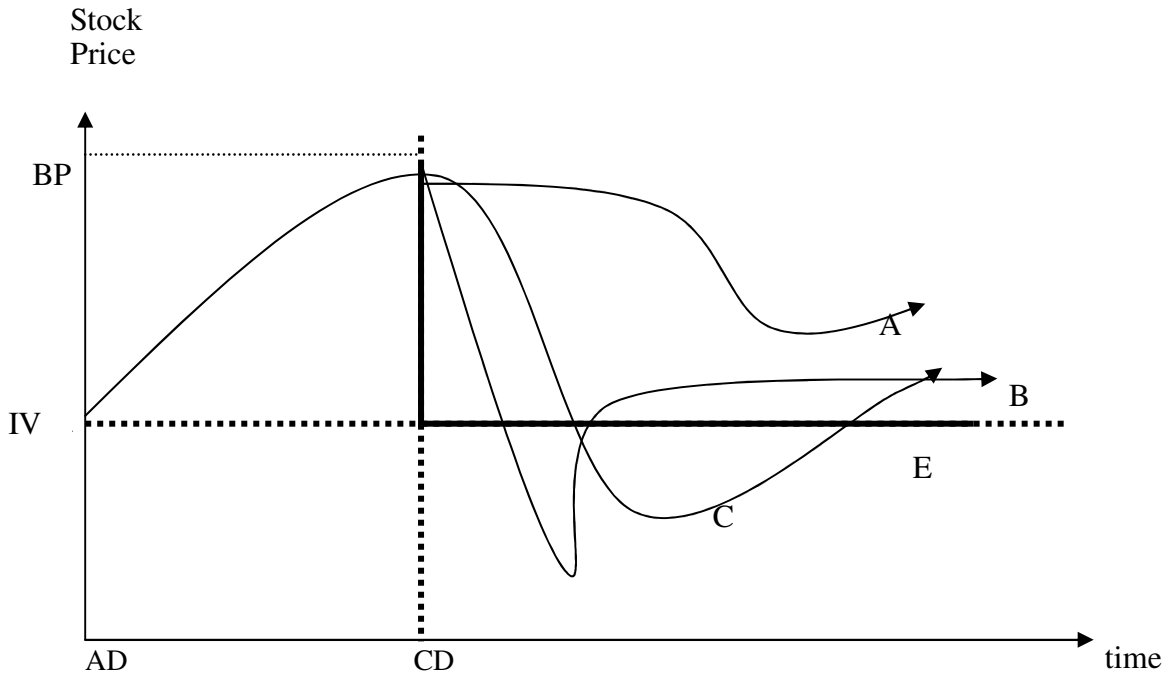
Table of Contents

1. Introduction

1.1 Short Introduction to the Topic

Over the last years there has been an up going trend for merger and acquisition (M&A) deals on markets world wide. A small fraction of these proposed deals are cancelled, due to disagreement or governmental regulations. This paper focus on the effects on target companies in cancelled M&A deals and examines the market reactions in such a setting. Figure 1.1.1 helps to visualize the scenario, by illustrating the target's stock price over time. After a proposed M or A is announced (AD) the target's stock price reaches up to a level close to the bidding price (BP). There will however be a marginal, due to uncertainty of realization; therefore the curve up to cancellation date (CD) in time is just one possible path. Formally, the price could be expressed as: $P_{it} = Prob * BidP_{it} + (1\text{-}Prob) * IntrinsicValue_i$, for any security- i at time- t where the probability indicates the probability of the deal to be completed.

Figure 1.1.1 Possible Stock Price Development paths for Target companies



Lots of research focuses on reactions and patterns up to the announcement date (AD). One example would be Franks, Broyles and Hecht (1977) who showed that the market anticipated mergers of companies listed on the London Stock Exchange at least three months prior to announcement. Another example would be Dodd's (1980) study of abnormal returns for a

period of 250 trading days before public announcement of a merger, where it is shown that target shareholders earn large abnormal returns due to the merger proposal. Such studies are, of course, of interest not last because many risk arbitrageurs speculate on this development path. However, from our perspective, wanting to contribute with something new, it has been more exciting to focus on the period after a cancellation is announced. Simply, what happens after the point CD in the figure above? If the market is efficient, it should follow pattern E (drawn with a thick line) and immediately return to the stock's intrinsic value after a cancellation is announced. But is the market efficient? Or does it follow any of the other patterns illustrated?[1]

When addressing the same question to an anonymous asset manager he mentioned the market's tendency of sometimes "being a bit slow" when reacting on new information. One professional at *SEB Asset Management* believed that the total time period of a delayed market response, due to public announcements, has shortened substantially over the years (Persson 2007). In his opinion, stock prices, at present market conditions very often return to intrinsic value within the day of an announcement. The former professional at *Danske Invest Aktiefond,* who prefers to be anonymous*,* discussed a window of three to five days for all information to flow between analysts which could be one possible explanation to delayed market reactions. The market's tendency of overreacting was also pointed out and as a conclusion none of the analysts seemed to be convinced about an immediate efficient market reaction.

With intuitive doubts about the market's ability of immediate efficiency, this report aims to reveal significance support for the assertion. The test of market efficiency will we approached from four angles, illustrated in figure 1.1.2. First one wish to test whether all markets independent of geographical region reacts in a similar pattern, then efficiency is analysed by grouping the sample per geographical location. Later the actor of cancellation as well as the type of payment's impact on the market's efficiency is tested. As a conclusion an investment strategy will be drawn, as a guideline for future trading in a similar situation and it will be clarified that there are profits to earn if relying on the strategy. In the following section, section 1.2, it will also be evident that there has been no earlier research found covering the identical scope of this thesis.

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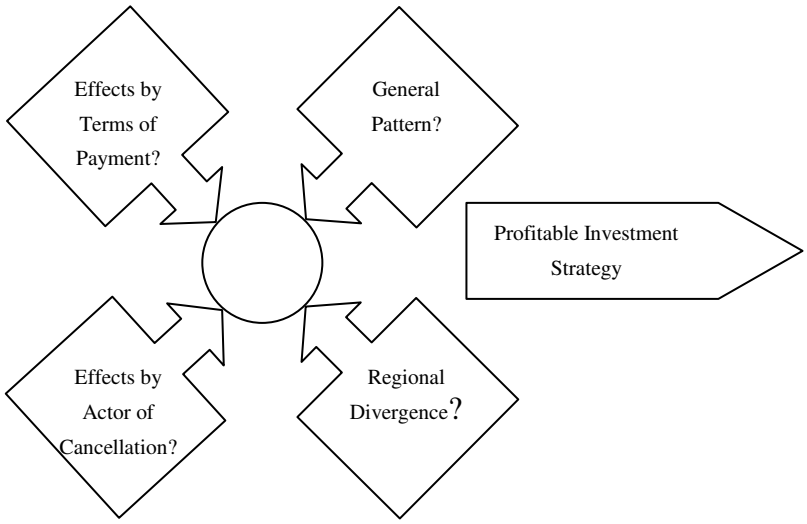
1 Please note that the patterns illustrated are only sketches with the aim to visualize the thoughts in the set-up phase of the study, and there are of course an infinitive number of possible paths

Figure 1.1.2 Four Angle Approach with Strategy Outcome



1.2 Previous Findings

1.2.1 Negative Announcements and Delayed Market Response

This study aims to evaluate the effects of M&A cancellations on the value of target companies to be acquired or part of a merge. Since there is commonly a premium offered for M&A targets this would imply that a cancellation is a negative announcement, i.e. a negative impact on the share price of target companies is expected. Several studies have been performed on negative announcements, and most commonly these have found a pattern of a delayed market response. Bernard & Thomas (1989) accepted a non-efficient-market hypotheses in the event of negative earnings announcements and found a delayed market response that continued up to 60 days post-announcement. Bartov, Lindahl & Ricks (1998), also accepted a non-efficient-market hypothesis in the event of write-down announcements. The announcements were partly anticipated, however, there was also a substantial delayed response from the market up to one year post-announcement. In both mentioned studies, substantial abnormal returns were found over the evaluated post-announcement period.

1.2.2 Cancelled M&A's From a Targets Perspective

Fabozzi, Ferri, Fabozzi and Tucker (1988) performed a study on a data set consisting of stock returns of US target firms in unsuccessful stock- and cash tender offers between 1977 and 1983. They defined an unsuccessful offer as one where the bidder withdrew before receiving all the shares it had sought. The conditions for being included in the final sample were as

following: a) the offer was not a “clean up” bid or one aimed at only partial ownership; b) the target firm remained independent at least for one year following the tender offer’s withdrawal; c) the firm received no other bids (successful or not) within the same year; and d) six years before the offer and in the twelve months after it had failed, the target did not issue or retire many shares or sell or call a large amount of debt within the period of six years prior the offer and one year after the failure. Very few offers met these stringent conditions and this led to a data set of only twenty-one failed offers and targets. The authors found all average abnormal returns of the period after withdrawal, up to 22 days post-event, are close to zero. This result strongly indicates that the public withdrawal permanently eliminates the offer’s impact, since no trace of the offer’s premium reappears at any time in the following year. Furthermore, an abnormal return of - 4.41 % was found on the day of the cancellation event. William Knapp (1990) performed an event analysis of nine proposed air carrier mergers in 1986, and found significant positive abnormal target returns of around 25% for the 20 days before and 10 days after merger announcement. The gain was experienced in the twenty days preceding cancellation. A delayed market reaction was detected after cancellation, as negative abnormal returns of - 22.8 %, were noted from the event day to ten days post-cancellation. However, these post-cancellation abnormal returns were found insignificant. J.F Pickering (1988) matched and analysed 50 cases of abandoned mergers in the UK occurring between the years of 1965 and 1975 against a sample of 50 actual mergers. The analysis covered data from three years before the bid to three years after the bid. It was found that companies involved in abandoned mergers recorded a stronger performance over the subsequent 1-3 years than those that made acquisitions. Target companies that resisted takeover bids showed a significant performance improvement.

1.2.3 Actor of Cancellation

Many scholars have focused on the effects of the actor of cancellation in M&A deals, and it has numerous of times been shown to have a significant impact on the market’s reaction. One of these studies was performed by Hviid and Pendergast (1993) who studied the effects of merger proposals on the expected profitability of the target, and they found that targets profitability increases when they themselves cancel/reject a bid, relative to the profitability before the merger was announced. The assumption causing the result is that a target firm has private information about its profitability which is not available to the bidding firm. Hence the response to a bid by the target reveals the competitiveness or profitability of the target. J.F Pickering’s (1988) findings of target companies that resist takeover bids show a significant

performance improvement implying that the market seems to understand the mechanism. Bradley, Desai and Kim (1983) have noted three possible reasons why the target firm's return would rise after rejecting a tender offer: a) the management of the target may be shaken from lethargy by the tender and may begin implementing a better operating policy; b) a rejection signals that future merger offers are likely; c) the merger rejection signals information to the market that the result is a revaluation of the target's stock. Davidsson (1989) performed a study of cancelled US mergers between the years 1976 to 1985, and found that target firms were revaluated upwards within 3 months in the case where target's themselves cancelled the merger or acquisition. Significant cumulative abnormal returns (CAR) of - 2.4 % were found over the period 5 days before the event and 5 days after, and under the same conditions during the period 90 days before to 90 days after, insignificant CAR of 10.3 % were found. In the event of bidder cancellation, the CAR for the period 90 days before to 90 days after resulted in CAR of -8.9 %, implying that an upward revaluation occurs solely in the case of target cancellations. There is, however, other studies performed that indicates the contradictory. One example is the study by Fabozzi et al. (1988) which does not support the belief that there should be different patterns depending on the cancelling party.

1.2.4 Terms of Payment

Sullivan, Jensen and Hudson (1994) studied a sample of 84 target and 123 acquirer firms participating in US deals over the period 1980 to 1986, and determined that the means of payment affects the abnormal return experience in cancelled M&A. Different event windows were studied such as the period in between M&A announcement and the cancellation date, and one day prior to cancellation to ten days post-cancellation (cancellation period). For cash offers a permanent positive price revaluation was found, however, stock offers resulted in prices returning to prior levels. All cash offers and no subsequent bid resulted in significant CAR of -10.1% over the cancellation period and all stock offers and no subsequent bid over the same event window resulted in significant CAR of -8.5%. The authors gave the following possible reasons for the impact depending on the means of payment: a) When a bidder offers cash it is signalling that it truly believes in the existence of synergies and is not willing to share these with the shareholders of the target; b) If the bidding firm has information that the target is undervalued in the market, it will offer cash to deter competing bids and to reduce the time available for rivals to analyse target stand-alone value. If value is less certain, stock is

offered to force target firm management into a decision based on their private information of the target firm stand-alone value.

1.2.5 Market Efficiency Divergence Across Markets

As Saudagaran and Biddle (1995) states most financial literature focuses on the North American security exchanges and these markets have therefore in comparison to other markets been extensively examined. Further, the researcher also argues that the American capital market is assumed to be relatively well organized, efficient and market participants are assumed to be well informed and their intense interaction is stated to eliminate any price dependencies. In a study of Garbade and Silber (1979) where the authors empirically tested the price relationship among securities traded on the New York and regional stock exchanges it is concluded that the regional functions as "satellites, but not pure satellites, of the New York Stock Exchange" (Garbade and Silber, 1979, p. 460) implying that there is an observable delayed market reaction on the regional markets, meaning that the efficiency is not immediate. One therefore has the reason to believe that there might be a difference between markets due to geographical location. Further, when Altman (1965) in the 60's discussed the integration of European capital markets he reported that "it has been argued that European capital markets are undeveloped and inefficient; that their facilities are inadequate to allow the absorption of substantial blocks of securities; and that their costs of mobilizing capital on a long-term basis are too high relative to those of the United States" (Altman, 1965, p.209) implying great divergence of efficiency between different geographical security markets. It is stated that many researchers at the time believed that by integrating the European market, a higher level of efficiency would be obtained. As a concluding remark Altman stated that it would take time until there would exist a fully integrated European market due to domestic regulations driven by national ideologies. The European market has evolved a lot since the 60's, hence it is reasonable to believe that earlier arguments that the European market was underdeveloped no longer holds and that the market now has reached a level closer to the United States. Sharma and Kennedy (1977) test the applicability of the random walk hypothesis to the stock market in England and compare this to the behavior to stock markets in the US. They found that US markets and most notably, the New York Stock Exchange (NYSE), conform to the random-walk model. However, the results reveal that the London stock market is less random than North American markets. Dryden (1970), who studied the London Financial Times -Actuaries 500 Stock Index, states "that considerably more dependence might exist in UK shares than those of US". In this sense, the London Stock

Exchange (LSE) is less efficient, i.e. a serial price dependency exists, which would imply that there is more reward for research efforts in England than in North America. Some of the mentioned alleged "inefficiency" of the LSE mentioned by Dryden are: a) the British unit trusts have shown a slight tendency to "beat" the market as represented by indexes, whereas their American counterparts have not; b) the LSE companies are subject to less investment research; c) the British companies divulge less information, less frequently, and after a far longer time-lag than North American companies; and d) that financial institutions differ from those in the US in organization and procedure. In the case of a less developed country the efficient market hypothesis may be, suspect, not only to the reasons mentioned in the case of Britain, but also on other grounds such as: i) in developing countries, capital markets have a difficulty in detecting and discriminating among investment opportunities; ii) compositions of outputs may respond sluggishly to changes in relative prices; iii) the capital markets are "fragmented" in terms of communication and information; and iv) investment preference is given to physical assets rather than financial assets.

1.3 Contribution

Previous research of negative earnings announcements suggest a pattern of market behaviour that should be of utmost importance in security investment activities. A delayed market response implies there are possibilities of earning abnormal returns. In the case of negative earnings announcements, a profitable trading strategy would entail short selling of the affected securities.

As previously mentioned, most related research in the area have focused on reactions and patterns up to the announcement date and there have been few studies found that can be of interest in addressing the impact on firm value in the event of cancelled M&A deals. The ones found evaluate time periods that incorporate both days prior to the cancellation event as well as days post-cancellation[2], and investment professionals that perform trading activities based on events, are more likely to be interested in studies that focus solely on post-event impact. Furthermore, most of the studies that have been encountered are dated back to the 70s and 80s, and are based exclusively on financial market data from US stock exchanges[3].

[2] See for example Fabozzi et al. (1988) and Knapp (1990)

[3] See for example Hviid and Pendergast (1993), Sullivan et al. (1994) and Davidsson (1989)

This study differs from the above mentioned studies considering that it evaluates sole post-event impact, and since it is based on a set of 101 deals, the results are significantly testable and should therefore not be useless. Further, since the data set consists of executed M&A's in the 21st century and of target companies on a range of markets, it has provided the opportunity to evaluate and compare the impact of the event on different markets that are due to present market behaviour. The study also evaluates differences depending on means of payment and the cancelling party. Therefore, with the above supportive arguments one may have the reason to believe that this study has the opportunity to contribute to existing science in the field.

1.4 Outline

In order to discover the market's reaction after an announced cancellation a traditional event-study will be performed. According to Campbell, Lo and MacKinlay "there is no unique structure" (Campbell et al., 1997) when performing an event-study. It has therefore been appealing to simply structure the thesis by using the author's seven proposed steps. First, the initial task will be described by setting up the hypothesis, and then a clarification of the selection criteria will be given. Later, in the methodology section, the calculation of abnormal returns will be explained as well as the estimation procedure and the definition of the event window. Finally, the testing procedure with empirical results will be presented and at last a conclusion is drawn where and an investment strategy is presented. However, prior to the seven steps a short introduction to the theoretical framework is presented in order to clarify underlying definitions and assumptions of the report.

2. Theoretical Framework

2.1 Definition of Efficient Markets

The efficient market theory is a cornerstone of modern financial theory and a wide range of academics support the theory, even though it is highly controversial[4]. Known scholars such as Burton G. Malkiel means that "a blindfolded chimpanzee throwing darts at the Wall Street Journal could select a portfolio that would do as well as the experts", (Malkiel, 1973).

[4] See also for example Grossman & Stiglitz (1980)

Among believers, three levels of market efficiency, depending on degree of information reflected in the securities price, are commonly discussed[5]. The levels are; weak-, semi-strong- and strong efficiency. The first classification level, weak market efficiency, states that future stock prices will follow a random walk[6] while the reasoning behind the strong market efficient level is that all information private or public is included in a stock's price. Since, the aim of this report is to study whether the market's reactions are efficient after a particular announcement it is necessary to assume that a stock's price reflects publicly available financial information. Thus, announced cancellations of M&A's are public information and it is troublesome to control for unpublished news, the semi-strong market efficiency classification of market efficiency is used in this thesis. In this level it is stated that, besides past prices, all other published information, e.g. financial press information is calculated into a current stock's share price. Therefore, prices will adjust immediately after new financial information is announced on a semi-strong efficient market. In terms of this report this implies that an efficient market would adjust a stock's price immediately after a cancelled M&A deal in announced.

2.2 Measuring the Effects of an Economic Event

Analysts are frequently asked to measure the effects of an economic event on a firm's value and at first; this might seem like a difficult task. However, a measure may easily be created by performing an event-study where it is assumed that given rational markets, the effects of an event should immediately be incorporated in security prices. The framework has been applied to a variety of events, both firm-specific as well as economy wide. Some examples include earnings announcements, announcements of macroeconomic variables and several studies have been conducted within the M&A field. Market efficiency assesses how quickly and correctly the market reacts to new information. Information usefulness studies assess the degree to which company returns react to the release of a particular bit of news.

[5] See for example Brealey and Myers (2005)

[6] The theory that stock price changes have the same distribution and are independent of each other, so the past movement or trend of a stock price or market cannot be used to predict its future movement.

3. Hypothesis

The main purpose of this paper is to investigate the notion that markets react in an inefficient way in post-cancel M&A deal settings and to formalize these ideas, hypothesis, which are statistically testable, are formed.

First, the main hypothesis is that the market does not react efficient in a post-cancellation setting across all geographical regions, formally:

$H_{1,0}$: *The market reacts efficiently upon cancelled mergers and acquisitions*
$H_{1,1}$: *The market does not react efficiently upon cancelled mergers and acquisitions*

Second, according to research by for example Sharma and Kennedy (1977) and Dryden (1970) there is a reason to believe that the North American market reacts more efficiently than European, Asian and Australian markets, and therefore the second hypothesis are stated as:

$H_{2,0}$: *There is no difference in market effeciency between the North American markets and the European−, Asian − and Australian markets upon cancelled mergers or acquisitions*
$H_{2,1}$: *There is a difference in market effeciency between the North American markets and the European−, Asian − and Australian markets upon cancelled mergers or acquisitions*

Third, considering findings presented by scholars such as Bradley et al. (1983) and Hviid, Pendergast (1993) one may foresee that there is dissimilarity in market efficiency related to the actor of cancellation. The third hypothesis will test this assumption.

$H_{3,0}$: *Market efficiency is independent of actor of cancellation upon cancelled mergers or acquisitions*
$H_{3,1}$: *Market efficiency is dependent of actor of cancellation upon cancelled mergers or acquisitions*

Fourth, according to Sullivan et al. (1994) the means of payment could have an impact on the market's level of efficiency after a cancelled merger or acquisition deal, and the hypothesis to test is therefore:

$H_{4,0}$: *Market efficiency is independent of means of payment upon cancelled mergers or acquisitions*
$H_{4,1}$: *Market efficiency is dependent of means of payment upon cancelled mergers or acquisitions*

4. Data

Since the event-study, to a great extent, relies on the underlying data-set it has been a crucial step of the journey trying to ensure that the data manages to deliver a representative picture of reality and that data-snooping is avoided. The reasoning behind selected data as well as a short descriptive analysis of the sample will be presented in the following section.

4.1 Selection Criteria

To be included in the sample target company needed to be listed on an exchange in Europe, Asia, Australia or North America. It has been necessary to analyze deals across the above mentioned markets due to the fact that only a minor proportion are cancelled and this simply enables to enlarge the sample. Further, the selected exchange markets were mainly based on stability, in the sense of liquidity, operation sustainability and accessibility of historical financial data. Fast growing markets such as India has therefore been excluded. Also, related event-studies including data from the 70's up to the 90's have been made[7] but no reports have been found that analyses market efficiency, in event of cancelled M&A, in the 21st century. Therefore, in order to contribute with an up to date analysis this report is based on data from the years between 2000 and 2006. The merger sample was identified by using the database Zephyr, provided by Bureau van Dijk Electronic Publishing. Stock price data was later collected from the database DataStream provided by Thomson, both databases were accessible through Stockholm School of Economics. Further, comparison has been made between opening prices to adjusted closing prices to reflect market reactions during a particular day. By using adjusted closing price, all after closing announcements, such as dividends, are taken into account which else would have affected the stock price and falsified the results. Later, all mergers with diffuse cancellation dates, as well as mergers where the deal was cancelled because of the presence of white-knights[8] or other bids (successful or continuous) within a time frame of forty-five days post-cancellation were omitted. Furthermore, deals where dividends were paid out within the observation period were excluded. Notice that due to lack of financial support and thereby access to a broad set of resources of historical financial data it was impossible to include 97 cancelled deals, with

[7] See for example Fabozzi et al. (1988) and Knapp (1990)

[8] One defense strategy a target company may take into action is to find a company that makes a friendly takeover offer; these companies are often called "white knights", since they rescue the target company from a hostile takeover.

listed targets among all regions described above, to view all excluded deals see appendix table B where deals marked with "n/a" indicates that the observation was omitted due to limited access to data and deals marked with "other" indicated exclusion due to other reasons mentioned above. The final sample includes 101 cancelled mergers and acquisitions. More detailed information about all chosen deals is listed in appendix table A.

4.2 Short Descriptive Data Analysis

The data-set is now briefly introduced by providing a short descriptive summary; all figures are shown in table 4.2.1 below. As predicted, since built on cooperative means, only a small fraction (12 %) of the total number of cancelled deals was proposed mergers. The terms of payment were most commonly clear stock or cash deals, and only a minority used a mixture of the two. Also, it is clear that most cancellations were results of involved parties' actions and not due to regulations, such as competition laws or the EC Merger Regulations for M&A transactions with effects in the European Union or the European Economic Area. Notice that it is rare that a cancellation is based on a mutual decision, only 18 % of the cancellations are mutual and 17% of those were proposed mergers. Finally, it is clear that there are no remarkable differences between the markets, since they all follow the same tendencies.

Table 4.2.1 Data Description

Region	*Total Number of Deals*	*Terms of Payment*			*Actor of Cancellation*				*Deal Type*	
		Cash	Stock	Both	Target	Acq.	Both	Gov.	M	A
North America	56	20	27	9	21	23	10	2	5	51
Europe	30	12	16	2	9	13	5	3	5	25
Asia/Australia	15	5	7	3	7	4	3	1	1	14
Total	101	37	50	14	37	40	18	6	11	90

5. Methodology

This section provides a guide through the set up and methodology used in the event-study. Definitions and techniques will be presented, and it was chosen to be done in a simplified manner in order to make the reading easy to grasp regardless of previous knowledge in the field.

5.1 Performing the Event-Study

In this section explanations of the methodology when performing the event-study is presented and it starts by defining the calculations for abnormal- and expected returns, later the definition of the event window is discussed.

5.1.1 Abnormal Returns

Definition of Abnormal Returns

Event-Studies has perhaps due to its general applicability been used in a wide range of fields[9] and as previously mentioned, all analyzes abnormal returns in order to ascertain the event's impact (Campbell et al., 1997). In this thesis abnormal returns for security-i at time-t (AR_{it}) is defined as actual return ($ActualR_{it}$) minus expected return ($ExpR_{it}$), formally:

$$AR_{it} = ActualR_{it} - ExpR_{it}$$

Definition of Sample Cumulative Abnormal Returns

Individual portfolios are aggregated in to portfolios based on time periods relative to the event and not calendar time. The average abnormal return ($AR_{avg,t}$) for all securities in the sample, at time-t is calculated as the sum of the securities abnormal returns (AR_{it}) at time-t divided by the number of securities (N) in the sample. The sample cumulative average abnormal return, CAR_s, is measured as the sum of the average abnormal return over a specific time period measured relative to the event date, formally:

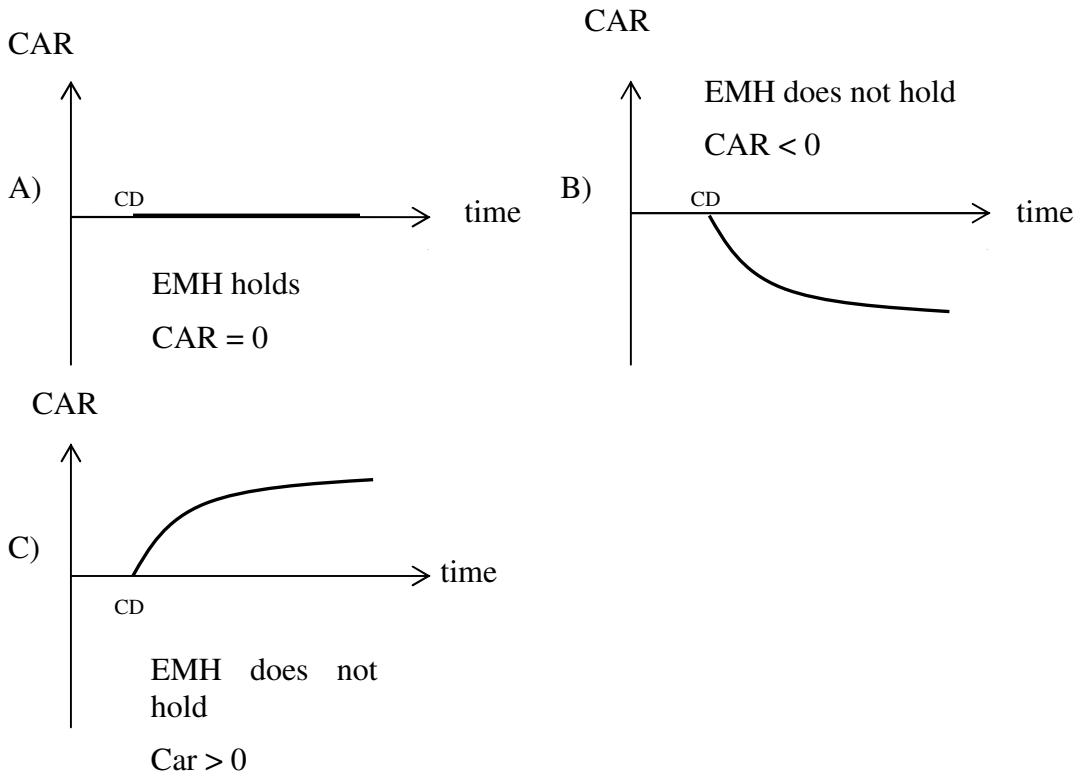
$$CAR_s = \sum_{t=1}^{N} AR_{Avg,t}$$

Implication of Abnormal Returns

If the efficient market hypothesis (EMH) holds then there will be no abnormal return after an announced cancellation (CD), however if the market is inefficient there will be positive or negative abnormal returns. Implying that there are three possible scenarios depending on efficiency which are illustrated in graph 5.1.1.1 below. Scenario A illustrates market efficiency, scenario B an overvaluation and scenario C an undervaluation of the security. When analyzing abnormal returns and the event-window is longer than one day it is suitable to use cumulative abnormal returns (CAR) instead of simple abnormal returns.

[9] See for example Blacconiere and Northcutt (1997) and Schwert (1981)

Figure 5.1.1.1 Possible Scenarios for CAR



5.1.2 Expected Returns

Expected returns may be estimated by using economical- or statistical models but please note that the statistical models does not take any economical aspects into consideration and one may therefore instinctively propose that the economical models are preferred but as Brown and Warner (Brown and Warner 1980) concludes a statistical model such as the *constant mean return model* is just as applicable as more sophisticated models (here referring to economical models) and are therefore not seldom used in event-studies[10]. However, if having the opportunity to chose there exist slightly better alternatives as Dyckman et al. (1984) concludes after running multiple comparison tests and finding that the mean-adjusted returns model did not work as well as *the market model,* which is yet a statistical model.

Examples of two economical models that are, or at least have been, frequently used for calculating expected returns in event-studies are the *Capital Asset Pricing Model (CAPM)* and *Fama and French Three Factor Model (FF).* However, since the market model restrictions

[10] See for example Ghosh and Lee (2000)

imposed by the CAPM are questionable most event-studies after the 70's (MacKinlay 2007) [11], have excluded the use of the model and since avoidance of prediction errors are prioritized even in this study no further use of the model will be performed. The FF model has on the contradictory the capacity of being a reasonable proxy for future returns, but due to time constraints and thereby limited possibilities of calculating the three factors for markets outside the Unites States, the FF has been omitted. Yet an alternative to the above mentioned estimation models, and this is a hint for future research, is to calculate expected returns with a portfolio of stocks with similar risks since this contributes with a proxy as identical as possible to the stock of particular interest which intuitively seems to be the ultimate tool of expected returns.

However, for the purpose of this study, and as indicated above, *the market model* has been assumed to be the most appropriate model for expecting future returns. Formally the model is defined as:

$$R_{it} = \alpha_i + \beta_{it} R_{mf} + \varepsilon_{it} \quad E(\varepsilon_{it}) = 0 \quad Var(\varepsilon_{it}) = \sigma^2_{\varepsilon_t}$$

Where R_{it} is the individual security return at time t, and R_{mt} is the market portfolios return at time t. For each security-i the market portfolio has been approximated by the most comprehensive stock index in the country where the stock is listed. The different stock indecies that have been used can be seen in table C, in appendix. α_i is the intercept of the individual security β-regressions based on daily stock return observations one year prior to the proposed M&A deal announcement.

Regression models are based on a number of statistical assumptions. Specifically the models assume that the residuals are; normally distributed with a mean of zero, are not serially correlated, have a constant variance, and are not correlated with the explanatory variables. Further, in finance where several different regressions may be run for different securities, it is also assumed that there is no correlation between residuals for the different firms. In business studies, there is reason to be concerned about each of these assumptions. Security returns are not normally distributed, a problem that is worse in the case of daily returns, and there is evidence of slight serial correlation among security returns. There is evidence that the residuals are correlated with values of the independent variable, commonly the return of the market portfolio. When a study involves calendar clustering, there is evidence of

[11] See also for example Armitage (1995)

contemporaneous covariance between residuals of different firms. Fortunately, the event-study design appears to be robust to most of these problems, or techniques have been developed to handle them. One of the more troubling problems in event-studies are calendar clustering which refers to the events occurring at or near the same time, and industry clustering, referring to events concentrated in the same industry. One solution to the calendar clustering is to apply estimation procedures based on joint generalized least squares, however Malatesta (1986) reports that "there is no evidence that joint GLS provides a practical payoff in the typical event-study context." As this data set contains security return series are spread over a six year period and securities are represented from several industries, we have chosen not to take additional actions against clustering issues.

5.1.3 Definition of the Event Window

It is of utmost importance to determine when an event takes place. Timing of an event might seem obvious. It is not. The issue is not when an event occurred, but when the market, that is, its most interested and well informed segment, could have reasonably anticipated the news. Misidentification of an event date can obscure an issue. Early merger studies used the date of a merger and found no significant evidence of shareholder return effects[12]. However, when Asquith, Brunner and Mullins (1983) used the date on which the *intent* to merge was announced, they found significant ARs and CARs. Even though event date uncertainty will frequently be a problem, the event-study design is still effective. Dyckman et al. (1984) found that testing accumulated excess returns over a slightly longer period allows a researcher to detect events without precisely pinpointing the timing of the event. In this study we have chosen to define the event date (t_0) solely as the one cancellation date, which seems proper since all M&A's with diffuse cancellation dates have been omitted.

Subsequent to the choice of t_0, one or several event windows should be selected, see figure 5.1.3.1, which are chosen to match the intent of the study. The purpose of this thesis is first and foremost to capture market inefficiency that can be of use for profitable trading strategies. In order to obtain a sample that is large enough, the time frame of subsequent bids on targets have been limited to 45 days post-cancellation. An upper limit of the event window, t_2, to 30 days post-cancellation, is therefore chosen in order to make sure that there is no effect on returns due to possible subsequent offers. There is also an interest in analyzing the presence of information leakage prior to cancellation, and an incorporated lower limit of the event

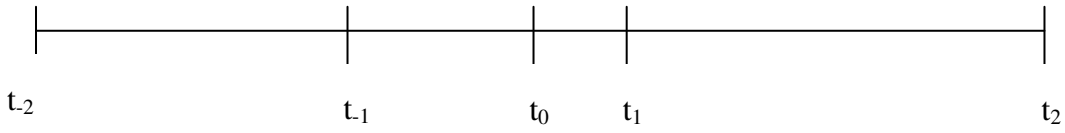
[12] See for example Mandelker, 1974

window, t_{-1}, to ten days prior to cancellation has been made. Finally there was also an interest in measuring the short term effect of the event and thus a second upper limit of, t_1, has been chosen five days post-cancellation. To summarize, the following event windows (EW) have been constructed in order to measure different aspects of the cancellation event:

a) $-10 \leq$ EW ≤ -1; b) EW = 0; c) $+1 \leq$ EW $\leq +5$; d) $+1 \leq$ EW $\leq +30$

An estimation period of one year prior to the merger announcement has been chosen, starting at t_{-2}.

Figure 5.1.3.1 The Composition of the Event Window



5.1.4 Test of Significance

Inference about the cumulative abnormal returns can be drawn using:

$CAR_s(\tau_1, \tau_2)$, with the distribution $N(0, \bar{\sigma}^2(\tau_1, \tau_2))$

where CAR_s is the sample cumulative abnormal returns for a certain event window ranging from τ_1 to τ_2, and $\bar{\sigma}^2(\tau_1, \tau_2)$ is the variance for CAR_s, however, since $\bar{\sigma}^2(\tau_1, \tau_2)$ is unknown, one may instead use the definition:

$$\hat{\bar{\sigma}}^2(\tau_1, \tau_2) = \frac{1}{N^2} \sum_{i=1}^{N} \hat{\sigma}_i^2(\tau_1, \tau_2)$$

As a consistent estimator, where N is the number of securities in the sample and $\hat{\sigma}_i^2(\tau_1, \tau_2)$ is approximated with the variance from β_i – regressions. The following hypotheses are then tested for inference:

H_0: The event has no impact on the sample returns and there are no abnormal returns

H_1: The event has impact on the sample returns and there are abnormal returns

The test statistic J_1 is calculated as follows:

$$J_1 = \frac{CAR_s(\tau_1, \tau_2)}{\left[\hat{\bar{\sigma}}^2(\tau_1, \tau_2)\right]^{1/2}} \qquad \sim N(0,1)$$

If there is no abnormal return, then this test statistic follows a t-distribution with L1-2 degrees of freedom. An absolute value of the test statistic |J1| > 1.96 indicates that the cumulative

abnormal return is significantly different from zero at the 5% level. The value of 1.96 comes from the standard normal distribution with a mean of zero and a standard deviation of 1.

The hypotheses $H_{2,1}$, $H_{3,1}$ and $H_{4,1}$ state that there is a difference in CAR between the measured samples. In order for these hypotheses to be accepted it is required that: a) the size of CAR differs between the samples; b) the sample CAR's are significant in accordance with the J_1-test; c) the difference between the sample CAR's is significantly different form zero. The two first conditions have been dealt with, however, the third condition needs additional explanation. The expected difference between measured CAR of two samples is denoted ($CAR_1 - CAR_2$). A 95% confidence interval for the expected difference can be calculated using:

$$(CAR_1 - CAR_2) \pm t\sqrt{s_p(\frac{1}{n_1} + \frac{1}{n})} \quad ; \quad s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

where t is the value from a t-distribution determined by $n_1 + n_2 - 2$ degrees of freedom and a 5 % level of significance. n_1 and n_2 are the number of observations for the two samples, and s_1 and s_2 the variances. The following hypotheses are then tested for inference:

H_0: There are no differences between the tested samples

H_1: There are differences between the tested samples

If zero is not included within the calculated confidence interval then H_0 is rejected and there are significant differences between the measured CAR's at the 5 % level of significance.

6. Empirical Findings

In this section, the empirical findings are presented. First, the results from the hypothesis are presented graphically. Second, the significance of the findings is discussed and the robustness is tested.

6.1 Graphical Interpretation

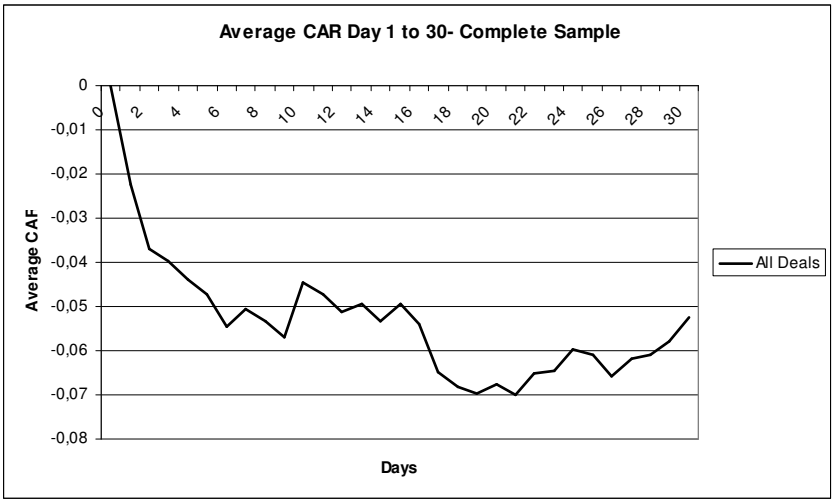
A first step of analyzing the findings is to visualize the results, in the section below a graph for each hypothesis will be drawn and a general comment will be stated. Although, no final conclusions will be drawn until the statistical tests are performed, see section 6.1.2.

$H_{1,0}$: *The market reacts efficiently upon cancelled mergers and acquisitions*

$H_{1,1}$: *The market does not react efficiently upon cancelled mergers and acquisitions*

In figure 6.1.1 below the average CAR for all observations is drawn. The result shows a clear negative trend for the CAR development and a pattern similar to scenario B in figure 5.1.1.1 is indicated, implying that the market is inefficient and that there is a delayed market response. Although a final rejection of the main null hypothesis may not be drawn before the statistical analysis in performed.

6.1.1 Average CAR Day 1 to 30 –All Observations

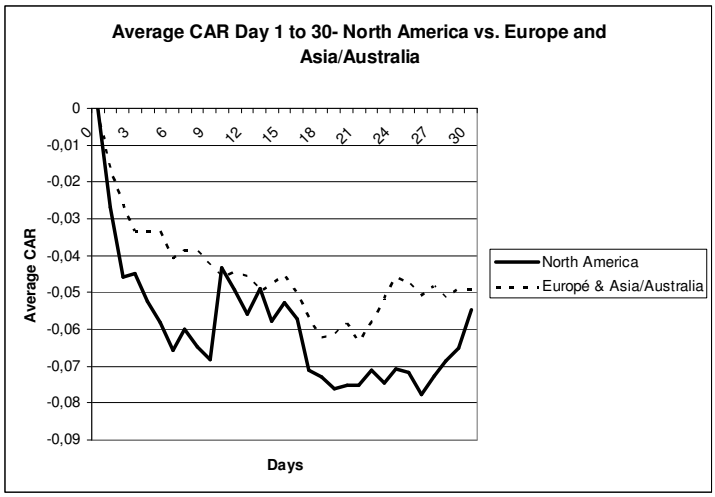


$H_{2,0}$: *There is no difference in market effeciency between the North American markets and the European–, Asian – and Australian markets upon cancelled mergers or acquisitions*

$H_{2,1}$: *There is a difference in market effeciency between the North American markets and the European–, Asian – and Australian markets upon cancelled mergers or acquisitions*

Considering the graphical results for the second hypothesis, that the North American market is as efficient as the European and Asian/Australian market the results are slightly surprising since they indicate that none of the markets are efficient but as figure 6.1.2 indicates the North American market reacts weaker compared to the European and Asia/Australian markets where a slightly lower negative trend for CAR is observed. However, the results are not striking but if being significant, they may disprove earlier indications by scholars as Dryden (1970), arguing that non-American markets are *a lot* less efficient than the American market.

Figure 6.1.2 Average CAR Day 1 to 30- North America vs. Europe and Asia/Australia

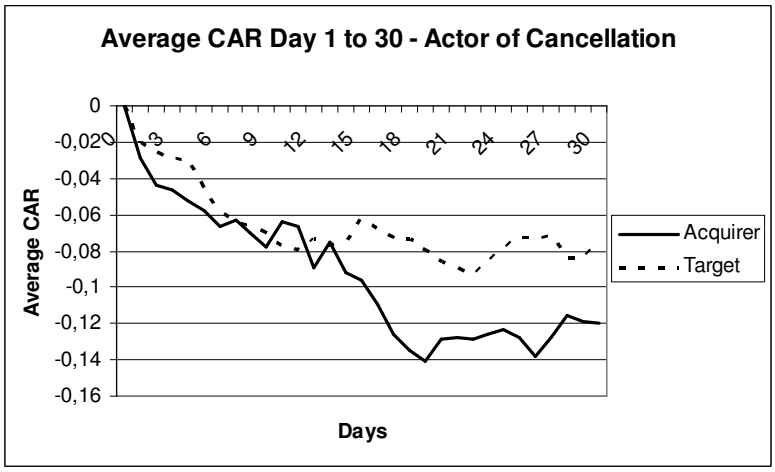


$H_{3,0}$: *Market efficiency is independent of actor of cancellation upon cancelled mergers or acquisitions*

$H_{3,1}$: *Market efficiency is dependent of actor of cancellation upon cancelled mergers or acquisitions*

The third hypothesis aims to test whether the actor of cancellation effects the market's efficiency and according to the graphical overview it seems like the market efficiency is absent in both scenarios implying that there is a delayed market response. One may however observe a divergence in the CAR trends around three working weeks after the cancellation announcement where deals cancelled by the acquirer seems to generate less abnormal returns compared to securities where the target itself was in charge of the cancellation.

Figure 6.1.4Average CAR Day 0 to 30- Different Actors of Cancellation

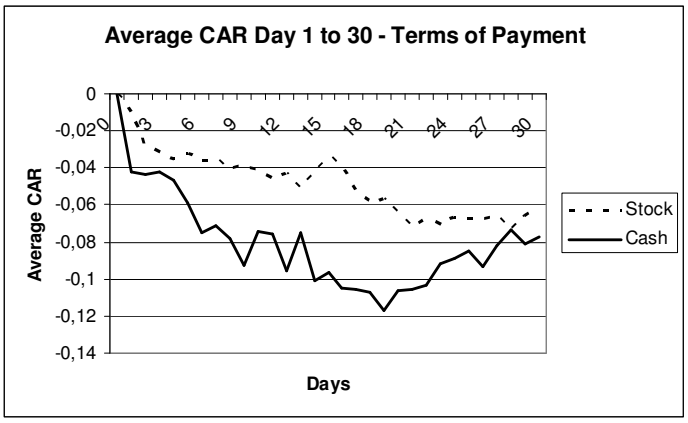


$H_{4,0}$: *Market efficiency is independent of means of payment upon cancelled mergers or acquisitions*

$H_{4,1}$: *Market efficiency is dependent of means of payment upon cancelled mergers or acquisitions*

When analyzing the effects of different types of payment it seems evident that it exists a difference implying that cancelled stock offerings generates lower abnormal returns up to 30 working days after an announced cancellation, where at this point the terms of payment no longer seems to matter in a great extent.

Figure 6.1.5 Average CAR Day 1 to 30- Different Terms of Payment



6.2 Significance

Table 6.2.1 shows the test results for the different samples that have been evaluated. There is a clear tendency of negative cumulative abnormal returns during the ten day prior to the cancellation event. This implies that there is some form of information leakage present that makes the market react prior the public announcement of the cancellation. The size of the pre-event impact varies between the different samples. CAR's range between – 3 to – 5 percent. Particularly interesting to note are CAR of - 5 %, significant at the 15 % level, for deals where the targets cancel compared to insignificant CAR of - 1 % when deals are cancelled by the acquirers. For the sample of all deals there is CAR of - 4 %, significant at the 10 % level of significance, for the ten day period prior to the event.

All CAR's at the day of the cancellation event are found to be insignificant at the 5 % level. One may believe that the main reason for this is the wide spread of abnormal returns within the sample. However, it is interesting to note that CAR's are not that large, ranging from – 2 to – 5 %. This leads to a reason to believe that the events are, to a degree, anticipated in advance by the market. Furthermore, deals where the acquirer cancels show close to twice the size of CAR in comparison to most of the other samples, and this is in line with the results from the pre-cancellation CAR that imply a low level of anticipation when these deals are concerned. For one of the samples, deals that are cancelled by targets, we can measure a positive CAR of 4 %, significant at the 11 % level, and the reason might be that the market is anticipating a subsequent bid. For the sample of all deals there is insignificant CAR of - 2 % on the day of the event.

Looking at the results related to the five day post-cancellation event window show mostly insignificant CAR between – 3 and – 6 %. The highest level of negative CAR is found for deals where the means of payment is cash. For the sample of all deals there is CAR of – 5 %, significant at the 10 % level, for the five day post-cancellation period.

The results related to the event window of the thirty days post-cancellation show highly significant CAR for all samples. The CAR's range between – 4 and – 12 %. The highest level of significant CAR is found for deals where the acquirer is the cancelling party. For the sample of all deals there is significant CAR of – 5 % for the thirty day post-cancellation period. It can further be seen that, on average, 90 % of the post-event CAR's for the different samples, are obtained during the five day post-cancellation period. However, more than 50 % of the CAR's are obtained between day six and thirty, in the case of acquirer's cancelling.

To summarize, a high level of significance has been obtained in our study. The results for the sample of all deals are highly significant for all tested pre- and post event periods, and this is also the case for all sample results regarding the thirty days post-cancellation period. The findings clearly show tendencies of both substantial anticipation by the market and a delayed response in setting post-cancellation equilibrium prices for securities that are affected. Hence the graphical analysis in section 6.1 and the statistical tests give similar results concerning market efficiency.

Table 6.2.1 Cumulative Abnormal Returns – Market Model

		Market Model							
		-10 to -1		0		1 to 5		1 to 30	
Selection	N	CAR	p-value	CAR	p-value	CAR	p-value	CAR	p-value
All	101	- 0.0377	0.0883*	- 0.0238	0.8890	- 0.0483	0.0890*	- 0.0523	0.0119**
Acquirer cancellation	40	- 0.0062	0.8433	- 0.0576	0.6550	- 0.0549	0.1670	- 0.1187	0.0005**
Target cancellation	37	- 0.0491	0.1718	0.0397	0.1097	- 0.0463	0.2520	- 0.0749	0.0299**
Stock deal	*50*	- 0.0295	0.2959	- 0.0338	0.7131	- 0.0319	0.3126	- 0.0634	0.0231**
Cash deal	*37*	- 0.0471	0.1875	- 0.0262	0.8123	- 0.0624	0.1521	- 0.0773	0.0251**
US targets	*56*	- 0.0479	0.1302	- 0.0224	0.1335	- 0.0581	0.1335	- 0.0547	0.0643*
EU and Asian/Australian targets	*45*	- 0.0278	0.3073	- 0.0230	0.7708	- 0.0336	0.2802	- 0.0494	0.0634*

** The significance level of 10% is obtained*

*** The significance level of 5% is obtained*

6.3 Robustness

6.3.1 Alternative Expected Return Models

As discussed in section 5.1.2 there are a variety of methods available for estimating expected returns. One additional statistical model, the *constant mean return model,* is therefore used to predict the expected returns when testing for robustness. This model is often used in event-studies[13], and simply assumes that future returns will equal the mean of earlier returns, formally:

$$R_{it} = \mu_i + \varepsilon_{it} \qquad E(\varepsilon_{it}) = 0 \qquad Var(\varepsilon_{it}) = \sigma^2_{\varepsilon_{it}}$$

Where R_{it} is the period t's return for security i, μ_i the mean return calculated one year prior to the merger announcement, and ε_{it} is the disturbance term with zero expectation and the variance stated above.

Tables 6.3.1.1 and 6.3.1.2 show the robustness test results for the different samples that have been evaluated. There is a higher level of significance among the sample tests in comparison to those resulting from applying the market model. By applying the mean model, significant results are obtained for all event windows except for the day of cancellation. The overall trends and signs of the CAR's are more or less identical between the two applications. A noticeable divergence can be seen between the samples based on geographical orientation. By applying the market model, CAR of - 5.5 % are obtained for the sample of North American targets during the 30-day-post-cancellation period, in comparison to - 3.8 % when applying the mean model. Furthermore, for the same period, CAR of – 5.0 % are obtained for the

[13] See for example Ghosh and Lee (2000)

sample of EU and Asian/Australian targets when using the market model, in comparison to CAR of – 7.2 % when using the mean model.

After conducting a test of robustness using an alternative method of calculating expected returns, the prior findings of negative cumulative abnormal returns during the ten day prior to the cancellation event can still be acknowledged, as well as a delayed market response. Furthermore differences in market efficiency are noted depending on actor of cancellation, type of payment and geographical orientation. It can also be stated that a high level of significance has been obtained, regarding the pre-cancellation period and in particular the thirty day post-cancellation period.

Table 6.3.1.1 Cumulative Abnormal Returns and Significance Levels - Mean Model

		Mean Model							
		-10 to -1		0		1 to 5		1 to 30	
Selection	N	CAR	p-value	CAR	p-value	CAR	p-value	CAR	p-value
All	101	- 0,0425	0,0081**	- 0,0286	0,8657	- 0,0463	0,0319**	- 0,0531	0,0002**
Acquirer cancellation	40	- 0,0088	0,2576	- 0,0541	0,6682	- 0,0527	0,0053**	- 0,1193	0,0000**
Target cancellation	37	- 0,0507	0,0004**	- 0,0180	0,7944	- 0,0385	0,0222**	- 0,0824	0,0000**
Stock deal	*50*	- 0,0269	0,0030**	- 0,0365	0,6843	- 0,0276	0,0232**	- 0,0764	0,0000**
Cash deal	*37*	- 0,0448	0,0013**	- 0,0264	0,8091	- 0,0578	0,0082**	- 0,0695	0,0000**
US targets	*56*	- 0,0477	0,0576*	- 0,0344	0,8751	- 0,0538	0,0878*	- 0,0375	0,0921*
EU and Asian/Australian targets	*45*	- 0,0361	0,0001**	- 0,0213	0,7641	- 0,0369	0,0057**	- 0,0724	0,0000**

** The significance level of 10 % is obtained*

*** The significance level of 5 % is obtained*

Table 6.3.1.2 Cumulative Abnormal Returns- Market- and Mean Model

		Mean Model and Market Model							
		-10 to -1		0		1 to 5		1 to 30	
Selection	N	Mean	MM	Mean	MM	Mean	MM	Mean	MM
All	101	- 0,0425**	- 0,0377*	- 0,0286	- 0,0238	- 0,0463**	- 0,0483*	- 0,0531**	- 0,0523**
Acquirer cancellation	40	- 0,0088	- 0,0062	- 0,0541	- 0,0576	- 0,0527**	- 0,0549	- 0,1193**	- 0,1187**
Target cancellation	37	- 0,0507**	- 0,0491	- 0,0180	0,0397	- 0,0385**	- 0,0463	- 0,0824**	- 0,0749**
Stock deal	*50*	- 0,0269**	- 0,0295	- 0,0365	- 0,0338	- 0,0276**	- 0,0319	- 0,0764**	- 0,0634**
Cash deal	*37*	- 0,0448**	- 0,0471	- 0,0264	- 0,0262	- 0,0578**	- 0,0624	- 0,0695**	- 0,0773**
North American targets	*56*	- 0,0477	- 0,0479	- 0,0344	- 0,0224	- 0,0538	- 0,0581	- 0,0375*	- 0,0547*
EU and Asian/Australian targets	*45*	- 0,0361**	- 0,0278	- 0,0213	- 0,0230	- 0,0369**	- 0,0336	- 0,0724**	- 0,0494*

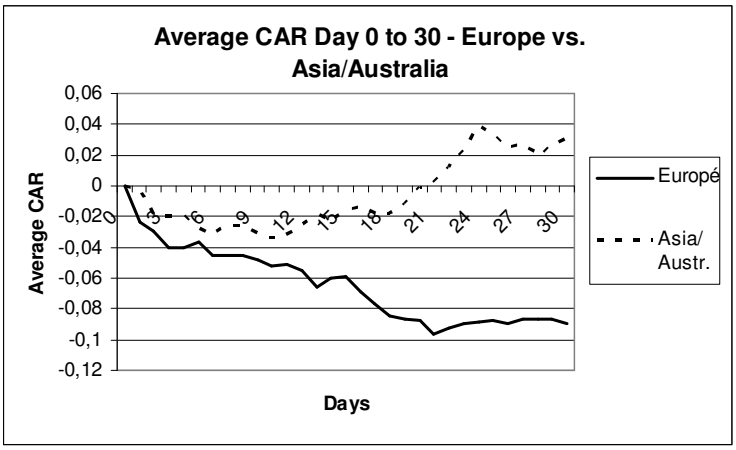
** The significance level of 10 % is obtained*

*** The significance level of 5 % is obtained*

6.3.2 Quantitative Analysis of Robustness

As discovered in the graphical section of the empirical findings, section 6.1, it was obvious that there exists a divergence between the North American vs. European and Asian/Australian markets. It has therefore been of interest to take the analysis yet a step further, exploring whether there exist divergence within the non-American targets group. As explained in section 4.1 Europe, Asia and Australia has previously been collectively analyzed due to the low number of observations (30 for Europe, 11 for Australia and 4 for Japan), however, in order to distinguish differences between the markets, a graph has been drawn of Asia/Australia and Europe separate. The results are shown in figure 6.3.2.1 and points towards a large divergence between the Asian/Australian and European markets, implying that the Asian and Australian markets are rather efficient compared to the European market. It is noticeable that there is an upward moving CAR trend for the Asian/Australian target sample, starting around the twentieth day post-cancellation. The trend can however not be assumed to be a good representation since it is based on a low number of observations.

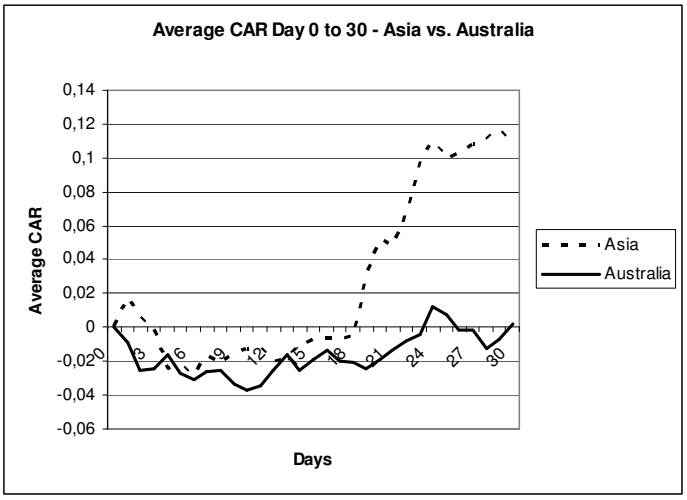
Figure 6.3.2.1 Average CAR Day 0 to 30 –Europe vs. Asia and Australia



Out of curiosity, it is also interesting to explore potential dissimilarities between the Asian and Australian markets even though the number of observations is too small to draw any general or significant conclusions. Figure 6.3.2.2 show the graphical results from plotting the average Asian and Australian CAR separately. As the graph indicates there is no striking divergence between the two markets up until two weeks post-cancellation, and one may therefore not conclude that one of the markets solely have the ability to explain the different development path compared to Europe. Both samples show a similar upward moving trend, starting around the twentieth day post-cancellation, however, it is evident that the four observations from the Japanese stock market clearly has a substantially stronger trend. It is possible that these trends

are based on the market anticipating subsequent bids on the sample targets. Another possibility, particularly regarding the Australian CAR trend, is that market reactions due to the event might have resulted in a under pricing which is corrected by a subsequent period of over pricing. It might be of interest for future studies to research the underlying reasons for the found pattern, using a sample consisting of a larger data sample from the Asian/Australian market than the one used in this study.

Figure 6.3.2.2 average CAR Day 0 to 30 – Asia vs. Australia



As an additional measure of testing the robustness of the findings regarding the 30-day-post-cancellation period, scatter plots of individual target CAR's were produced for each of the evaluated data samples. The plots were used as a means to identify potential outliers that might distort the results. Outliers are determined as individual CAR observations that are found to be of a substantially larger or smaller size than other CAR observations in each sample population. The evaluated scatter plots are presented in tables F1-14 in the appendix. The large positive abnormal returns that are removed are probably due to subsequent bids or other such events that result in abnormally positive market reactions. These observations should not be part of the data set according to the discussion in section 4.1. A few observations of large negative CAR are also removed which should lead to the results becoming more robust. 30-day-post-cancellation CAR's for all the evaluated samples have been calculated, when correcting for identified potential outliers, and the results are shown in Table 6.3.2.3. As can be seen, when correcting for potential outliers, CAR's of a larger magnitude, in absolute terms, are found for most of the evaluated samples. Furthermore, by removing potential outliers, applications of both the market- and mean model give very

similar results regarding; the size of CAR's and differences amongst the samples. For instance, applications of both models result in CAR's of around 8 % for the sample of all deals, in comparison to CAR's of around 5 % when including the outlier observations. The similarity between the outcomes of the two tests in addition to a corrected data set gives reason to believe that the results presented in table 6.3.2.3 are the most accurate in this study regarding the 30-day-post-cancellation event window.

MacKinlay (2007) discusses the *power* of an event study, i.e. the tests ability to detect the presence of a nonzero abnormal return. The power is defined within the interval 0 to 1.0, where 0 implies a non-existent ability to detect a nonzero abnormal return and 1.0 a perfect such ability. The power of the test of CAR for each of the evaluated samples is presented in table 6.3.2.3. The test is based on an average standard deviation of the cumulative abnormal return of 4 %, which is a case that corresponds roughly to a multi-day event window. Furthermore the power is for abnormal returns of 2.0 %, and a higher measured absolute abnormal return, which is the case for all the evaluated samples, implies a higher power measure than those presented. The measured CAR's are assumed to be reliable since the power of the tests range between 0.85 and 1.0.

Table 6.3.2.3 Side-by-side CAR, 1 < t < 30, Market- and Mean Model results when disregarding outliers

	N	Market model				Mean model			
		No of outliers	**CAR, outliers removed**	**p-value**	**Power**	**No of outliers**	**CAR, outliers removed**	**p.-value**	**Power**
All deals	101	2	- 0.0796**	0.0003	1.0	3	- 0.0867**	0.0000	1.0
Deals where acquirer's cancelled	40	1	- 0.1596**	0.0000	1.0	1	- 0.1668**	0.0000	1.0
Deals where targets cancelled	37	0	- 0.0749**	0.0299	1.0	1	- 0.0568**	0.0000	0.85
Stock financed deals	50	0	- 0.0634**	0.0009	0.9	1	- 0.0578**	0.0105	0.9
Cash financed deals	37	1	- 0.1193**	0.0009	0.85	1	- 0.1182**	0.0000	0.85
North American targets	56	1	- 0.0826*	0.0065	0.9	2	- 0.0985*	0.0001	0.9
EU & Asian/Australian targets	45	2	- 0.0479**	0.0784	0.8	1	- 0.0546*	0.0000	0.9

** The significance level of 10 % is obtained*

*** The significance level of 5 % is obtained*

The results in table 6.3.2.3 indicate that there are differences in CAR depending on geographical region, actor of cancellation and means of payment. The results from statistical inference on the differences, in accordance to the discussion in section 3.1.4, are presented in table 6.3.2.4. The results show that it is only in the case of actor of cancellation that the differences between the samples can be assumed significant at the 5 % level.

Table 6.3.2.4 95 % Confidence intervals of CAR differences, 1 < t < 30, based on Market Model results when disregarding outliers

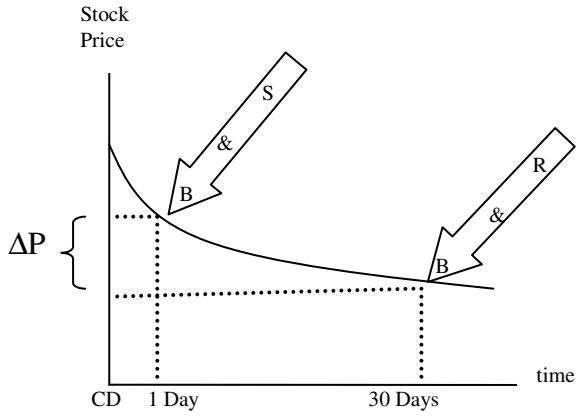
	Confidence interval between sample CAR's		*Difference between CAR's significantly different from zero*
	Min	Max	
North American VS EU & Asian/Australian targets	- 0.11379	0.04440	NO
Acquirer's cancelled VS target cancelled deals	- 0.16830	- 0.00111	YES
Stock financed VS Cash financed deals	- 0.12989	0.01807	NO

7. Investment Strategy

7.1 Proposed Strategy

Based on the earlier outcome it is evident that target companies stocks are overvalued in post cancelled M&A deal settings within the evaluated period. One could therefore earn profits by short selling the securities, meaning that one borrows the target's shares from a broker and sells them on the market (B&S), at latest one day post the event, implying a possession of a short position in the target's stocks. The stocks should later be bought back at least within a thirty day period and returned to the initial owner (B&R). A profit is made by the divergence between the sell and buy price, ΔP, deduced by borrowing costs. Figure 7.1.1 below helps to visualize the set up of the strategy.

Figure 7.1.1 Investment Strategy - Short Selling



7.2 Back-Testing

In order to discover whether the proposed investment strategy is capable of creating a profit, back-testing is performed, which simply shows the profits one could have made by investing in a portfolio of securities from targets involved in cancelled M&A deals.

It would, of course, have been of interest to create a portfolio of a rather large size but due to the short time period, 2007-01-01 to 2007-06-01, the geographical restrictions and limited access to databases, the portfolio analyzed only consist of eleven cancelled deals. For more detailed information about the selected deals see appendix table E. Nevertheless, the back-testing portfolio contributes with a glimpse of how an outcome from a real-life trading scenario could have materialized. As table 7.1.1 presents most of the securities show negative returns and if preferable, investing in an equally weighted portfolio including the eleven deals the portfolio would have provided a 10% negative return over a 25 day period[14] implying that the investment strategy presented holds for future trading. On the negative, a strategy such as the one suggested, is commonly not fully diversifiable at a certain point in time due to the limited number of parallel deal cancellations. However, if the empirical findings of the study hold, then applying the strategy consequently over time should be profitable, in particular if the investor is careful in selecting targets. The main risk associated with the recommended strategy is an upward movement in the share price of a shorted target. Therefore, targets that are likely to receive subsequent bids should be avoided as well as targets that have had a large decrease in their share price during the period just before the publicly announced cancellation. In particular the investor should pay extra attention to those targets that have cancelled the deals themselves since findings from prior research have shown that they are commonly followed by an upward re-valuation. Furthermore, the investor should pay close attention to the publicly available information regarding the targets post-cancellation, in order to quickly close out on the short position when there is a likely outcome of an upward movement in the share price of the target. Thus, a suggestion to the investor is to study the characteristics of cancelled M&A's in order to build a checklist of important factors to consider when making investment decisions, since this would probably decrease the risk of what otherwise seems to be a profitable investment strategy.

[14] compared to 9% and 7% over a 30 respectively 10 day period

Figure 7.1.1 Back-Testing Portfolio

Portfolio of Eleven Securities -Equally Weighted	
Company	**Returns Day 0 to 25**
Queensland Gas Company Ltd	0.08571
New Deal Inc	- 0.31818
Friendly Corporation	- 0.06408
TradeDoubler AB	- 0.02051
Nieuwe Steen Investments NV	- 0.03043
Marfin Popular Bank Public Co., Ltd	0.00248
Phoenix Technologies Ltd	- 0.15675
Clean Power Income Fund	0.05963
AccountAbilities Inc	- 0.12963
Centerra Gold Inc	- 0.20446
Dynasty Gold	- 0.34375
Portfolio Return	**-0.10182**

8. Discussion

8.1 Empirical Findings Discussion

The results clearly point out the tendencies of both anticipation by the market and a delayed response to the event of cancelled M&A. This is supported by substantial negative CAR for the tested samples and a high level of significance, obtained when studying a comprehensive data sample of 101 target companies listed on markets in four continents. The findings are well in line with prior research performed on negative announcements[15]. Below the findings are discussed for the studied periods and in relation to each of the stated hypotheses.

8.1.2 The pre-cancellation period

Evaluating the sample of all target companies show CAR of – 4 % over the pre-cancellation period, significant at the 10 % level. When measuring CAR of the other samples similar results are obtained that indicate pre-event information leakage, however, a large discrepancy is found between the measured CAR of the two samples differing regarding cancellation party. CAR of - 5 % is measured when the target cancels, and the CAR is found to be close to zero when the acquirer is the cancelling party. No evidence can be found from previous

[15] See for example Bernard & Thomas (1989) and Bartov et al. (1998)

research that supports this outcome, although this would imply little or no information leakage when M&A's are cancelled by the acquiring party. It is noteworthy that the pre-cancellation CAR for acquired cancelled deals are not found to be significant and the difference between the samples that differ depending on actor of cancellation have not been statistically tested.

8.1.3 The day of the event

On the day of the event negative CAR of – 2 %, were found which is a rather small reaction relative to the price build-up that occurs in between the announcement of the merger up to cancellation. The pre-cancellation event results mentioned above can partly explain this, since the market seems to have anticipated the event. All calculated CAR's for the day of the event are insignificant, and as mentioned earlier one have the reason to believe this occurs due to a wide discrepancy between the CAR's of the securities in the tested samples. It is noteworthy that positive CAR of 4 %, significant at the 11 % level, has been measured when the targets cancel deals, and one reason for this can be that the market commonly expects a subsequent bid in these situations.

8.1.4 The post cancellation period

Substantial CAR's were measured over the post-cancellation periods. For the sample of all deals there is CAR of - 4 %, significant at the 10 % level, for the five day post-cancellation period. A delayed market response during the first few days after cancellation is thus supported by these findings. The results over the thirty days post-cancellation event window show that the delayed response is continued, measuring significant CAR of - 8 % for the sample of all deals over the period when removing potential outliers from the sample. Over the same period, a CAR of – 8 % is measured for the sample of North American deals, and a CAR of – 4 % for the sample of Europe and Asian/Australian deals. These findings give reason to believe that the European/Australian markets are more efficient than those in North America contradictory to prior research[16]. In addition, the graphical analysis in section 6.3.2 suggests that the Asian/Australian market is more efficient than the European, however, this conclusion should not be taken too seriously, since it is based on a sample of only 15

[16] See for example Saudagaran and Biddle (1995)

Asian/Australian targets. Thus, the results indicate there are differences in market efficiency among regions, however, these differences are not found statistically significant at the 5 % level.

8.1.5 The findings in relation to the stated hypothesis

Below the final findings are presented in relation to the stated hypothesis, and it will be evident that two out of the four hypothesis were accepted.

After the removal of possible outliers, applying both the market- and mean model result in highly significant CAR's of around - 8 % for the sample of all deals over the 30-day-post-cancellation period. Thus, there seems to be a delayed market response implying inefficient market reactions due to the event of cancelled M&A. Furthermore, highly significant CAR of – 5 % are found for the sample of all deals over the pre-cancellation period, indicating the presence of pre-event information leakage.

Hypothesis 1: The market reacts efficient upon cancelled mergers or acquisitions **Hypothesis *rejected***

A discrepancy has been found regarding geographical orientation; after removing potential outliers from the samples, significant CAR of around – 5 %, for the 30-day-post-cancellation period, is found for the sample of EU and Asian/Australian targets in comparison to – 8 % for the sample of North American targets. However, the observed difference is not found significant at the 5 % level. Thus, it could not be determined that there is a difference in market efficiency between the regions.

Hypothesis 2: There is no difference in market efficiency between the North American markets and the European-, Asian- and Australian markets upon cancelled mergers or acquisitions **Hypothesis *cannot be rejected***

Evidence have been found that imply that there is a clear difference in impact depending on the actor of cancellation; after removing potential outliers from the samples, significant CAR's of around - 16 %, for the 30-day-post-cancellation period, are found when the acquirer cancel deals in comparison to around - 7 % when targets are the cancellers. The observed difference was found significant at the 5 % level. Thus, the market seems to be less efficient in the case of acquirer cancelled deals in comparison to those cancelled by targets.

Hypothesis 3: Market efficiency is independent of actor of cancellation upon cancelled mergers or acquisitions **Hypothesis *rejected***

The study has shown there is a difference depending on the type of payment; after removing potential outliers, significant CAR's of around - 12 %, for the 30-day-post-cancellation period, are found when deals are cash financed in comparison to - 6 % when deals are financed with stock. However, the observed difference is not found significant at the 5 % level. Thus, it could not be determined that the market's efficiency is independent of means of payment.

Hypothesis 4: Market efficiency is independent of means of payment upon cancelled mergers or acquisitions **Hypothesis cannot be *rejected***

8.1.6 Robustness and Back-testing

The results regarding pre-event information leakage and delayed market response is robust to an alternative application of measuring expected security returns, since both models result in a high level of significance, in particular regarding the sample of all deals and for all samples regarding the 30-day-post-cancellation period. Furthermore, both models give similar results regarding the size of CAR's, and also indicate the same kind of differences amongst the evaluated samples in accordance to the stated hypothesis. The back-testing involves investing in an equally weighted portfolio including eleven targets listed on the Asian, Australian, European and North American stock markets supports the findings of a delayed market response, since the portfolio would have provided a 10 % negative return over a 25 day period. A too strong emphasis should not be put on the investing result since it incorporates a

portfolio of very few stocks. Although, the conclusion remains; that markets anticipate the event of cancelled M&A and there is a delayed response to this event, as well as a difference in impact depending on the cancellation party.

8.2 Further Research

The major flaw of this thesis is something that often travels in pair namely the concept of *time and money.* If having more financial aid the examination could have been expanded to include yet 97 cancelled mergers and acquisitions, and thereby strengthening the results. On the paradox one will not get a hundred times more evident results by simply adding a hundred more observations. Another aspect of relevance is the small Asian/Australian data sample, if being able to expand the data set one could be able to draw conclusions concerning different levels of efficiency among specific markets which this thesis lacks. Further, if having more time one could have calculated expected returns by using a market portfolio consisting of stocks with similar risks and this would most likely has been a better proxy. Besides these major flaws there is, of course, always room for improvement especially since none of the signing authors are seniors in the field.

One finding of this thesis is close to zero pre-cancellation abnormal returns in the event of acquirer cancellations. These findings were found insignificant, although, they indicate there is minimal information leakage prior to cancellation in these cases. It might be interesting to find explanations to these findings as well as to further investigate their existence.

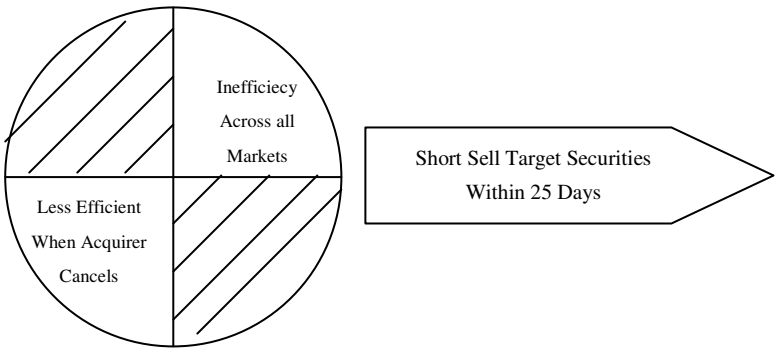
Prior research has shown that share prices of targets that cancel deals are likely to be upward re-valuated. This could result in: a) the future cash-flows of the target is expected to increase; b) the risk level of the target is adjusted downward; c) a combination of a) and b). These events could affect the expected returns as well as post-cancellation CAR's. It might be interesting to investigate the likelihood of the events a), b) and c) in the case of target cancelled deals. Also, the impact on post-cancellation CAR's in the case of these events could be another interesting topic for further research.

9. Conclusion

Figure 9.2 below helps to visualize the empirical results by summarizing the findings from the four angle approach introduced in section 1.1.

As a sum-up one may evidently state that this thesis successfully contributes with up to date findings that indicates less efficient market reactions in general, and in particular when acquirers are in charge of cancelling proposed mergers. No evidence was found that supports earlier assumptions about a lower level of efficiency in non-American countries or a difference due to means of payment. However, somewhat surprisingly, Europe, Australia and Asia showed the tendency of being more efficient compared to the North American markets. Although, further research on the topic is recommended due to the small sample of Asian and Australian observations and one could therefore not draw a general conclusion concerning these markets. Profits are shown to be at hand if short selling securities of target companies in cancelled merger or acquisition deal settings. If considering a rate of 10 % decent, one should consider it a hint for shorting but keeping in mind to carefully select targets and paying close attention to price developments both pre- and post-cancellation.

Figure 9.2 Four Angle Approach Findings



10. Reference List

Literature

Altman O.L., 1964, The Integration of European Capital Markets, *The Journal of Finance Vol. 20, No. 2,* 209-221.

Armitage S., 1995, Event-study Methods and Evidence on Their Performance, *Journal of Economic Surveys Vol. 8 No. 4*, 25-52.

Asquith, P., Brunner R.F., and Mullins D.W., 1983, The Gains to Bidding Firms from Merger, *Journal of Financial Economics Vol. 11*, 121 -38

Ball R. and Brown P., 1968, An Empirical Evaluation of Accounting Income Numbers, *Journal of Accounting Research Vol. 6 No. 2.*, 159-178

Bartov E., Lindahl F.W and Ricks W., 1998, Stock Price Behaviour Around Announcements of Write-Offs, *Review of Accounting Studies Vol. 3, No. 4*, 327–346

Bernard and Thomas, 1989, Post-Earnings Announcement Drift: Delayed Price Response Or Risk Premium? *Journal of Accounting Research Vol. 21,* 1-36

Blacconiere W.G. and Northcutt W.D., 1997, Environmental Information and Market Reactions to Environmental Legislation, *Journal of Accounting, Auditing & Finance Spring,* 149-178.

Bradley M., Desai A., and Kim E.H., 1983, The Rationale Behind Interfirm Tender Offers: Information or Synergy? *Journal of Financial Economics Vol. 11*, 183-206.

Brealey R. Myers S and Allen F., 2005, *Corporate Finance,* McGraw-Hill Inc., 8th ed. (2005)
Brown S.J. and Warner J.B., 1980, Measuring Security Price Performance, *Journal of Financial Economics Vol. 8 No. 3*, 205-58.

1985, Using Daily Stock Returns: The Case of Event-studies, *Journal of Financial Economics Vol.14 No.1*, 3-31

Campbell J., Lo A. and MacKinlay A., 1997, The Econometrics of Financial Markets, Princeton University Press, ISBN 0-691-04301-9

Davidsson III W. N., Dutia D. and Cheng L., 1989, A Re-Examination of the Market Reaction to Failed Mergers, *The Journal of Finance Vol. 44 No. 4*, 1077-1083

Dodd P., 1980, Mergers Proposals, Management Discretion and Stock Holder Wealth, *Journal of Financial Economics Vol.8 No.* 2, 105-137

Dryden M.M, 1970, Filter tests of United Kingdom share prices, *Applied Economics Vol.7*, 265-75

Dyckman T., Philbrick D. and Stephan J., 1984, A Comparison of Event Study Methodologies Using Daily Stock Returns: A Simulation Approach, *Journal of Accounting Research Vol. 22*, 1-30

Fabozzi F.J., Ferri M.G., Fabozzi T.D. and Tucker J., 1988, A Note on Unsuccessful Tender Offers and Stockholder Returns, *The Journal of Finance Vol. 43 No. 5.*, 1275-1283.

Fama E.F. and French K.R., 1976, Market Efficiency, *The Journal of Finance Vol. 31 No.5*, 1341-1357

Fama E.F., Fisher L., Jensen M.C. and Roll R., 1969, The Adjustment of Stock Prices to New Information, *International Economic Review Vol. 10 No. 1.*, 1-21.

Franks J.R., Broyles J.E and Hecht M.J, 1977, An Industry Study of The Profitability of Mergers in The United Kingdom, *The Journal of Finance Vol 32 No.5*, 1513-1525

Garbade K.D and Silber W.L., 1979, Dominant and Satellite Markets: A Study of Dually-Traded Securities, *The Review of Economics and Statistics, Vol. 61, No. 3,* 455-460

Gaughan P.A., 2002, Mergers, Acquisitions, and Corporate Restructurings, Third Edition, John Wiley & Sons, Inc. (2002), ISBN 0-471-12196-7

Ghosh A and Lee C-W, 2000, Abnormal Returns and Expected Managerial Performance of Target Firms, *Financial Management Vol. 29 No. 1*, 40-52

Grossman S.J. and Stiglitz J.E, 1980, On the Impossibility of Informationally Efficient Markets, *The American Economic Review*, Vol. 70, No. 3., 393-408.

Holl P. and Pickering J.F., 1988, The Determinants and Effects of Actual, Abandoned and Contested Mergers, *Managerial and Decision Economics Vol. 9 No. 1,* 1-19

Hvvid M. and Pendergast C., 1993, Merger failure and merger profitability, *The Journal of Industrial Economics Vol. 41 No. 4,* 371-386

Knapp W., 1990, Event Analysis of Air Carrier Mergers and Acquisitions, *The Review of Economics and Statistics Vol. 72 No. 4,* 703-707

MacKinlay A.C., 1997, Event Studies in Economics and Finance, *Journal of Economic Literature Vol. 35 No. 1*, 13-39

Malatesta P.H, 1986, Measuring Abnormal Performance: The Event Parameter Approach Using Joint Generalized Least Squares, *The Journal of Financial and Quantitative Analysis Vol. 21 No. 1*, 27-38.

Malkiel B.G., 1973, A random Walk Down the Wall Street, W. W. Norton & Company (1996), ISBN 0393315290

Mandelker G., 1974, Risk and Return: the Case of Merging Firms, *Journal of Financial Economics Issue. 4,* 303-335

Saudagaran S. M. and Biddle G. C., 1995, Foreign Listing Location: A Study of MNCs and Stock Exchanges in Eight Countries, *Journal of International Business Studies, Vol. 26, No. 2* 319-341

Schwert, G. 1981, Using Financial Data to Measure the Effects of Regulations, *Journal of Law and Economics Vol.24 No.1*, 121-157

Sharma J. L., Kennedy R. E., 1977, A Comparative Analysis of Stock Price Behavior on the Bombay, London, and New York Stock Exchanges, *The Journal of Financial and Quantitative Analysis, Vol. 12, No. 3,* 391-413

Sullivan M.J., Jensen M. and Hudson C.D, 1994, The Role of Medium of Exchange in Merger Offers: Examination of terminated Merger Proposals, *Financial Management Vol. 23 No. 3*, 51-62

Data Bases

Swedish Central Bank
Online access on www.riksbank.se

Thomson DataStream Advance Version 4.0 SP5B
Accessed through the Stockholm School of Economics

Zephyr - Bureau van Dijk Electronic Publishing
Access through the Stockholm School of Economics

Oral Sources

Simonov, Andrei, Associate Professor, Department of Finance, Stockholm School of Economics, Discussion 2007-04-03

Costa Carvalho, Marcelo, Assistant Teacher Empirical Finance, Department of Economic Statistics, Stockholm School of Economics, Discussion 2007-05-16

Michael Persson, Asset Manager, SEB, Discussion 2007-05-02

Anonymous, Portfolio Manager, Danske Bank, contact through Patrik Silfverling, Head of Nordic Sales, Franklin Templeton Investments, Discussion 2007-05-15

Appendix

Notation Table A-B:

AoC- Actor of Cancellation; Acquirer (A), Government (G), Mutual (M) or Target (T)

ToP- Terms of Payment; Cash (C), Stock (S), Both (B) and Convertible Bonds (CB)

Type- Type of Deal; Acquisition (A) or Merger (M)

Table A1. All Deals Excluded Sorted by Region- North America

Target:	*Target listed in*	*Why?*	*AoC*	*ToP*	*Acquirer*	*Acquirer listed on*	*Announce*	*Cancel*	*Type*
1st Constitution Bancorp	NASDAQ national market	n/a	A	S	Greater Community Bancorp	NASDAQ National Market	2003-02-07	2003-07-25	A
Advanced Fibre Communications Inc.	NASDAQ national market	n/a		S	Tellabs Inc	NASDAQ National Market	2004-05-20	2004-09-07	A
Aetna Inc	NYSE	other	T	S	WellPoint Health Networks Inc	NYSE	2000-03-01		A
American General Corporation	NYSE	n/a	T	S	Prudential plc		2001-03-12	2001-05-11	A
Amisk inc.	Canadian Venture Exchange	other	A	C	Pan-O-Lac Ltd	-	2006-04-27	2006-11-17	A
Arizona Star Resource Corporation	AMEX	n/a	A	S	Bema Gold Corporation	Toronto Stock Exchange	2004-12-20	2005-05-05	A
Atlantic Coast Airlines Holdings Inc	Other OTC Market US	n/a	T	S	Mesa Air Group Inc.	NASDAQ National Market	2003-10-06	2003-10-23	A
BPO Properties Ltd	Toronto Stock Exchange	other	A	S	Brookfield Properties Corporation	Toronto Stock Exchange	2003-04-28	2003-06-18	A
Canada Life Financial Corporation	Toronto Stock Exchange	n/a	T	S	Manulife Financial Corporation	Toronto Stock Exchange	2002-12-09	2003-02-18	A
Centerpulse AG	Swiss Exchange	n/a	T	S	Smith & Nephew Group plc		2003-03-20	2003-08-28	A
Centra Software Inc.	NASDAQ national market	n/a	A	S	SmartForce plc		2002-01-17	2002-04-05	A
CenturyTel Inc.	NYSE	n/a	T	S	Alltel Corp.	NYSE	2001-08-14		A
ClubLink Corporation	Toronto Stock Exchange	other	n/a	S	Tri-White Corporation	Toronto Stock Exchange	2002-09-13	2002-12-20	A
Cognicase Inc.	Toronto Stock Exchange	n/a	n/a	S	CGI Group Inc.	Toronto Stock Exchange	2002-12-06	2002-12-20	A
Conestoga Enterprises Inc	NASDAQ national market	n/a	T	S	NTELOS Inc.	NASDAQ OTC Bulletin Board	2001-07-25	2001-11-21	A
CoVest Bancshares Inc	NASDAQ national market	n/a	M	S	Midwest Banc Holdings Inc.	NASDAQ National Market	2002-11-01	2003-07-01	A
Drug Royalty Corporation Inc	Toronto Stock Exchange	n/a	A	S	Cambridge Antibody Technology Group plc	LSE	2002-01-17	2002-04-28	A
Enzon Inc	NASDAQ national market	other	A	S	NPS Pharmaceuticals Inc.	NASDAQ National Market	2003-02-20	2003-06-05	M
Extended System Inc.	NASDAQ national market	n/a	M	S	Palm Inc.	NASDAQ International Market	2001-03-06	2001-05-17	A

Factual Data Corporation	NASDAQ national market	n/a	T	S	Fidelity National Info. Services Inc.	NASDAQ National Market	2002-05-16	2002-08-29	M
FEI Company	NASDAQ national market	other	M	S	Veeco Instruments Inc	NASDAQ National Market	2002-07-12	2003-01-15	A
FloridaFirst Bancorp Inc	NASDAQ national market	n/a	G	S	BB&T Corporation	NYSE	2002-10-03	2002-10-31	A
Geomaque Explorations Ltd	Toronto Stock Exchange	n/a		S	St Barbara Mines Ltd	Australian Stock Exchange	2003-01-09	2003-04-03	M
Hartmarx Corporation	New York Stock Exchange	other	T	C	Lincoln Company LLC, The	-	2001-08-14	2001-10-01	A
Honeywell International Inc.	NYSE	other	G	S	General Electric Company	NYSE	2000-10-22	2001-10-01	A
Hughes Electronics Corporation	NYSE	n/a	A	S	EchoStar Communications Corporation	NASDAQ International Market	2001-08-05	2002-12-11	A
Hughes Electronics Corporation	NYSE	n/a	A	S	EchoStar Communications Corporation	NASDAQ National Market	2001-08-05	2002-12-11	A
IAMGold Corporation	Toronto Stock Exchange	other	A	S	Golden Star Resources Ltd	Toronto Stock Exchange	2004-05-27	2004-08-13	A
IKOS Systems Inc	NASDAQ national market	n/a	T	S	Synopsys Scientific Systems		2001-07-02	2002-01-22	A
Inamed Corporation	NASDAQ national market	n/a	M	S	Medicis Pharmaceutical Corporation	NYSE	2005-03-21	2005-12-13	A
infoUSA Inc.	NASDAQ National Market	other	T	C	Vin Gupta & Company LLC	-	2005-06-13	2005-08-24	A
Invivo Corporation	NASDAQ national market	n/a	T	S	Intermagnetics General Corporation	NASDAQ National Market	2003-11-03	2003-11-04	A
JMG Exploration Inc.	PCE and AMEX	other	A	S	Jed Oil Inc	AMEX	2006-02-26	2006-11-21	A
Jupiter Media Metrix Inc.	NASDAQ OTC Bulletin Board	other	G	S	NetRatings Inc.	NASDAQ National Market	2001-10-25	2002-02-19	A
Liquid Audio Inc	NASDAQ OTC Bulletin Board	n/a	T	S	Steel Partners LLC		2001-10-22	2001-11-07	A
MeriStar Hospitality Corporation	NYSE	n/a	A	S	FelCor Lodging Trust Inc.	NYSE	2001-05-10	2001-09-21	A
MessageMedia Inc.	NASDAQ national market	n/a	A	S	DoubleClick Inc.	NASDAQ National Market	2001-06-01	2001-10-11	A
Mobile Data Solutions Inc	Toronto Stock Exchange	n/a	M	S	@Road Inc	NASDAQ National Market	2004-04-13	2004-07-27	A
Netopia Inc.	NASDAQ national market	n/a	A	S	Proxim Inc.	NASDAQ International Market	2001-01-23	2001-03-23	A
Ocular Sciences Inc.	NASDAQ national market	n/a	T	S	Wesley Jessen VisionCare Inc.	NASDAQ International Market	2000-03-20	2000-06-02	A
P&O Princess Cruises plc	LSE and NYSE	n/a	T	S	Carnival Corporation	NYSE	2001-12-17	2002-01-15	A
Prentiss Properties Trust	NYSE	n/a	M	S	Mack-Cali Realty Corporation	NYSE	2000-06-28	2000-09-22	A
Pure Resources Inc	NYSE	n/a		S	Unocal Corporation	NYSE	2002-08-20	2002-10-02	A
Radiologix Inc.	American Stock Exchange	n/a	A	S	Saunders Karp & Megrue LLC		2000-08-23	2001-04-26	A
SBS Broadcasting SA	Euronext Amsterdam & NASDAQ International	other	A	S	United Pan-Europe Communications NV	Euronex Amsterdam	2000-03-09	2000-05-22	A
Siliconix Inc.	NASDAQ national market	n/a	T	S	Vishay Intertechnology Inc.	NYSE	2001-02-23		A
Siliconix Inc.	NASDAQ national market	n/a	T	S	Vishay Intertechnology Inc	NYSE	2001-05-25	2001-07-06	A
Spectrian Corporation	NASDAQ national market	n/a	A	S	REMEC Inc.	NASDAQ OTC Bulletin Board	2002-05-19	2002-10-30	A

Stelmar Shipping Ltd	NYSE	n/a	T	S	OMI Corporation	NYSE	2004-05-25	2004-07-06	A
Stone Energy Corporation	NYSE	other	T	S	Plains Exploration & Prod.Co.	NYSE	2006-04-24	2006-06-23	M
Stonehaven Realty Trust	NASDAQ OTC Bulletin Board	n/a	T	S	Sutter Holding Company Inc.	Other OTC Market US	2002-06-24	2002-07-02	A
Telaxis Communications Corporation	NASDAQ national market	n/a	M	S	P-Com Inc.	Other OTC Market US	2002-09-10	2003-01-07	A
Wachovia Corporation	NYSE	other	T	S	SunTrust Banks Inc	NYSE	2001-05-14	2001-08-03	A
VERITAS DGC Inc.	NYSE	other	T	S	Petroleum Geo-Services ASA	NYSE and Oslo Stock exchange	2001-12-26	2002-03-28	A
Western Resources Inc.	NYSE	n/a	G	S	Public Service Company of New Mexico		2000-11-09		A
WFS Financial Inc.	NASDAQ national market	n/a	T	S	Westcorp Inc.	NYSE	2002-07-17	2002-07-26	A

Table A2. All Deals Excluded Sorted by Region- Europe

Target:	***Target listed in***	***Why?***	***AoC***	***ToP***	***Acquirer***	***Acquirer listed on***	***Announce***	***Cancel***	***Type***
Aer Lingus Group plc	London Stock Exchange (SETS)	other	G	C	Coinside Ltd	-	2006-10-05	2006-12-21	A
Allgon AB	OMX Stockholm	n/a	T	S	LGP Telecom Holding AB	OMX Stockholm	2000-08-22	2000-10-10	A
Bankas Snoras AB	OMX - Vilnius Stock Exchange	other	T	C	Mr Jean Philip de Grimaldi	-	2002-03-07	2002-05-16	A
Baumgartner Papiers Holding SA	Swiss Exchange	other	T	C	MultiPapiers SA	-	2001-06-07	2002-02-20	A
Centerpulse AG	SWX	n/a	T	S	Smith & Nephew Group plc		2003-03-20	2003-08-28	A
Cermaq ASA	Oslo Stock Exchange	other	T	S	Fjord Seafood ASA	Oslo Stock Exchange		2005-03-15	M
Cross Systems SA	Euronext Paris	other	A	S	Micropole-Univers SA	Euronext Paris	2004-12-13	2005-01-19	A
Fairplace Consulting plc	London Stock Exchange (SEAQ)	other	T	C	Select Appointments (Holdings) plc	-	2006-02-03	2007-03-03	A
Feedback AG	Frankfurt Stock Exchange	n/a	A	S	Phenomedia AG	Frankfurt Stock Exchange	2001-10-11	2002-08-14	A
HBG Hollandsche Beton Groep NV	Euronex Amsterdam	n/a	G	S	Royal Boskalis Westminster NV	Euronex Amsterdam	2000-02-28	2000-02-28	A
Iberdrola SA	Madrid Stock Exchange	other	A	S	Gas Natural SDG SA	Madrid Stock Exchange	2000-10-16	2000-10-25	A
Iberdrola SA	Madrid Stock Exchange	other	A	S	Endesa SA	Madrid Stock Exchange	2000-10-17	2001-02-05	A
Iberdrola SA	Madrid Stock Exchange	other	G	S	Gas Natural SDG SA	Madrid Stock Exchange	2003-03-11	2003-05-06	A
Iberica de Autopistas SA	Madrid Stock Exchange	n/a	A	S	Áurea Concesiones de Infrastructuras SA	Madrid Stock Exchange	2002-04-16	2002-06-14	A
InCentive Capital AG	SWX	n/a	T	S	Smith & Nephew Group plc		2003-03-20	2003-08-28	A
International Computer SA	Euronext Paris	n/a	A	S	eBizcuss.com SA	Euronex Paris	2003-10-14	2003-10-09	A
Isotron plc	London Stock Exchange (SETS)	other	T	S	Synergy Healthcare plc	London Stock Exchange (SETS)	2006-10-26	2007-01-01	A
Larox Oyj	OMX - Helsinki Stock Exchange	other	A	C	Xoral Oy	-	2002-02-11	2002-04-12	A
Nesa A/S	OMX Copenhagen	n/a	A	S	DONG A/S	-	2003-09-22	2003-10-06	A

Platzer Fastigheter AB	Stockholm New Market	n/a	A	S	Fastighets AB Tornet	Sthlm New Market+OMX Sthlm	2001-04-06	2001-06-14	A
PMJ automec Oyj	OMX Helsinki Stock Exchange	n/a	T	S	JOT Automation Group Oyj	OMX Helsinki Stock Exchange	2000-02-21	2000-04-12	A
PSG AG	XETRA	other	T	C	Bechtle AG	-	2003-03-25	2003-09-26	A
Real Affinity plc	London Stock Exchange (SEAQ)	other	A	S	Langbar International Ltd	London AIM Stock Exchange	2005-09-30	2005-11-25	A
Resco AB	OMX Stockholm	n/a	A	S	Fi System SA	-	2000-09-11	2000-11-03	A
Samas-Groep NV	Euronex Amsterdam	other	A	S	Buhrmann NV	Euronex Amsterdam	2000-12-04	2000-12-21	A
SBS Broadcasting SA	Euronex Amsterdam & NASDAQ International	n/a	A	S	United Pan-Europe Communications NV	Euronex Amsterdam	2000-03-09	2000-05-22	A
Sophia SA	Euronext Paris	n/a	T	S	Société Foncière Lyonnaise SA	Euronext Paris	2003-09-30	2004-01-28	A
Storebrand ASA	Oslo Stock Exchange	other	A	S	Sampo Oyj	OMX Helsinki Stock Exchange	2001-05-21	2001-10-01	A
Supercom Ltd	Euronext Brussels	n/a	M	S	PerfectData Corporation	NASDAQ OTC Bulletin Board	2003-05-05	2004-01-20	A
Tripep AB	OMX Stockholm	n/a	T	S	Diamyd Medical AB	OMX Stockholm	2002-06-20	2002-08-29	A

Table A3. All Deals Excluded Sorted by Region- Asia and Australia

Target:	*Target listed in*	*Why?*	*AoC*	*ToP*	*Acquirer*	*Acquirer listed on*	*Announce*	*Cancel*	*Type*
AMP Shopping Centre Trust	Australian Stock Exchange	n/a		S	Centro Properties Group (old	Australian Stock Exchange	2003-03-17	2003-06-12	A
Australian Healthcare Technology Ltd	Australian Stock Exchange	n/a	T	S	IBA Health Ltd	Australian Stock Exchange	2003-09-01	2003-10-15	A
Equs Ltd	Australian Stock Exchange	n/a	T	S	Lakota Resources Inc	TSX Venture	2003-10-24	2003-11-19	A
Gravity Capital Ltd	Australian Stock Exchange	n/a		S	Dwyka Diamonds Ltd	Australian Stock Exchange	2002-12-19	2003-07-01	A
Linden & Conway Ltd	Australian Stock Exchange	other	A	C	Actraint (4357) Pty Ltd	-	2004-02-19	2004-03-26	A
Normandy Mining Ltd	Australian Stock Exchange	n/a		S	AngloGold Ltd	Johannesburg Stock Exchange	2001-09-05	2001-11-19	A
Normandy Mining Ltd	Australian Stock Exchange	n/a		S	AngloGold Ltd	Johannesburg Stock Exchange	2001-12-27	2002-01-19	A
Ochi Sangyo Co., Ltd	Fukuoka Stock Exchange	other	M	S	Tsusho Co., Ltd	-	2001-09-06	2001-11-22	A
SSH Medical Ltd	Australian Stock Exchange	n/a	A	S	Analytica Ltd	Australian Stock Exchange	2003-07-22	2003-09-11	A
Wattyl Ltd	Australian Stock Exchange	other	G	C	Barloworld Ltd	-	2005-12-28	2006-07-06	A
Zimbabwe Platinum Mines Ltd	Australian Stock Exchange	n/a	A	S	Barbican Holdings Ltd	Zimbawe Stock Exchange	2003-08-11	37874	A

Table B1. All Deals Included Sorted by Region- North America

Target	*Target listed on*	*AoC*	*ToP*	*Aquirer*	*Acquirer listed on*	*Announce*	*Cancel*	*Type*
Aecon Group Inc.	Toronto Stock Exchange	T	C	Hochtief (Canada) Inc.	-	2004-05-28	2004-07-21	A
Agile Software Corporation	NASDAQ national market	T	S	Ariba Inc.	NASDAQ International Market	2001-01-29	2001-02-04	A
Andrew Corporation	NASDAQ national market	M	S	ADC Telecommunications Inc	NASDAQ National Market	2006-05-31	2006-09-14	A
Aur Resources Inc	Toronto Stock Exchange	M	S	Inmet Mining Corporation	Toronto Stock Exchange	2004-05-05	2004-06-28	A
Aurizon Mines Ltd	Toronto Stock Exchange	A	S	Northgate Minerals Corporation	Toronto Stock Exchange	2006-05-23	2006-07-08	A
Baldwin Technology Company Inc.	American Stock Exchange	A	C	Technotrans AG	-	2003-12-12	2004-01-30	A
Birner Dental Management Services Inc.	NASDAQ National Market	A	C	G Inc.	-	2002-06-25	2002-09-12	A
Cablevision Systems Corporation	New York Stock Exchange	A	B	Mr Charles F Dolan	-	2005-06-20	2005-10-25	A
Cascade Corporation	New York Stock Exchange	T	C	Lift Tech,TD Cap.+OntarioMunicipalEmpl.Ret.Sys.	-	2000-10-18	2001-04-17	A
Coachmen Industries Inc.	NYSE	T	S	Thor Industries Inc.	NYSE	2000-04-17	2000-04-28	A
Computer Horizons Corporation	NASDAQ National Market	A	C	Aquent Inc.	-	2003-04-14	2003-11-19	A
Constellation Energy Group Inc.	NYSE	M	S	FPL Group Inc	NYSE	2005-12-19	2006-10-25	M
Cooper Industries Ltd.	NYSE	T	S	Danaher Corporation	NYSE	2001-08-01	2001-08-08	A
CoSine Communications Inc	Other OTC Market US	T	S	Tut Systems Inc	NASDAQ National Market	2005-01-07	2005-05-17	A
CR Bard Inc.	NYSE	G	S	Tyco International Ltd	NYSE	2001-05-30	2002-02-08	A
Delta Air Lines Inc.	ther OTC Market, USA	A	B	US Airways Group Inc. (new)	-	2006-11-15	2007-01-31	A
Digene Corporation	NASDAQ National Market	T	B	Cytyc Corporation	-	2002-02-19	2002-07-01	A
Eclipsys Corporation	NASDAQ national market	M	S	Neoforma Inc	NASDAQ National Market	2000-04-10	2000-05-25	A
Energy Partners Ltd	New York Stock Exchange	T	C	ATS Inc.	-	2006-08-28	2006-11-19	A
Engage Inc.	Other OTC Market US	M	S	CMGI Inc	NASDAQ National Market	2002-05-21	2002-06-21	A
Entergy Corporation	NYSE	T	S	FPL Group Inc.	NYSE	2000-07-31	2001-04-02	A
Enzon Inc.	NASDAQ national market	A	S	NPS Pharmaceuticals Inc	NASDAQ National Market	2003-02-20	2003-06-05	A
eXegenics Inc.	NASDAQ OTC Bulletin Board	T	S	AVI BioPharma Inc.	-	2003-05-29	2003-09-02	A
Fairchild Corporation	New York Stock Exchange	A	C	FA Holdings LLC	-	2006-08-07	2006-08-21	A
FEI Company	NASDAQ national market	M	S	Veeco Instruments Inc	NASDAQ National Market	2002-07-12	2003-01-15	A
FFP Partners LP	-	T	C	Sutter Holding Company Inc.	-	2002-07-30	2002-08-01	A
First Bancorp of Indiana Inc.	NASDAQ national market	T	S	Pulaski Financial Corporation		2001-01-30	2001-03-15	A
General Bearing Corporation	Other OTC Market, USA	T	C	MBO Team - United States	-	2000-07-14	2001-04-16	M
Genesis Microchip Inc	NASDAQ national market	M	S	Pixelworks Inc.	NASDAQ National Market	2003-03-16	2003-08-06	M
Goldcorp Inc	Toronto Stock Exchange	T	S	Glamis Gold Ltd	Toronto Stock Exchange	2005-02-07	2005-02-11	A
IBEX Technologies Inc	Toronto Stock Exchange	T	S	IMI International Medical Innovations	Toronto Stock Exchange	2004-11-02	2004-11-19	A

				Inc				
Independence Federal Savings Bank	NASDAQ National Market	G	C	Carver Bancorp Inc.	-	2004-03-15	2004-10-26	A
InfoNow Corporation	Other OTC Market, USA	M	B	HALO Technology Holdings Inc.	-	2005-12-27	2006-06-26	A
Innicor Subsurface Technologies Inc.	Toronto Stock Exchange	T	C	Sondex plc	-	2006-08-22	2006-11-17	A
King Pharmaceuticals Inc	NYSE	M	S	Mylan Laboratories Inc	NYSE	2004-07-26	2005-02-27	A
Magna Entertainment Corporation	Toronto Stock Exchange	A	S	MI Developments Inc.	Toronto Stock Exchange	2004-07-13	2004-09-16	A
Magna Entertainment Corporation	Toronto Stock Exchange	A	B	MI Developments Inc.	-	2004-07-13	2004-09-16	A
McGrath RentCorp	NASDAQ National Market	A	B	Tyco International Ltd	-	2001-12-20	2002-07-02	A
Medjet Inc	Other OTC Market, USA	A	C	Visx Inc.	-	2001-08-20	2002-12-01	A
Methode Electronics Inc.	NASDAQ National Market	T	C	DURA Automotive Systems Inc.	-	2003-07-03	2003-11-17	A
Newalta Corporation	Toronto Stock Exchange	A	S	Canadian Crude Separators Inc.	Toronto Stock Exchange	2001-05-02	2001-07-06	A
NRG Energy Inc	NYSE	A	S	Mirant Corporation	NYSE	2006-05-30	2006-06-12	A
Oplink Communications Inc.	NASDAQ national market	T	S	Avanex Corporation	NASDAQ National Market	2002-03-20	2002-08-16	A
Osteotech Inc.	NASDAQ National Market	T	C	Musculoskeletal Transplant Foundation Inc.	-	2005-0829	2005-11-01	A
Pro-Dex Inc.	NASDAQ national market	A	S	DENTSPLY International Inc.	NASDAQ National Market	2000-11-08	2001-04-10	A
PSC Inc.	Other OTC Market, USA	A	C	Mohawk Acquisition Corp.	-	2000-06-19	2000-07-25	A
Public Service Enterprise Group Inc	NYSE	A	S	Exelon Corporation	NYSE	2004-12-20	2006-09-14	M
RTW Inc.	NASDAQ National Market	A	C	American Physicians Capital Inc.	-	2001-11-09	2001-12-05	A
Salix Pharmaceuticals Ltd	NASDAQ National Market	T	C	Saule Holdings Inc.	-	2003-04-10	2003-06-28	A
Selectica Inc.	NASDAQ National Market	T	C	Trilogy Software Inc.	-	2005-01-19	2005-01-31	A
SkyTerra Communications Inc.	NASDAQ OTC Bulletin Board	M	B	Motient Corporation	-	2001-05-14	2001-10-01	A
Stephan Company	American Stock Exchange	A	C	Gunhill Enterprises Inc.	-	2003-05-01	2004-08-25	M
Transcontinental Realty Investors Inc.	NYSE	A	S	American Realty Investors Inc	NYSE	2001-10-23	2003-05-23	A
Tumbleweed Inc.	Other OTC Market, USA	A	C	Mr Terrance Smith	-	2002-06-03	2002-11-04	M
Walt Disney Company	NYSE	A	S	Comcast Corporation	NYSE	2004-02-11	2004-04-28	A
VSI Holdings Inc.	Non Nasdaq OTC	A	B	SPX Corporation	-	2001-01-26	2001-08-03	A

Table B2. All Deals Included Sorted by Region- Europe

Target	*Target listed on*	*AoC*	*ToP*	*Aquirer*	*Acquirer listed on*	*Announce*	*Cancel*	*Type*
Abbey National plc	London Stock Exchange (SETS)	G	S	Lloyds TSB Group plc	London Stock Exchange (SETS)	31/01/2001	2001-07-10	A
Aminex plc	Irish Stock Exchange	T	S	Apple Oil & Gas Ltd	-	2002-03-01	2002-03-23	A
Autostrade SpA	Milan Stock Exchange	G	S	Abertis Infraestructuras SA	Madrid Stock Exchange	2006-04-23	2006-12-13	M
Banco Español de Crédito SA	Madrid Stock Exchange	G	C	Banco Santander Central Hispano SA	-	2001-12-27	2002-07-10	A
Beni Stabili SpA	Italian Continuous Market	T	C	Leonardo Finanziaria Srl	-	2004-09-07	2004-11-16	A
Beter Bed Holding NV	Euronext Amsterdam	A	C	NeSBIC BV	-	2002-02-05	2002-03-22	A
DNC De Nederlanden Compagnie NV	Euronext Amsterdam	A	C	DPA Flex Group NV	-	2006-09-04	2006-09-07	A
Electrabel SA	Euronext Brussels	A	C	Suez SA	-	2004-04-08	2004-09-27	A
Euronext NV	Euronext Paris	A	C	Deutsche Börse AG	-	2005-11-06	2006-11-15	M
Gexco AB	Nordic Growth Market	M	S	Nordic Mining ASA	-	2006-05-12	2006-06-26	A
Groupe Gascogne SA	Euronex Paris	T	S	Electricité et Eaux de Madagascar SA	Euronex Paris	2003-07-22	2003-09-08	A
GrønlandsBANKEN A/S	OMX Copenhagen	M	S	Vestjysk Bank A/S	OMX Copenhagen	2004-05-19	2004-08-13	M
Hitt NV	Euronext Amsterdam	T	C	Corpin BV	-	2003-10-29	2004-01-24	A
London Stock Exchange plc	London Stock Exchange (SETS)	T	S	OM AB	OMX - Stockholm Stock Exchange	13/10/2000	10/11/00	A
Marks & Spencer Group plc	London Stock Exchange (SETS)	A	B	Revival Acquisitions Ltd		3/06/2004	2004-07-14	A
Marzotto SpA	Milan Stock Exchange	A	S	Industrie Zignago Santa Margherita SpA	Milan Stock Exchange	2002-09-07	2002-10-30	A
Modelo Continente SGPS SA	Euronext Lisbon	T	C	Sonae SGPS SA	-	2002-02-08	2002-05-05	A
nCipher plc	London Stock Exchange (SEAQ)	A	C	SafeNet Inc.	-	2006-01-24	2006-04-07	A
Norsk Vekst ASA	Oslo Stock Exchange	T	C	Arendals Fossekompani ASA	-	2003-11-12	2003-12-10	A
Penauille Poly Services SA	Euronext Paris	T	C	DJC	-	2004-12-29	2005-05-12	A
Radstone technology Plc	London Stock Exchange (SETS)	T	C	E-Tech UK Ltd	-	2006-08-18	2006-10-06	A
RSE Grundbesitz und Beteiligungs AG	Frankfurt Stock Exchange	A	C	Klöckner-Werke AG	-	2006-10-05	2007-01-18	A
Scania AB	OMX Stockholm	M	S	MAN AG	Frankfurt Stock Exchange and SWX	2006-09-18	2007-01-23	A
Storebrand ASA	Oslo Stock Exchange	A	S	Den norske Bank ASA	-	2002-05-29	2002-07-01	A
Stork NV	Euronex Amsterdam & SWX	A	S	Internatio-Mueller NV		2000-05-08	2000-08-07	M
Sulzer AG	SWX	A	S	InCentive Capital AG	SWX	2001-03-19	2001-04-26	A
Trio AB	OMX Stockholm	M	S	Netwise AB	OMX Stockholm	2005-04-20	2005-04-27	A
Value Management & Research AG	Frankfurt Stock Exchange	M	S	Knorr Capital Partner AG	Frankfurt Stock Exchange	2000-10-05	2000-11-28	M

Wilmington Group plc	London Stock Exchange (SETS)	A	S	Metal Bulletin plc	London Stock Exchange (SETS)	26/06/2006	2006-08-21	A
Ångpanneföreningen AB	OMX Stockholm	A	B	SWECO AB	OMX Stockholm	2001-09-24	2001-10-31	A

Table B3. All Deals Included Sorted by Region- Asia and Australia

Target	*Target listed on*	*AoC*	*ToP*	*Aquirer*	*Acquirer listed on*	*Announce*	*Cancel*	*Type*
AXA Asia Pacific Holdings Ltd	Australian Stock Exchange	T	B	AXA SA	-	2004-08-06	2004-10-18	A
BeMaX Resources NL	Australian Stock Exchange	T	C	Iluka Resources Ltd	-	2000-09-05	2000-12-11	A
CCI Holdings Ltd	Australian Stock Exchange	T	C	Australian Laboratory Services Pty Ltd	-	2006-06-09	2006-0929	A
Contact Energy Ltd	New Zealand Stock Exchange	T	C	Mission Energy Five Star Holdings	-	2001-10-12	2002-02-03	A
DesignEXchange Co., Ltd	Tokyo Stock Exchange	M	S	Creek & River Co., Ltd	Osakas Securities Exchange	2003-03-26	2003-04-15	A
Flight Centre Ltd	Australian Stock Exchange	T	B	Gainsdale Sub Pty Ltd	-	2006-10-25	2007-02-28	M
Gigas Corporation	Tokyo Stock Exchange	A	S	EDION Corporation	Tokyo Stock Exchange	2003-03-28	2003-05-19	A
IWL Ltd	Australian Stock Exchange	M	B	IRESS Market Technology Ltd	-	2002-07-22	2002-11-05	A
Kyorin Pharmaceutical Co., Ltd	Tokyo Stock Exchange	M	S	Teijin Ltd	Tokyo Stock Exchange	2003-01-23	2003-04-22	A
Mitsubishi Paper Mills Co., Ltd	Tokyo Stock Exchange	A	S	Chuetsu Pulp & Paper Co., Ltd	-	2001-05-31	2005-05-15	A
Namoi Cotton Co-operative Ltd	Australian Stock Exchange	A	C	Queensland Cotton Holdings Ltd	-	2005-07-13	2006-01-24	A
Ruralco Holdings Ltd	Australian Stock Exchange	A	S	Roberts Ltd	-	2005-05-11	2005-06-03	A
Sirtex Medical Ltd	Australian Stock Exchange	T	C	Cephalon Inc.	-	2003-02-12	2003-05-29	A
Village Life Ltd	Australian Stock Exchange	T	S	SunnyCove Management Ltd	-	2006-09-07	2006-12-05	A
Woodside Petroleum Ltd	Australian Stock Exchange	G	S	Royal Dutch/Shell Group		2000-11-25	2001-04-23	A

Table C. Regional Market Indecies

Country	*Market Index*
UK	FTSE 100
US	S&P 500 Composite
Australia	ASX All Ordinaries
Japan	DJSI Japan Composite
The Netherlands and Belgium*	AEX Index
Germany	DAGS 200 Average
Spain	IBEX 35
Switzerland	Swiss Market Index (SMI)
Italy	MIB 30
France	CAC 40 Indices
Sweden and Norway*	OMXS (Stockholm)
Denmark	OMXD(Denmark)
Finland	OMXH (Helsinki)
Estonia	OMXT (Tallin)

* *The Norwegian market is assumed to follow the Swedish market, and the Belgium assumes to follow the market in the Netherlands.* Source: DataStream

Table D. Regional Risk Free Rates

Country	*Risk-Free Rate*
North America	US 5 year treasury bill
Japan	Japanese 5 year treasury bill
Germany	German 5 year treasury bill
The Netherlands	Dutch 5 year treasury bill
France	French 5 year treasury bill
United Kingdom	British 5 year treasury bill
Europe*	European 5 year treasury bill

**All other unspecified countries within Europe are assumed to have the same risk-free rate as the 5 year European treasury bill.* Source: Reuters through Swedish Central Bank

Table E. Deals Included in Back Testing Portfolio

AoC- Actor of Cancellation; Acquirer (A), Government (G), Mutual (M) or Target (T)

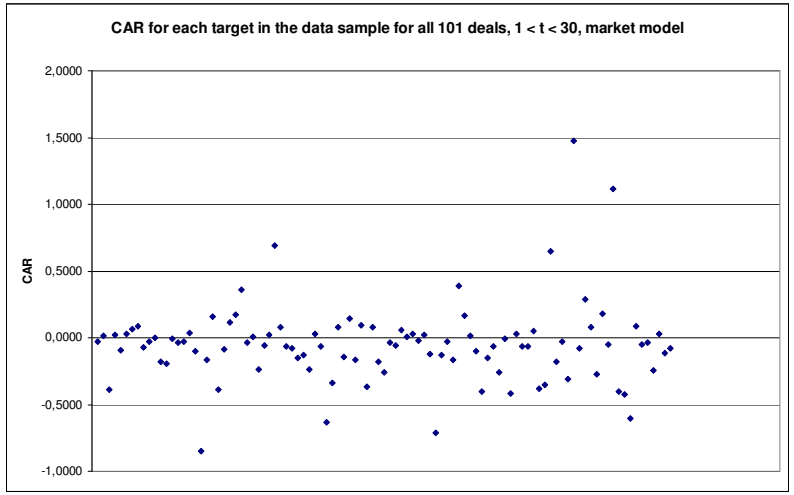
ToP- Terms of Payment; Cash (C), Stock (S), Both (B) and Convertible Bonds (CB)

Type- Type of Deal; Acquisition (A) or Merger (M)

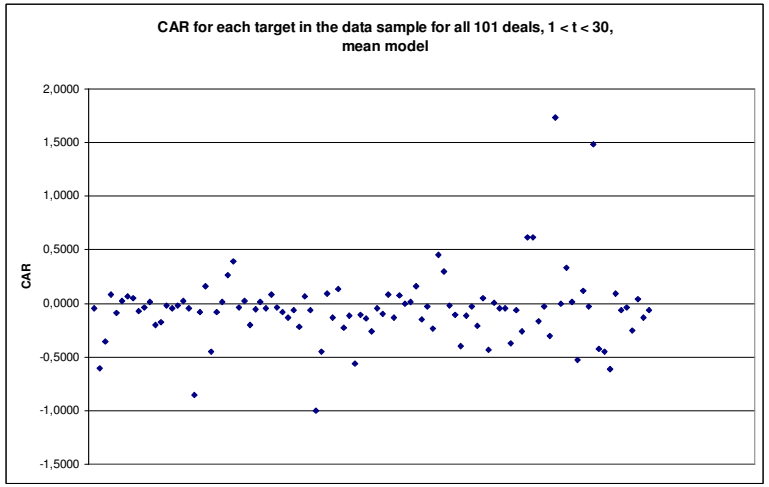
Region	Target	Target Listed On	AoC	ToP	Acquirer	Acquirer Listed On	Announce	Cancel	Type
Asia	Queensland Gas Company Ltd	Australian Stock Exchange	G	C	Santos Ltd	Australian Stock Exchange	2007-01-30	2007-02-21	A
	New Deal Inc	Tokyo Stock Exchange	T	CB	JTI Investment Limited Liability Partnership	not listed	2007-03-13	2007-03-28	A
	Friendly Corporation	Osaka Securities Exchange	M	n/a	Sato Restaurant Systems Co., Ltd	Osaka Securities Exchange	2007-01-12	2007-03-30	M
Europé	TradeDoubler AB	OMX- Stockholm Stock Exchange	T	C	Goldcup D 2389 AB		2007-01-15	2007-03-15	A
	Nieuwe Steen Investments NV	Euronext Amsterdam	T	n/a	Habas HZ Investments (1960) Ltd	Tel Aviv Stock Exchange	2007-01-19	2007-02-16	A
	Marfin Popular Bank Public Co., Ltd	Athens Stock Exchange	M	S	Piraeus Bank SA	Athens Stock Exchenge	2007-01-11	2007-03-07	A
North America	Phoenix Technologies Ltd	NASDAQ National Market	A	C	Ramius Capital Group LLC	n/a	2006-07-06	2007-02-06	A
	Clean Power Income Fund	Toronto Stock Exchenge	A	B	Algonquin Power Income Fund	Toronto Stock Exchange	2007-02-26	2007-04-19	A
	AccountAbilities Inc	OTC Bulletin Board	T	S	Tilden Associates Inc	NASDAQ OTC Bulletin Board	2007-02-16	2007-04-26	A
	Centerra Gold Inc	Toronto Stock Exchenge	M	n/a	Eldorado Gold Corporation	Toronto Stock Exchange	2007-02-16	2007-02-26	M
	Dynasty Gold	TSX Venture	A	S	Buffalo Gold Ltd	TSX Venture	2007-03-13	2007-04-26	A

Table F. Scatter Plots Sorted by Category and Expected Return Model Day 1 to 30

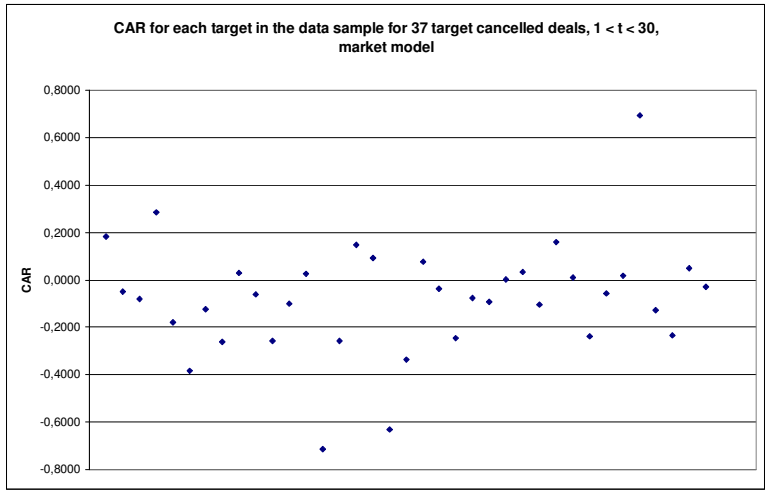
F1. Scatter Plot All Deals 1 to 30- Market Model



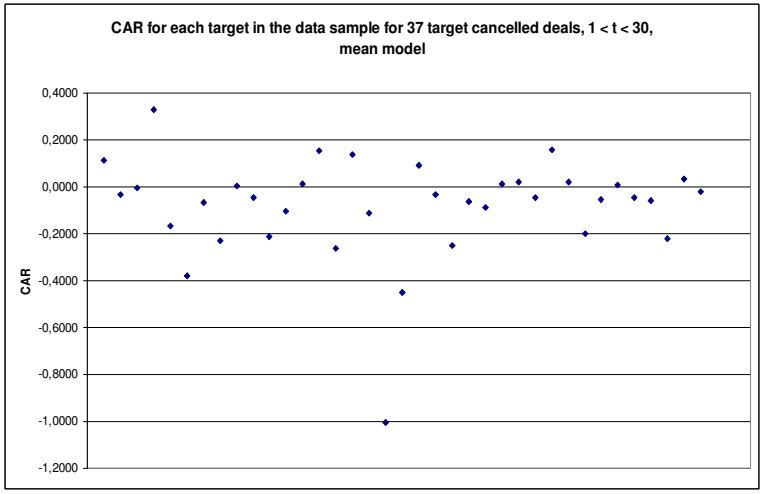
F2. Scatter Plot All Deals Day 1 to 30- Mean Model



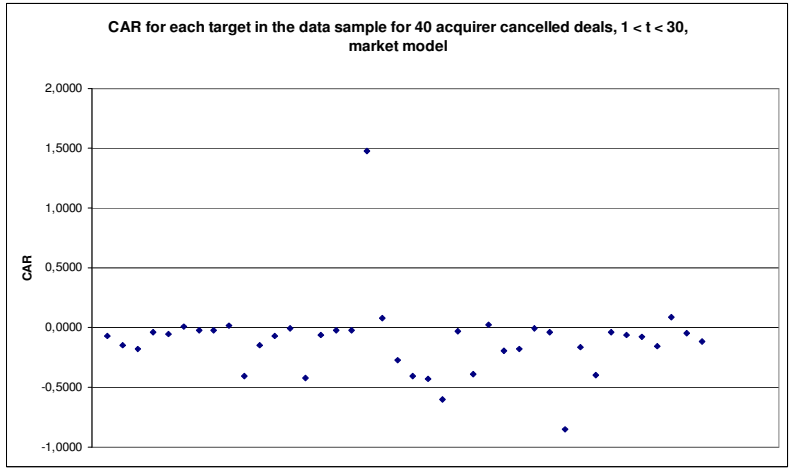
F3. Scatter Plot Target Cancels Deal Day 1 to 30- Market Model



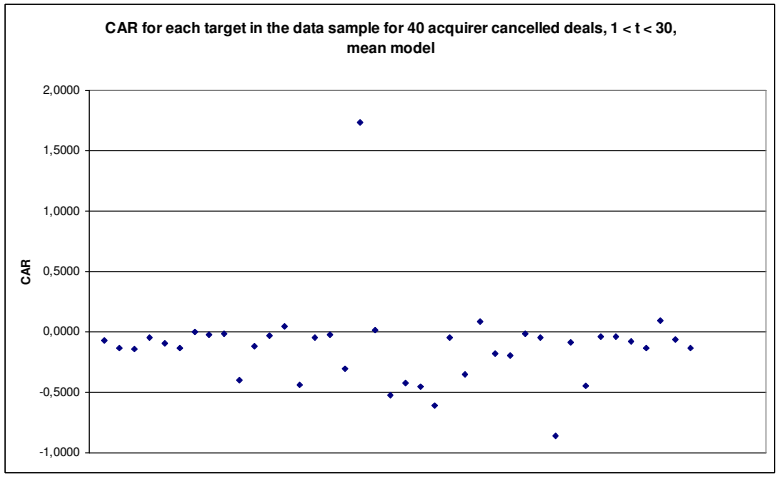
F4. Scatter Plot Target Cancels Deal Day 1 to 30- Mean Model



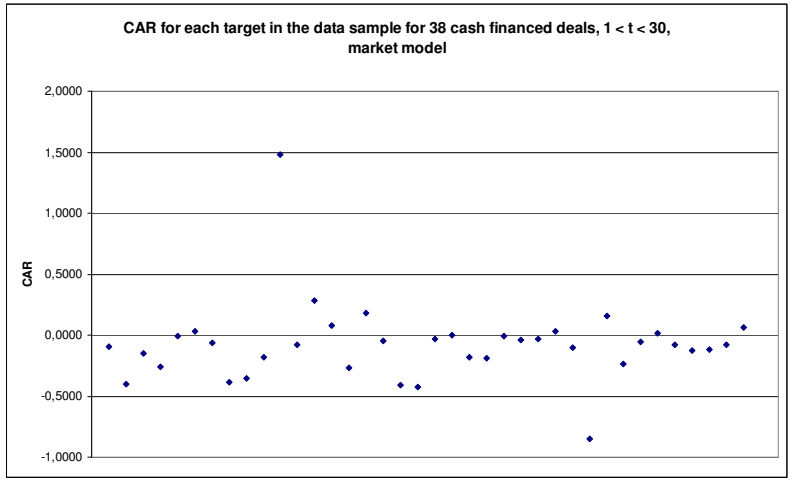
F5. Scatter Plot Acquirer Cancels Deal Day 1 to 30- Market Model



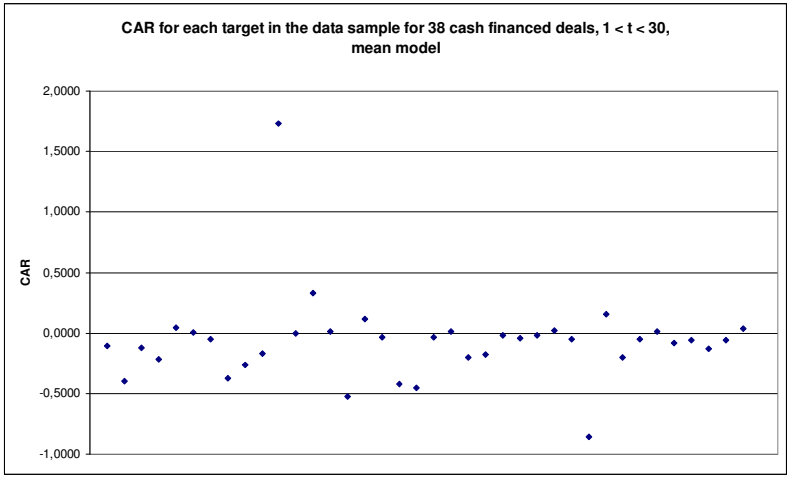
F6. Scatter Plot Acquirer Cancels Deal Day 1 to 30- Mean Model



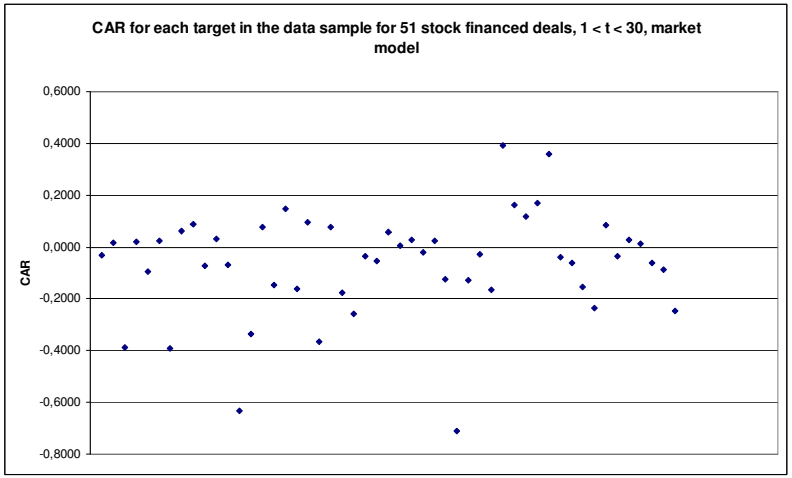
F7. Scatter Plot Cash Financed Deal Day 1 to 30- Market Model



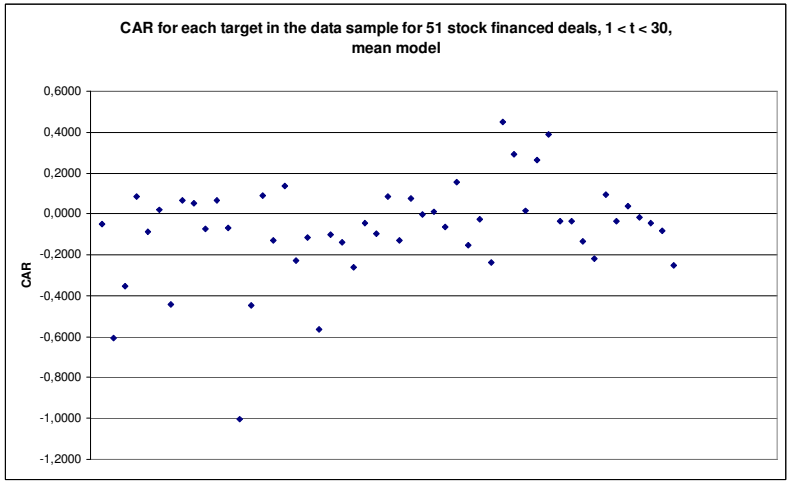
F8. Scatter Plot Acquirer Cancels Deal Day 1 to 30- Mean Model



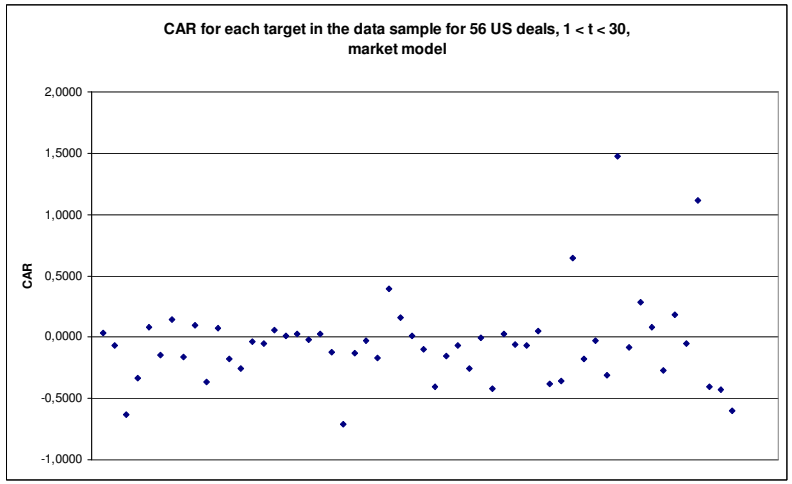
F9. Scatter Plot Stock Financed Deal Day 1 to 30- Market Model



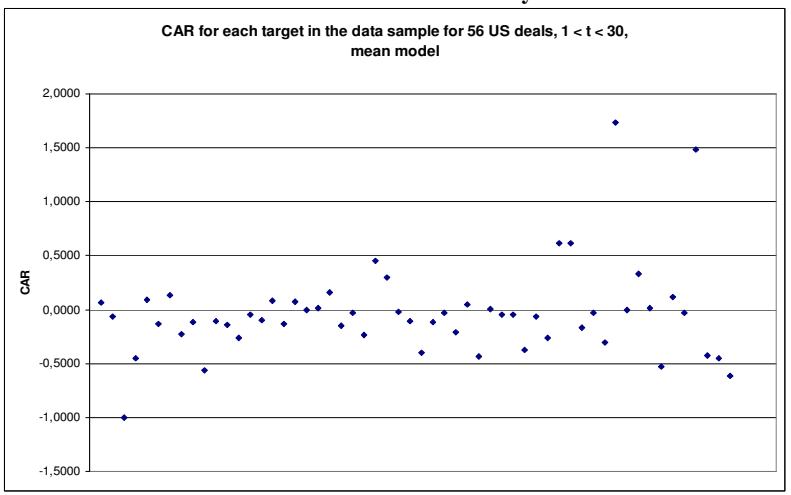
F10. Scatter Plot Stock Financed Deal Day 1 to 30- Mean Model



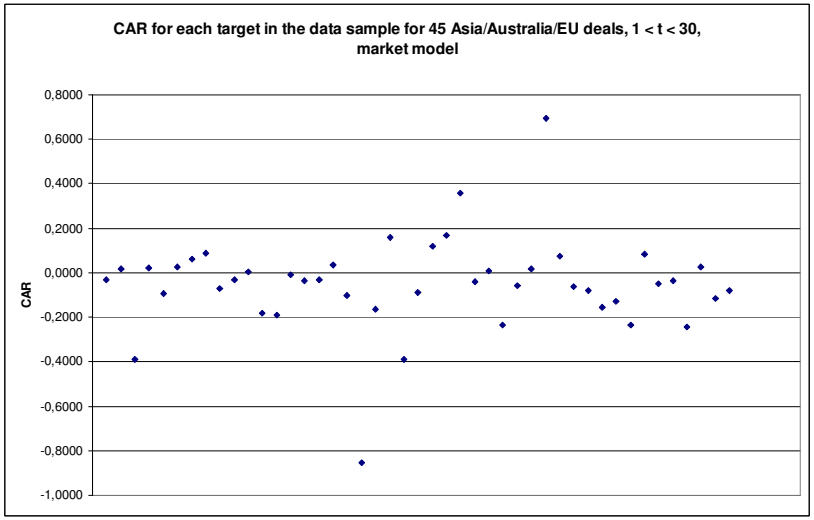
F11. Scatter Plot North American Deals Day 1 to 30- Market Model



F12. Scatter Plot North American Deals Day 1 to 30- Mean Model



F13. Scatter Plot Non-American Deals Day 1 to 30- Market Model



F14. Scatter Plot Non-American Deals Day 1 to 30- Mean Model