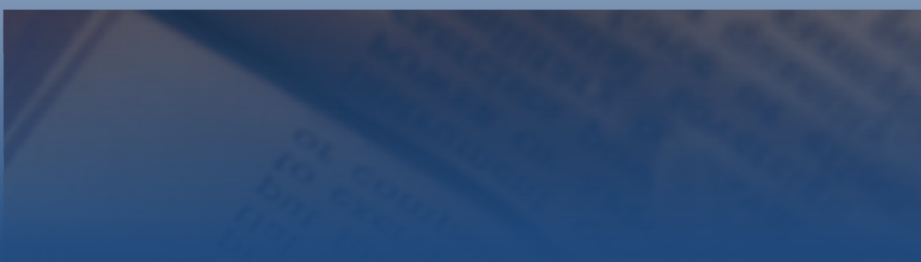


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- The Effect of Equity Issue Announcement on Large Cap,
Mid Cap and Small Cap



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- Title:** The Effect of Equity Issue Announcement on Large Cap, Mid Cap and Small Cap
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- Theme:** Department of Economics
- Keywords:** Event study, efficient market hypothesis, abnormal returns, equity issues, market capitalization, Stockholm Stock Exchange
- Purpose:** The main purpose of this study is to examine how announcement of equity issues affect companies within large cap, mid cap and small cap.
- Method:** The study is based on 28 companies listed on the Stockholm Stock Exchange, which announced seasoned equity offerings during the time frame of 2007-01-01 to 2011-06-01. The companies studied are divided into three groups according to their market capitalization size: small cap, mid cap or large cap. The division enables us to observe any differences in reaction on stock prices upon the announcement. Since we want to see the impact an equity issue offering has on a stock price, an event study has been conducted. The data is collected from secondary sources through articles, literature and websites. Electronic websites as Avanza.se DI.se and Yahoo finance have been used to collect equity issue dates and stock prices.
- Conclusion:** Our study showed a decline in stock prices after an equity issue announcement within all three market capitalization groups. Support was found in previous research and relevant theories. A t-test helped us confirm that no semi-strong market efficiency exists among the three market capitalization groups. Large Cap, mid cap and small cap all show different progress after an equity issue announcement.

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1. Introduction

1.1 Background

The stock market is a vital place for companies that need financing to support their business operations. The market is also important to the general public who invest capital in the stock market in order to receive returns on their investments. However, not all companies are eligible to issue stocks on the stock market. There is a distinction between private and public companies. Public companies are listed on the stock market and the general public can purchase their shares. The requirements in Sweden are that these companies have a minimum capital of 500 000 kronor. Whereas private companies are of smaller size with a minimum capital of 50 000 kronor, and therefore not listed on the stock market. The stocks of public companies in Sweden are traded mainly on NASDAQ OMX Stockholm.

When a company is in need of money, it issues shares on the stock market. By obtaining the company's shares, the shareholder, provides the company with funding and at the same time becomes a partial owner of the firm. It also entitles the shareholder the right to receive a dividend on the invested money if the company makes a profit in the future. Owning shares in a corporation also gives the shareholder the right to vote at the company's general meetings.¹

New shares can be issued at the stock market by an initial public offering (IPO) or a seasoned equity offering (SEO). An initial public offering occurs when a company enters the exchange list and puts its shares on the market for the first time. However, if a corporation already is on the exchange list and needs further funding, it is achievable through seasoned equity offering.²

¹ Strömberg, L. (2010)

² Berk, J. & DeMarzo, P. (2011)

1.2 Purpose

The main purpose of this study is to examine how an announcement of a seasoned equity offering affects companies within large cap, mid cap and small cap. We are interested in finding out how companies in Sweden react and therefore we have narrowed it down to equity issue announcements by firms listed on the small-, mid- and large cap list on Stockholm Stock Exchange. It is also of great importance to see if there are any differences between the three groups in how their stock prices react to the announcements.

1.3 Problem

Most research shows that stock prices react in a negative way upon equity issue announcements. However, we did not come across any previous research which studies differences in how negatively or quickly stock prices react to equity issue announcements depending on the issuing company's size. How do companies listed on Stockholm Stock Exchange react upon equity issue announcement? Are there any observable differences between small cap, mid cap and large caps reaction to equity issue announcements? These are the questions we are interested in finding answers to with this study. We would also like to see if our results are consistent with previous research in this field.

1.4 Limitations with the study

Limitations have been made due to lack of time and available data. 28 companies were chosen because of their share issuance during the time frame of 2007-01-01 to 2011-06-01. All companies are divided into different market capitalizations and found on the Stockholm Stock Exchange list during the time frame. Due to the limited number of companies, we have chosen not to divide them according to industry.

1.5 Disposition

This study starts off by introducing the subject and the purpose of the paper to the reader. A section with method and limitations with the study is described and followed by a practical reference frame. The reference frame gives the reader valid and concise information about the upcoming part. After the description of market capitalization and equity issues we encounter our theoretical reference frame where the efficient market theory and the adverse selection theory are defined. Following the theoretical part is a section where methodology of an event study is described. The event study, which is conducted with the help of available data, provides us with results that are later analyzed and summarized.

2. Practical reference frame

2.1 Market Capitalization

Market capitalisation, also known as market cap, is divided into large cap, mid cap and small cap. Companies are divided into groups according to their stock value on the market. The stock value is conducted by number of shares it has outstanding multiplied by the share price. In general, big companies are expected to be less risky while smaller companies have a greater growth possibility. The most rewarding strategy is considered to be a mixture of large cap, mid cap and small cap companies³.

2.1.1 Large Cap

The large cap list consists of the biggest companies with a value of 1 billion Euros. In this study, companies are chosen from the Stockholm Stock Exchange's own large cap list. Many investors prefer large companies because they are well established. Their stock values won't be affected in the same extend if the management is incompetent or if problems occur⁴.

2.1.2 Mid Cap

This list consists of companies that have a value in between 150 million Euros and 1 billion Euros. Mid cap investors have a tendency to overlook mid cap companies due to the preference of more drastic investments of smaller or larger firms. But as a middle child in a family, mid cap companies can provide the best of both worlds. They provide not only great growth potential but also more risk⁵.

³ http://finance.yahoo.com/funds/types/article/100613/Large-Cap_and_Small-Cap_Funds_Explained

⁴ Steverman, B. (2008)

⁵ DRIP Investor (2011)

2.1.3 Small Cap

Firms on the small cap list have a value that is lower than 150 million Euros⁶. Smaller companies are more sensitive to changes and problems than other market capitalizations. Investors prefer larger companies over smaller due to the lack of valid information regarding smaller companies. Therefore, smaller companies are seen as more risky to investors that need safety and predictability. An amateur that seeks to invest in companies feels more secure in investments within bigger companies because they are more popular and analyzed by the media and Wall Street in a higher degree.

An advantage with smaller companies is that they have more simple businesses and they are easier to understand than bigger companies. Even if there are not many analysts following the companies' performance, it's easier for an amateur to do research on their own according to their preferences.

Even though smaller companies have outperformed larger companies in different intervals, they have experienced a lot of setback due to the financial crisis of 2008. Small caps are, in general, more volatile and require extra research but they can also be the "next big thing"⁷.

2.2 Equity Issues

When a corporation seeks to offer liquidity to its investors it becomes a publicly traded firm. The first time a firm starts issuing shares is called initial public offering (IPO). Selling stock to the public can be considered as an advantage as well as a disadvantage for the company. The advantage is a greater liquidity and easier access to capital. Even though this strategy seems harmless it has its downsides too. The equity holders become more spread out and the loss of

⁶ Wilke, B. (2010)

⁷ Steverman, B. (2008)

control in the management team is harder to detect. Corporations that seek more funding for further growth issue what is known as seasoned equity offering (SEO). This procedure resembles the IPO but differs in the price-setting process. A stock price is already determined due to the existing presence on the stock market. SEOs can be divided into cash offers and rights offer. Cash offers are presented to a large scale of investors while rights offers are limited to the existing shareholders⁸.

In order to convince shareholders to buy more stocks in the issuing company, the firm has to give out a prospectus. The prospectus contains relevant information about the equity issue and its purpose. When shares are being issued a subscription price and a subscription time is stated in the prospectus. The subscription price has to be alluring, to attract shareholder. Putting a subscription price that is lower than the stock price on the exchange does it. Otherwise, the stocks would be cheaper to buy on the exchange and the share issuing would be worthless⁹.

⁸ Berk, J. & DeMarzo, P. (2011)

⁹ Wilke, B. (2010)

3. Theoretical reference frame

3.1 The efficient market hypothesis (EMH)

During the 1970s, a theory was established by Eugene Fama, more known as the efficient market hypothesis (EMH)¹⁰. EMH implies that the stock prices in the market have all the available information incorporated into them. It means that it is not possible for an investor to make additional money on the asset by acquiring new information since it will already be reflected in the price of the asset. Furthermore, the efficient market hypothesis is divided into three different levels of efficiency.

Weak market efficiency means that the price of an asset reflects all historical information. Thus it means that an investor cannot predict what the asset price will be in the future based on the past price movements of the asset. So even if an investor gathers information about the asset's previous prices and returns, he cannot make any assumptions about the future price of the asset based on that information, because the asset's price follows a random walk.

Semi-strong market efficiency states that even if an investor has access to all publicly available information such as annual reports, press releases, news and company announcements such as equity issues, even then he cannot make an excess return on the asset because that information has already been incorporated into the asset price¹¹.

In a semi-strong efficient market, the release of news, such as an equity issue announcement, should have an effect on stock prices on the same day of the announcement so that no investor can take advantage of the information. In some cases, the impact can be delayed until the next day due to the information being released too late or stock prices taking time to react to the news.

¹⁰ Poshakwale, S. (2005)

¹¹ Byström, H. (2007)

However, an abnormal return may occur before the actual announcement. This can be because the company may have given signals to the market that there will be an important announcement and therefore the market reacts to this before the actual announcement takes place. Another reason can be that the stock prices already differ from the normal stock price preceding the announcement. It can also be due to leakage of information, for instance, insiders may have leaked out the information beforehand¹².

Strong market efficiency indicates that even insider information is reflected in the asset price besides the historical and publicly available information. Therefore it is not even possible for insiders such as CEOs who have confidential information to make excess return on the asset¹³.

3.2 Adverse Selection

2001's Nobel Prize winners in Economics analysed the market from an asymmetric information angle. They used metaphors of used-car sales as a way of describing this theory. They argued that if a dealer is willing to sell a car for a much lower price a reason has to exist. There has to be something wrong with the car and refers to the car as a "lemon". In cases where prices have fallen, buyers have been sceptical of the seller's motivation. For that reason, buyers will not purchase a car until it's profoundly discounted. Even owners that have high-quality cars are unwilling to sell due to the fact that buyers will think that the cars are in a bad condition and will offer low prices. This theory is referred as adverse selection and extends to different areas. The theory emphasizes situations where sellers contain more information than the consumers.

When companies issue equity, they tend to explain it as a desire to develop new projects that need funding. However, the shareholder will doubt the company's intentions according to the "lemon" theory. The buyers suspect that the owner

¹² Edwin J E.; Martin J G.; Stephen J B. & William N G. (2007)

¹³ Byström, H. (2007)

has valid information about the company's current financial situation and future plans. This will make the buyer doubt the investment opportunity. The shareholder will therefore pay as little as possible to insure his investments¹⁴.

In the article, *The Effect of Information Releases on the Pricing and Timing of Equity Issues*, Robert A. Korajczyk, Deborah J. Lucas and Robert L. McDonalds emphasize the timing of new issues and the relationship between pricing and timing of new issues. They discovered that companies decide to issue shares immediately after good news about the firm has reached the public, such as a positive earnings announcement. After such an announcement, the public will be less likely to draw its own conclusion about the company's financial situation and the stock prices will not react as negatively as they would if there had not been a public announcement about the current situation of the company.

On the other hand, if the company knows that some negative news about the company will reach the public, such as current value of the company being below the market value, then they may try to issue new shares before the news spreads to the public. Additionally, there is a correlation between the public announcement and the equity issue announcement, the longer the gap between the two announcements; the more negatively will the stock prices react on the event day¹⁵.

¹⁴ Berk, J. & DeMarzo, P. (2011)

¹⁵ Korajczyk, R.; Lucas, D. & McDonald, R. (1991)

4. Methodology

4.1 Event Study

The methodology of an event study grew to be important during the 1980s, it is considered to be a significant tool in the field of financial research¹⁶. An event study measures how an announcement of a specific event affects the value of the firm. Given that there is rationality in the market, the effect of an announcement will be reflected into security prices¹⁷. The main purpose of event studies is to see if the market reacts positively or negatively to new information¹⁸. Event studies are used in many fields, in accounting and finance but also during mergers, acquisitions, earnings, and issues of new debt or equity

An event study requires 8 steps:

1. Identify the Event date.
2. Define the Event Window
3. Define the estimation period
4. Calculate normal returns
5. Calculate abnormal returns
6. Calculate average abnormal returns (AAR)
7. Calculate cumulative abnormal returns (CAAR)
8. Statistical significance of AR¹⁹

4.1.1 Identify the Event date

The first step in conducting an event study is to define the event date. These companies were chosen on the behalf of their equity issue dates. The event date is defined as the day of the press release to the public. The press release dates were taken from avanza.se and the companies' respective web pages. After the dates have been established, the event date is defined as $t = 0$.

¹⁶ Wells, W H (2004)

¹⁷ Mackinlay, C. (1997)

¹⁸ Wells, W H (2004)

¹⁹ Seiler, M J. (2004)

It is hard to pinpoint the actual date of the information release due to inconsistencies and delays from providers²⁰.

4.1.2 Define the Event Window

The next step is to define the event window, which we have chosen to be a time frame of -15 days before the event date and +15 days after the event date.

Since a recommended time frame does not exist, we have chosen this to be the ultimate time frame for us. The reason for this time frame is to catch any leakage that can occur before the announcement day. Otherwise, the full effect won't be measured properly²¹.

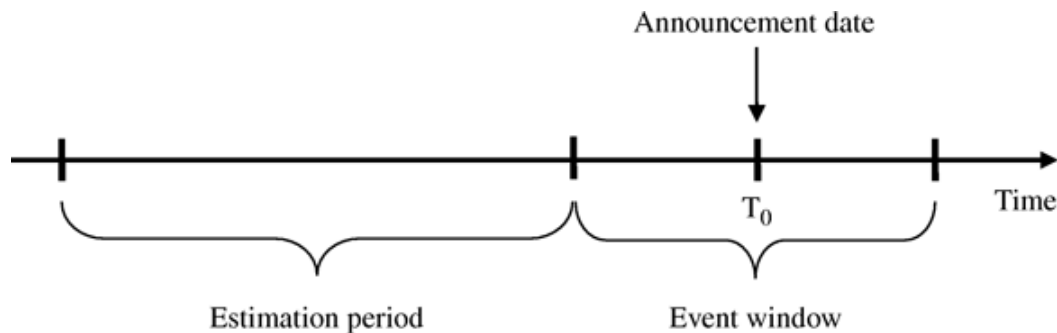


Figure 1: Timeline of Event Study

4.1.3 Define the estimation period

After the event window has been defined, an estimation period has to be recognized. An estimation period is a period where no event has occurred. The purpose is to establish what the return would have been if it wasn't for the

²⁰ Seiler, M J. (2004)

²¹ *ibid.*

event. In our research we will be using an estimation period of 100 days. The time frame should capture the relationship between the market and the stock²².

4.1.4 Calculating normal returns

Next step consists of measuring the normal return on the market using OMXS30 as a standard and the normal return of a stock. This gives us the actual return and the expected return²³.

$$R_i = \frac{P_i - P_{i-1}}{P_{i-1}}$$

Formula 1: Actual return

4.1.5 Calculating abnormal returns

There are different methods of measuring abnormal returns but the most common one is using the market model, which relates the return of a stock to the return of the market. The difference between the market model and other models being used for event studies is that in the market model there is a risk incorporated to measure the return.

$$AR_i = \alpha_i + \beta_i R_m + \varepsilon_i$$

Formula 2: Abnormal return

The abnormal return formula contains an alpha and a beta. These values are estimated by using the ordinary least-square regression (OLS) over the estimation window. Estimating values for alpha and beta gives us a more accurate measurement of the abnormal return²⁴.

Beta is calculated for each company and it shows us a stock's market risk in relations to the average stock. A beta of 1,00 is an indication of a stock with an

²² Seiler, M J. (2004)

²³ *ibid.*

²⁴ Seiler, M J. (2004)

average risk. A beta above 1,00 implies a higher risk. A stock with a higher risk experiences a higher return than usual²⁵.

The next component used is alpha, which gives us the expected return for a stock without being affected by market movements. A negative alpha indicates that the stock is overpriced. Which consequently means a lower expected return. While a negative alpha indicates a lower return, a positive alpha implies a higher return²⁶.

$$\beta = \frac{\sum_{T+1}^T (R_{it} - R_m)(R_{it} - R_m)}{\sum_{T+1}^T (R_{it} - R_m)^2}$$

Formula 3: Beta

$$\alpha = R_m - \beta R_m$$

Formula 4: Alpha

4.1.6 Calculate average abnormal returns (AAR)

The next step is to aggregate the daily abnormal returns for each company across each day in the event window. Average abnormal return AAR lets us know if the event creates a different return than the one that was expected²⁷.

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$$

Formula 6: Average Abnormal Return

4.1.7 Calculate cumulative average abnormal returns (CAAR)

²⁵ Bodie, Z.; Kane, A. & Marcus, A J. (2010)

²⁶ *ibid.*

²⁷ Wells, W H. (2004)

Once calculations have been completed and abnormal return is determined in each company a cumulative average abnormal return (CAAR) is calculated. CAAR measures the total abnormal return throughout the event window. It's a summary of all abnormal returns from the beginning of the event window till the end²⁸.

$$CAAR_T = \sum_{t=-5}^T AAR_t$$

Formula 7: Cumulative Average Abnormal return

4.1.8 Statistical significance of AR

The next step is to use statistical testing to see if the announcement of the event had a significant effect on the stock price during the event window²⁹. The first step is to create a null hypothesis that states that no changes have occurred due to the announcement day. The alternative hypothesis states a change of the stock price do to the event.

H₀ : Equity issues do not have any effect on prices

H₁ : Equity issues do have an effect on prices

After the hypothesis has been stated our main goal is to see if the null hypothesis should be rejected. If the null hypothesis is rejected we are able to state something with a statistical certainty. If the null hypothesis is not rejected we describe it as not having enough statistical material to determine anything. In this study a two-sided test is used to determine if there is significance³⁰.

²⁸ Benninga, S. (2008)

²⁹ *ibid.*

³⁰ Andren, T. (2007)

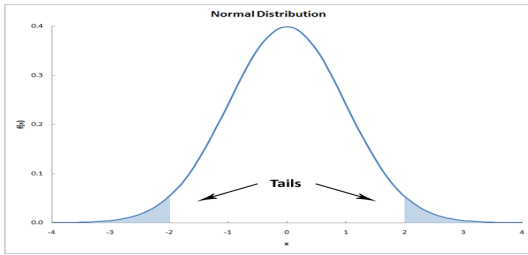


Figure 2: Normal distribution

In our study, dividing abnormal return AR with the variance will form the test statistic. The value will be between $-1,96$ and $1,96$ in 95% of the cases. If the value lies between these limitations the null hypothesis is correct and the announcement of share issues will not have an effect on the stock price³¹.

$$T = \frac{AR_{it}}{\sqrt{Var(AR_{it})}}$$

Formula 8: t-distribution

³¹ Benninga, S. (2008)

5. Previous Research

In the article, *Seasoned Equity Offerings*, authors Ronald W Masulis and Ashok N Korwar looked at how initial public offerings and seasonal equity offerings announcements impact the stock prices. Their study consists of a sample of total 1406 equity issues by industrial companies and public utilities (690 by industrial companies and 716 by public utilities) from 1963 to 1980. The companies are listed on either NYSE or AMEX. In their study they found that average abnormal return (AAR) on announcement day is -3, 25% for industrial firms and -0, 68% for public utilities. Masulis and Korwar (1986) found support for this result in Leland and Pyle's signaling model where the negative price effect on announcement day is explained by the fact that the issuance of shares to the public is interpreted by the public as a negative signal from the company manager. If the company was doing well, the manager would not want other investors to gain from future profits. Therefore, the more managers' ownership is spread out, the bigger is the decline in stock price.

Another theory, which they also found significance to their findings, is the Myers and Majluf (1984) adverse selection model. In this model it is assumed that a stock offering is made because of the stock being overvalued, so it is a win situation for current stockholders. New investors interpret this as information being withheld by the company managers and therefore the value of the stock declines on the announcement day. Masulis and Korwar (1986) also found that equity issues are usually offered after a period of increased stock prices.³²

In the article, *Equity Issues and Offering Dilution*, Paul Asquith and David W. Mullins Jr. looked at what impact equity issue announcement has on stock prices through an event study and regression analysis. The study is based on 531 equity issues announced in Wall Street Journal by firms listed on the NYSE (New York Stock Exchange) or ASE (American Stock Exchange) during a time period from 1963 to 1981. The method used in this study is by calculating daily

³² Masulis, R. & Korwar, A. (1985)

abnormal returns for each stock during an event window of 21 days (10 days before and 10 days after the announcement day) and then calculating average abnormal return and cumulative abnormal return and performing a t-test to determine the significance of the announcement on the stock price. They found that more than 80% of the equity issues lead to a decline in stock prices on the announcement day with an average price decline of -2.7 %. The authors affirmed that their findings are consistent with the semi strong market efficiency hypothesis since the observed abnormal returns are statistically significant on the announcement day. Furthermore, they also found support from the hypothesis of adverse selection in their results, meaning that the reason for the price decline is because investors feel that the insiders have superior information about the company and when the company issues new equity it is considered as a sign of the company not doing so well. Also support for the hypothesis of a downward sloping demand for shares is found in this study.³³

In the article, *The New Issues Puzzle*, Tim Loughran and Jay R. Ritter have followed companies in the United States issuing new shares and studied its long run impact on stock prices compared to non issuing companies. The study includes 4753 companies issuing initial public offering and 3702 companies issuing seasoned equity offering between 1970 and 1990. The stock prices of the companies issuing new shares are then followed from the announcement day till five years after. The stock returns of the issuing companies are compared to the non-issuing companies during these five years and they see that the companies that issue new shares underperform compared to those who did not. The study shows that for companies issuing IPO the average annual return is five percent while it is 12 percent for equivalent non-issuing companies and for companies carrying out SEO the average annual return is seven percent compared to fifteen percent for non-issuing firms. These differences in stock returns show that an investor needs to invest 44% more in the issuing firms to receive the same return as in the non-issuing firms after five years. The authors find their

³³ Asquith, P. & Mullins, W D. (1985)

findings to support the idea that companies issue new shares when their stocks are overvalued.³⁴

³⁴ Loughran, T. & Ritter, J R. (1995)

6. Results

Our research involved 28 companies that issued shares during the period of 2007-01-01 to 2011-06-01. These are divided into 10 companies within small cap, 10 companies within mid cap and 8 companies within large cap. Excel made it possible for us to summarize our calculations and provided us with different charts that we will later analyse.

Small Cap

Figure 3 demonstrates the cumulative average abnormal return (CAAR) for companies within small cap. We see that the curve fluctuates around 0 before the announcement and the returns are mainly negative. One day before the announcement day, the curves turns from being + 1,3 % to reaching -1 % on the event day. After the announcement from day 6 we only observe positive returns. The fluctuations around zero are small and no big changes are found.

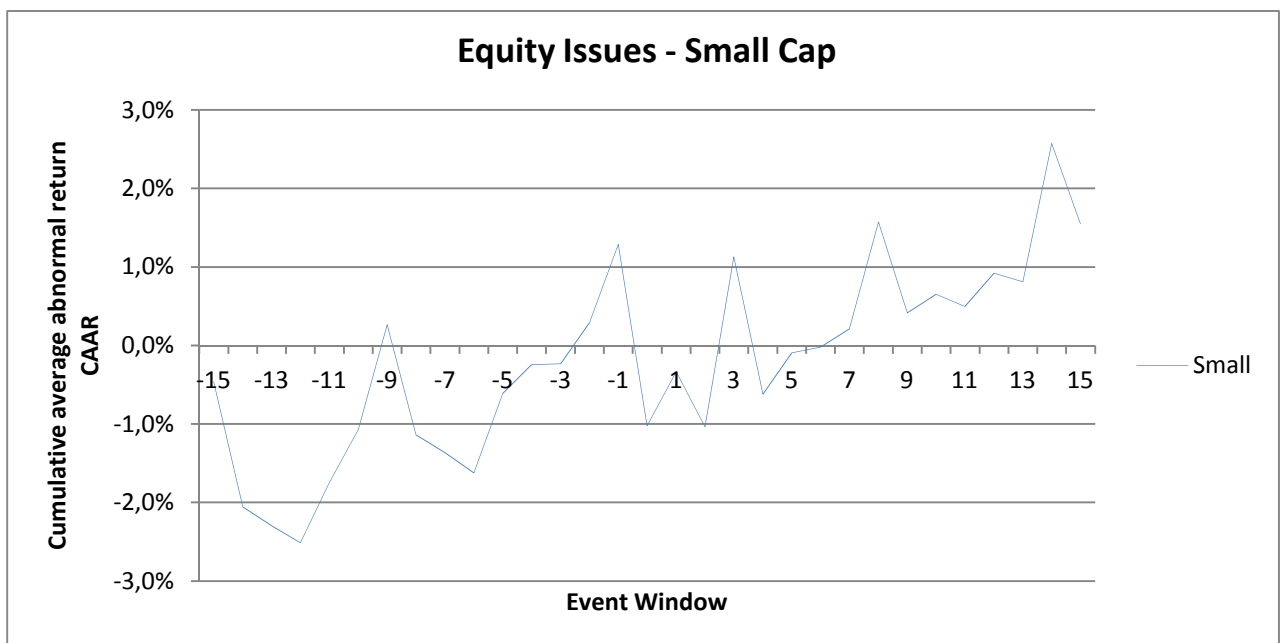


Figure 3: CAAR for Small Cap during the event window.

Mid Cap

Figure 4 shows the CAAR curve for mid cap. We see that the curve is relatively steady till one day before the announcement and then it starts sloping downwards. The cumulative abnormal return (CAAR) falls drastically during the first three days after the announcement and falls down to -28%. It keeps on falling and reaches a minimum of -35%.

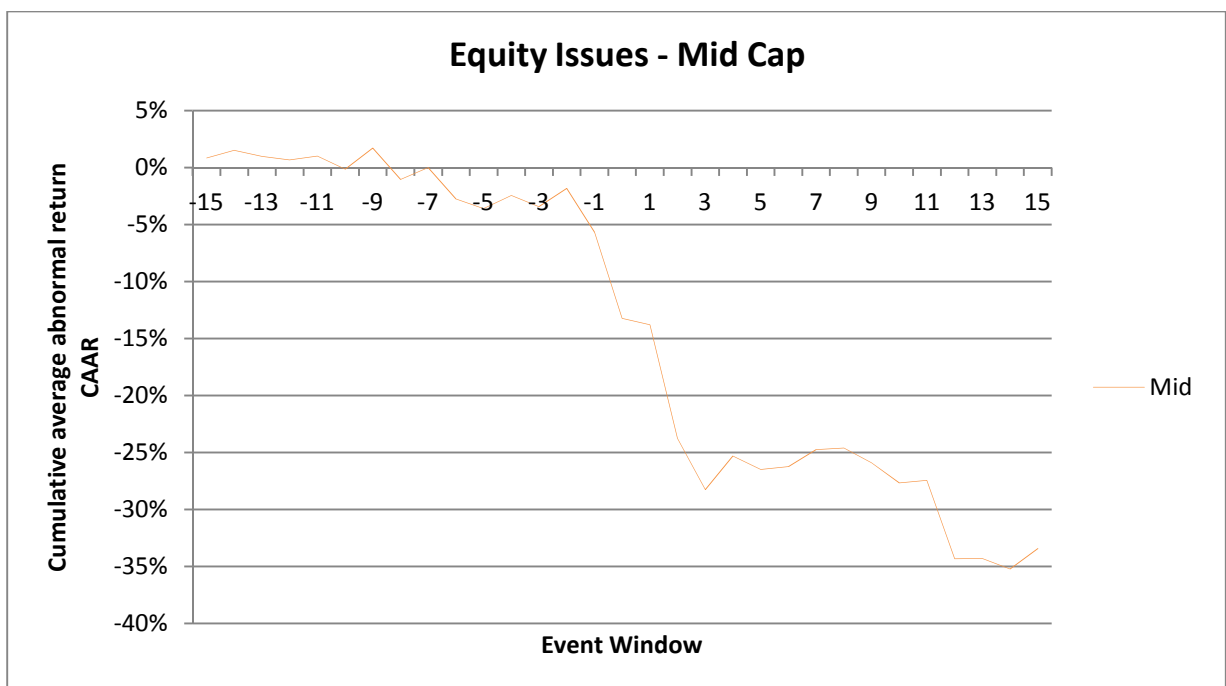


Figure 4: CAAR for Mid Cap during the event window.

Large Cap

Figure 5 shows the CAAR for large cap. The curve shows a more regular movement around 0 than what the mid cap does. However, a significant decrease in share prices reveals itself after the announcement day. From announcement day until the 7th day there is a 7% fall in return. After the 11th day the prices rise again to their more or less normal level.

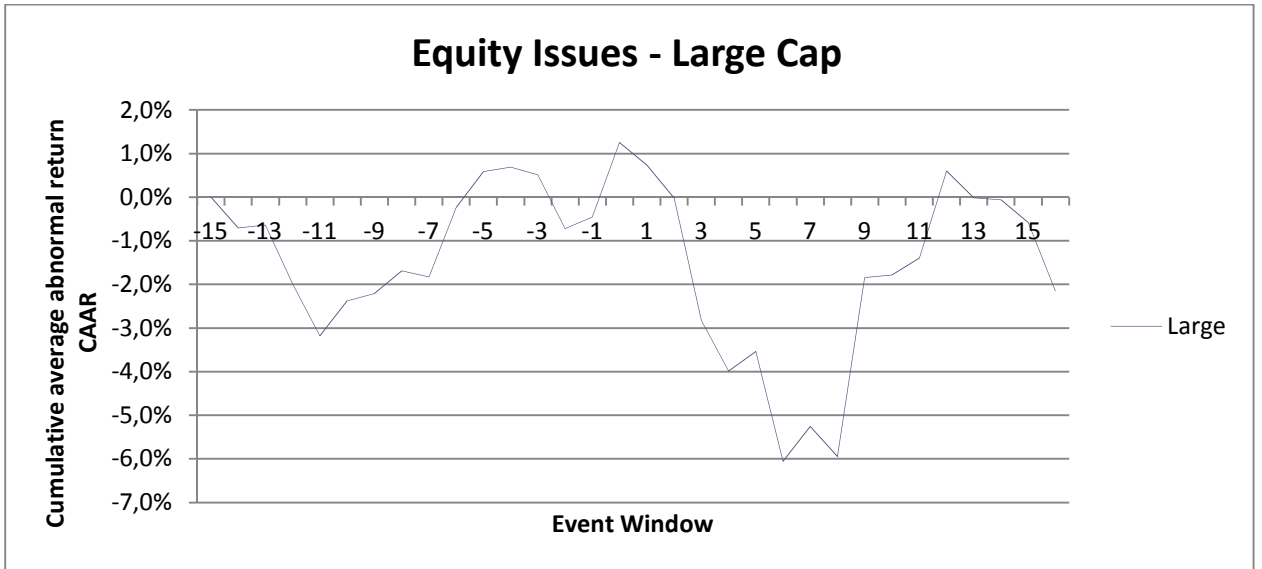


Figure 5: CAAR for Large Cap during the event window.

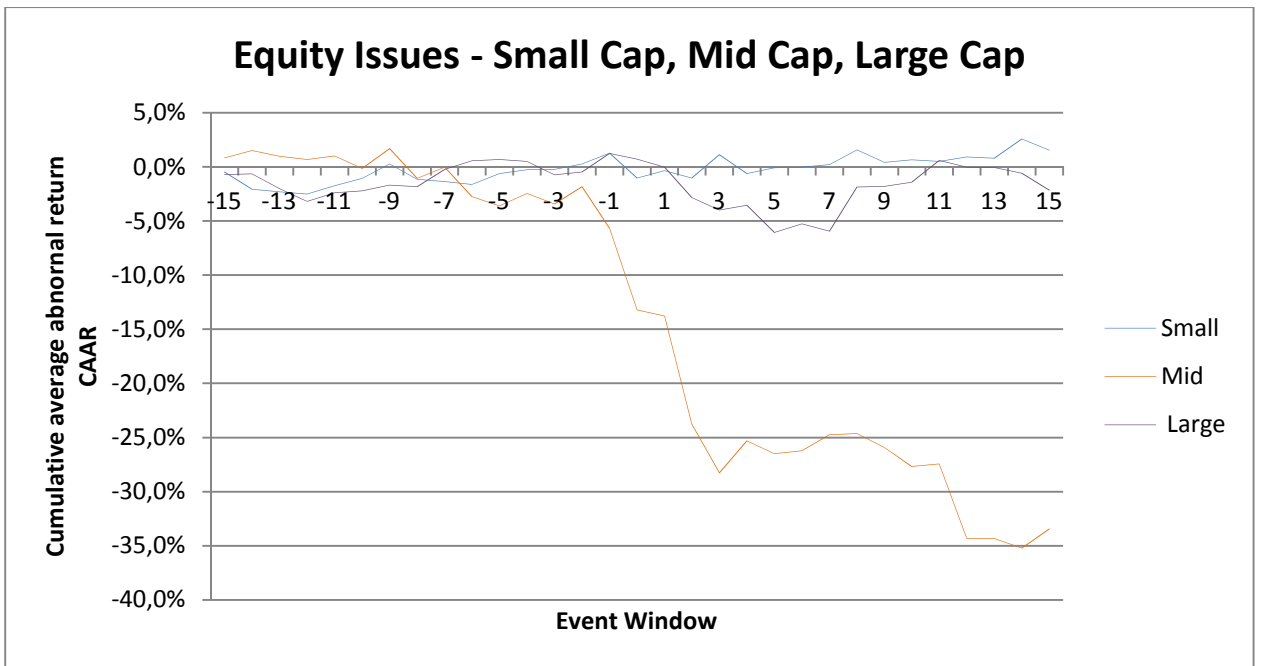


Figure 6: CAAR for Small Cap, Mid Cap and Large Cap companies.

Figure 6 shows a combined chart with all three groups and their relationship towards each other. Larger and smaller companies follow a similar path around 0. While mid-sized companies experience a bigger downfall in return. The difference between a decrease in mid cap and large cap creates a gap of 24%. The difference between small cap and mid cap is as large as 29%.

Average Abnormal Return (AAR)

Aggregated abnormal returns are combined into one figure to show the difference between these three market capitalizations.

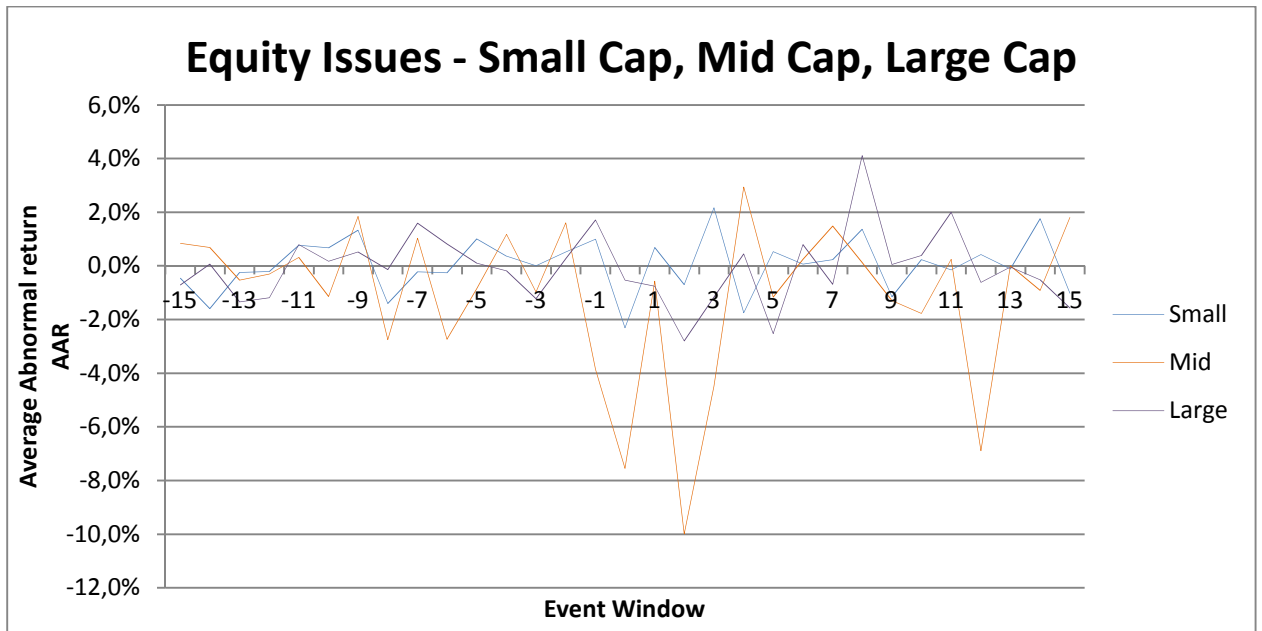


Figure 7: AAR for Small Cap, Mid Cap and Large Cap companies.

In figure 7, there is a significant decrease of 7,5 % in the mid cap curve -1 day before the announcement day and continuous falling to +1 day after the announcement day where it increases back towards zero. The abnormal return falls yet again immediately after day +1 and drops around 10 %. Two days after the decrease an increase of 13 % occurs. It fluctuates around 0 but falls yet again on the 12th day. The falls is not a negative as before and the return jumps back immediately. A difference between larger and smaller companies is also detected. Larger companies fluctuate more around zero and the curve falls and increase in a more a steeper and aggressive way. All of them experience a negative return on the announcement day but in different scales.

T-distribution

A t-distribution has been used on each day of the event window in all companies within different market capitalizations. The “Yes” states that there is a significance and occurs when return is smaller than -1,96 or higher than 1,96.

In figure 9 in the appendices we see the t-distribution for small cap companies where three of the companies show a significant value on the announcement day or the following day. When looking at mid cap companies' in figure 10 we see that 7 companies show significant values on the announcement day or the day following the announcement. For large caps in figure 18 we see that only one company shows significant value on the announcement day. We also observe significant results before and after the event day for most of the companies in all three groups.

7. Analysis

Our study shows that the average abnormal return is negative on the announcement day for all three market capitalizations. This outcome is consistent with previous research of Masulis and Korwar (1986) and Asquith and Mullins (1985) where a decline in stock price is found on the announcement day.

An explanation for the decline in stock prices can be found in the adverse selection theory. According to this theory, investors are skeptical to new issue announcements by companies because they feel the company owners have superior information and this information is being withheld from the investors. They doubt the true intentions behind the equity issue announcement and therefore we observe a price decline in the stock price.

When looking at the t-distribution for all three of the market capitalization groups, we see a pattern where most companies show significant abnormal returns before and after the event day. The significant results before the event day can be due to three reasons. There could have been a leakage from insiders of the company about the equity issue announcement and therefore the market reacts to this before the announcement. Another reason can be that the investors already knew that some kind of an important announcement will take place and therefore reacts beforehand. A third reason can be that the abnormal returns reflected in the event study before the event day is because the company might have decided to issue shares after a period of abnormally high stock prices and therefore we find significant abnormal returns several days before the announcement. Companies usually issue new shares after a period of unusually high returns according to Masulis and Korwar (1986). We also observe a delay in significant abnormal returns within all three groups and this can be due to the information being released too late or stock prices having a delayed response to the announcement.

In semi-strong markets, everyone has access to the publicly available information and the prices will adapt according to this new information

immediately after its release so that no investors can take advantage of the information. Based on the results in our study, we see that none of the three market capitalization groups are semi strong efficient. However, we see that in the mid cap group most companies show significant abnormal returns on the announcement day or the following day. So when looking at the behavior, the mid cap group shows the most semi-strong efficient market likely behavior.

Furthermore, when looking at the cumulative average abnormal return (CAAR) curves for small cap, mid cap and large cap we notice a remarkable difference between the three during the event window.

In small caps we observe a price rise prior to the announcement. Korajczyk et al. (1991) finds that a reason for this increase can be because the companies have released positive news as an earnings announcement beforehand. This can also explain the rise in stock prices for small cap that continues after the announcement. Also we find that the decrease on the announcement day is not as drastic for small cap, -1% on the announcement day and this can also be supported by Korajczyk et al. (1991) who finds that the smaller the gap between the news of the company and the equity issue announcement, the less drastic will the price decline be on the announcement day.

For midcaps we see a decline in stock prices from day -7 but the biggest decrease occurs during day -1. A reason for this could be, according to Korajczyk et al. (1991), that the companies have made the issuance after some negative news reached the public about their performance. Thus, the stock prices continue to show a negative trend after the announcement day.

For large cap we see a rise in stock prices before the announcement day and after the announcement day we see a drastic decline. This decrease recovers itself from day +7 and the stock prices seem to move back to their more or less normal level. As with small cap, an explanation for the increase in stock price before the event day may have been due to a positive announcement. We also observe that the stock prices for large cap rise back to normal levels in a relatively short time after the announcement compared to mid cap, where prices do not rise back during the event window. An explanation for this can be that

investors have more confidence in large well established companies and therefore they are not as affected by the price decline in the long run.

Our calculations show that the smaller companies outperform the mid cap and large cap companies by having an abnormal return that is close to 0 and rising at the end of the event window. Small cap companies don't seem as affected by the news in general as the other two groups do. An explanation for this could be that investors and analysts are not that attentive when smaller companies issue share on market. Another reason can be that smaller companies do not issue shares in the same extent and amount as the large ones.

8. Conclusion

The main purpose of this study is to examine how an announcement of a seasoned equity offering affects companies within large cap, mid cap and small cap. There is also a desire to compare their reactions with one another. With the help of our theories and earlier research we have been able to analyze and explain our results.

The results show that all market capitalization groups experience a decline in stock prices on the announcement day. This is consistent with previous research of Masulis & Korwar (1986) and Asquith & Mullins (1985). Nevertheless, a decline in stock prices could also be explained as doubt from investors about managers' true intentions behind equity issue announcements.

T-distribution revealed that most companies had significant abnormal returns both after and before the event day. Support for this behavior was due to three different factors. Delays on the abnormal returns were due to information being released to late. Based on the results, we see that none of the three market capitalization groups are semi-strong efficient but mid cap shows a stronger behavior towards it than the other two.

Cumulative average abnormal returns (CAAR) emphasized the difference between the three market capitalizations. Small cap didn't react as much on the announcement as the other groups did and showed an up moving trend in stock prices during the event window. CAAR also showed that mid cap experienced a larger decrease that remained throughout the event window. Large cap reacted a bit more negatively to the announcement than what small cap did but it also recovered fast to its normal level.

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10. Appendices

LARGE CAP	Share issue dates	Alpha	Beta
* SSAB-A.ST (SSAB SVENSKT STÅL AB)	24-Jul-07	0.003	1.375
* GETI-B.ST (GETINGE AB)	1-Feb-08	0.001	-0.054
* MEDA-A.ST (MEDA AB)	14-Oct-08	0.002	0.871
* NDA-SEK.ST (NORDEA BANK AB)	10-Feb-09	-0.002	1.174
* HUSQ-A.ST (HUSQVARNA AB)	20-Feb-09	-0.001	0.885
* TREL-B.ST (TRELLEBORG AB)	23-Mar-09	-0.011	0.333
* SWED-A.ST (SWEDBANK AB)	14-Sep-09	0.004	1.642
* HEXA-B.ST (HEXAGON AB)	25-Oct-10	0.002	1.310
MID CAP			
* NSP-B.ST (NORDIC SERVICE PARTNERS HOLDING AB)	10-Nov-08	-0.0023	0.811
* GUNN.ST (GUNNEBO AB)	23-Oct-09	0.0015	0.478
* TRAD.ST (TRADEDOUBLER)	3-Nov-09	0.0008	0.591
* SAGA.ST (SAGAX AB)	15-Feb-10	0.0043	-0.053
* SAS.ST (SAS AB)	6-Apr-10	-0.0069	1.384
* PAR.ST (PA RESOURCES)	7-May-10	-0.0035	1.238
* CORE.ST (COREM PROPERTY GROUP AB)	15-Oct-10	0.0011	0.305
* ENRO.ST (ENIRO AB)	28-Oct-10	-0.0111	1.726
* SOBI.ST (SWEDISH ORPHAN BIOVITRUM AB)	29-Mar-11	-0.0047	0.700
* BINV.ST (BIOINVENT INTERNATIONAL AB)	1-Jun-11	-0.0001	-0.059
SMALL CAP			
* RNBS.ST (RNB RETAIL AND BRANDS AB)	18-Jul-08	-0.007	0.126
* NOTE.ST (NOTE AB)	2-Mar-10	-0.002	0.536
* ELAN-B.ST (ELANDERS AB)	26-Aug-10	-0.004	0.756
* SENS.ST (SENSYS TRAFFIC AB)	12-Oct-10	-0.004	0.482
* DIOS.ST (DIOS FASTIGHETER AB)	1-Nov-10	0.003	0.168
* NOMI.ST (NORDIC MINES AB)	26-Nov-10	0.0004	0.0004
* HEMX.ST (HEMTEX AB)	15-Feb-11	-0.008	0.169
* FING-B.ST (FINGERPRINT CARDS AB)	11-Apr-11	-0.002	1.041
* PREC.ST (PRECISE BIOMETRICS AB)	3-May-11	-0.001	0.334
* ORX.ST (OREXO AB)	4-May-11	0.002	0.299

Figure 8: Companies divided into groups with share issue dates and Alpha and Beta.

SMALL	PREC.		NOMI.		SENS.		FING-B.		HEMX.		DIOS.		ELAN-B.		NOTE.		ORX.		RNBS.	
Event	AR		AR		AR		AR		AR		AR		AR		AR		AR		AR	
Window	test	?	test	?	test	?	test	?	test	?	test	?	test	?	test	?	test	?	test	?
-15	-0.2	no	1.7	no	-1.1	no	-0.3	no	0.4	no	-2.7	yes	-0.2	no	0.6	no	-0.6	no	0.5	no
-14	-0.3	no	0.8	no	0.6	no	0.5	no	0.2	no	0.6	no	0.2	no	-9.1	yes	-0.9	no	0.4	no
-13	-0.2	no	-0.1	no	0.6	no	-0.9	no	0.5	no	1.5	no	0.1	no	-1.4	no	0.5	no	-1.1	no
-12	-0.1	no	-0.4	no	0.4	no	-1.2	no	-0.1	no	3.9	yes	0.5	no	-1.9	no	0.0	no	-1.4	no
-11	0.5	no	-0.3	no	2.6	yes	0.1	no	0.9	no	-0.1	no	0.5	no	-2.1	yes	0.5	no	-0.2	no
-10	-0.7	no	-0.8	no	-0.5	no	-0.8	no	0.1	no	-1.3	no	0.0	no	5.0	yes	-1.0	no	1.7	no
-9	0.0	no	-0.4	no	3.3	yes	0.2	no	0.4	no	0.7	no	0.0	no	0.1	no	-0.1	no	0.6	no
-8	-1.4	no	-0.2	no	-0.4	no	-0.6	no	0.2	no	-3.5	yes	-0.1	no	-2.0	no	-0.6	no	-2.0	yes
-7	-0.6	no	-1.3	no	-0.6	no	-0.1	no	0.7	no	2.2	yes	-0.9	no	-1.0	no	0.4	no	0.3	no
-6	-0.5	no	-0.2	no	-0.2	no	0.3	no	0.1	no	-1.3	no	0.7	no	0.2	no	-0.8	no	0.1	no
-5	0.0	no	0.9	no	-1.9	no	1.8	no	0.3	no	1.1	no	0.4	no	5.1	yes	-0.5	no	-1.3	no
-4	0.0	no	0.7	no	0.4	no	-0.5	no	0.0	no	0.5	no	0.8	no	0.5	no	-0.4	no	-0.4	no
-3	-0.3	no	-0.8	no	0.2	no	0.4	no	0.6	no	-0.3	no	0.3	no	1.2	no	-0.1	no	-1.0	no
-2	1.0	no	-1.1	no	-1.6	no	0.3	no	1.3	no	-1.0	no	-0.1	no	-0.6	no	0.0	no	2.4	yes
-1	-0.4	no	0.7	no	0.6	no	0.5	no	-0.8	no	-0.7	no	1.0	no	0.6	no	0.0	no	1.9	no
0	-0.5	no	-0.6	no	-4.2	yes	1.2	no	-1.3	no	-0.5	no	-0.6	no	0.2	no	-5.6	yes	1.7	no
1	0.1	no	0.6	no	-1.4	no	-0.1	no	0.3	no	1.2	no	-1.1	no	0.8	no	-2.7	yes	3.9	yes
2	-0.8	no	-0.6	no	-0.5	no	-0.5	no	-1.1	no	-0.4	no	0.8	no	-0.2	no	-0.5	no	0.5	no
3	2.5	yes	1.8	no	-0.1	no	0.5	no	0.7	no	0.3	no	0.1	no	-0.5	no	-0.9	no	3.3	yes
4	-1.4	no	1.4	no	-2.5	yes	0.0	no	-0.9	no	-0.4	no	0.1	no	-0.8	no	-0.4	no	-1.0	no
5	0.1	no	0.3	no	1.0	no	0.9	no	0.9	no	-0.5	no	0.3	no	-0.9	no	-0.3	no	0.0	no
6	0.3	no	-0.3	no	-0.7	no	-1.1	no	0.4	no	-0.1	no	0.0	no	0.8	no	0.0	no	0.4	no
7	-0.2	no	1.2	no	-0.1	no	-0.7	no	-1.2	no	-0.1	no	-1.2	no	3.3	yes	-0.1	no	0.7	no
8	0.5	no	0.0	no	-0.1	no	-0.3	no	0.2	no	-0.6	no	1.4	no	2.1	yes	-0.7	no	1.7	no
9	-0.4	no	0.3	no	-2.3	yes	-0.5	no	-0.6	no	-0.8	no	-0.1	no	-0.3	no	-0.3	no	0.4	no
10	0.1	no	2.1	yes	1.5	no	-3.8	yes	1.6	no	-0.2	no	-0.8	no	0.4	no	0.0	no	-0.2	no
11	-0.1	no	-0.4	no	0.2	no	0.5	no	2.2	yes	-0.6	no	0.1	no	-1.8	no	0.1	no	-1.0	no
12	0.0	no	0.2	no	0.8	no	1.4	no	0.5	no	-0.7	no	0.2	no	0.2	no	-0.1	no	-0.6	no
13	0.1	no	-0.7	no	-0.2	no	-1.0	no	1.2	no	-1.5	no	0.1	no	-0.2	no	-0.1	no	0.7	no
14	-0.5	no	1.0	no	1.3	no	0.2	no	3.2	yes	1.5	no	-0.3	no	-0.4	no	0.2	no	0.7	no
15	-0.9	no	-0.3	no	0.1	no	-3.0	yes	-0.8	no	0.2	no	0.3	no	0.6	no	-0.2	no	-0.4	no

Figure 9: T-distribution for 10 companies within Small cap during the event window.

MID	CORE.		PAR.		SAS.		SAGA.		BINV.		SOBI.		NSP-B.		GUNN.		TRAD.		ENRO.	
Event	AR		AR		AR		AR		AR		AR		AR		AR		AR		AR	
Window	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?
-15.0	-0.1	no	-0.5	no	-0.1	no	-1.2	no	0.5	no	1.1	no	-0.3	no	0.7	no	0.3	no	-0.8	no
-14.0	-0.4	no	-0.7	no	2.2	yes	-1.4	no	-0.7	no	0.0	no	0.9	no	-1.3	no	0.7	no	1.2	no
-13.0	-0.1	no	-0.1	no	-1.9	no	-1.4	no	-0.5	no	1.5	no	-0.2	no	0.4	no	-0.6	no	0.0	no
-12.0	0.1	no	0.0	no	0.0	no	0.8	no	-1.4	no	-1.6	no	-0.5	no	0.6	no	-0.2	no	1.2	no
-11.0	2.2	yes	-1.7	no	0.3	no	0.7	no	-1.8	no	0.0	no	0.7	no	-0.4	no	0.0	no	-0.1	no
-10.0	-1.2	no	-2.5	yes	0.1	no	-0.1	no	0.8	no	0.2	no	-0.7	no	-0.5	no	-0.9	no	0.3	no
-9.0	0.1	no	-0.5	no	2.0	yes	-0.1	no	2.5	yes	0.6	no	1.5	no	-0.9	no	-0.5	no	0.2	no
-8.0	-1.0	no	0.7	no	-2.0	yes	-0.4	no	-0.2	no	-0.1	no	-1.8	no	-0.5	no	0.0	no	0.1	no
-7.0	-0.1	no	0.4	no	0.2	no	0.1	no	-0.8	no	1.0	no	0.2	no	1.3	no	0.8	no	-0.8	no
-6.0	0.0	no	-0.1	no	0.0	no	0.4	no	-0.2	no	0.1	no	-0.1	no	0.0	no	-12.6	yes	0.1	no
-5.0	-0.1	no	0.1	no	0.3	no	-0.7	no	-0.2	no	2.3	yes	-2.1	yes	0.1	no	-2.7	yes	-0.2	no
-4.0	0.4	no	-1.0	no	0.1	no	0.9	no	-2.8	yes	-0.4	no	-1.4	no	0.1	no	-0.7	no	0.3	no
-3.0	-0.6	no	-0.1	no	0.2	no	-1.0	no	0.8	no	0.8	no	-1.4	no	0.1	no	0.3	no	2.9	yes
-2.0	1.5	no	-0.9	no	0.2	no	0.4	no	0.2	no	0.2	no	1.2	no	-0.3	no	0.4	no	-0.6	no
-1.0	0.0	no	1.3	no	-0.3	no	0.0	no	0.8	no	0.9	no	-2.1	yes	0.6	no	-0.5	no	1.1	no
0.0	-0.6	no	-3.6	yes	-0.1	no	-0.9	no	-3.6	yes	-2.3	yes	-7.8	yes	-2.4	yes	1.5	no	-4.6	yes
1.0	-0.7	no	-1.9	no	2.1	yes	0.8	no	-0.3	no	-0.1	no	-5.5	yes	-1.9	no	0.4	no	-2.5	yes
2.0	1.2	no	-3.4	yes	-12.3	yes	1.3	no	0.0	no	-0.5	no	-5.0	yes	-1.1	no	1.1	no	1.5	no
3.0	-0.1	no	-7.6	yes	-4.1	yes	-0.2	no	-1.7	no	-1.5	no	-2.3	yes	0.2	no	0.2	no	-1.3	no
4.0	-0.3	no	10.2	yes	0.0	no	2.2	yes	0.3	no	-0.3	no	0.0	no	0.1	no	-1.5	no	1.7	no
5.0	1.8	no	-1.4	no	0.2	no	-0.8	no	1.3	no	-0.2	no	-3.8	yes	2.0	yes	-1.3	no	-0.3	no
6.0	-0.1	no	0.3	no	0.0	no	-0.6	no	-1.4	no	-1.8	no	1.3	no	0.4	no	1.1	no	0.4	no
7.0	0.6	no	2.2	yes	0.1	no	-0.2	no	-1.0	no	-1.0	no	3.6	yes	0.0	no	-0.8	no	0.0	no
8.0	0.0	no	0.8	no	0.2	no	1.1	no	-2.0	yes	0.4	no	-0.1	no	-1.0	no	-0.2	no	0.0	no
9.0	-1.0	no	-3.5	yes	0.3	no	-0.4	no	2.2	yes	0.3	no	-0.2	no	0.0	no	1.3	no	0.3	no
10.0	1.1	no	-1.6	no	-0.2	no	-0.8	no	-0.8	no	-1.1	no	-2.2	yes	0.2	no	-0.9	no	-1.2	no
11.0	3.0	yes	1.7	no	0.4	no	-0.1	no	-1.7	no	1.8	no	-2.2	yes	-0.9	no	-0.5	no	0.3	no
12.0	-1.0	no	-36.1	yes	0.2	no	0.3	no	0.1	no	0.6	no	3.4	yes	0.7	no	0.9	no	-0.1	no
13.0	-3.3	yes	2.3	yes	-0.6	no	-0.3	no	-0.3	no	1.0	no	1.7	no	-0.4	no	-1.8	no	0.6	no
14.0	-0.4	no	0.0	no	0.1	no	0.2	no	-0.3	no	0.5	no	-2.6	yes	0.9	no	-1.5	no	0.1	no
15.0	1.2	no	-3.1	yes	0.7	no	-0.8	no	1.8	no	0.8	no	1.5	no	-0.2	no	0.2	no	-0.3	no

Figure 10: T-distribution for 10 companies within Mid Cap during the event window.

LARGE Event Window	SWED-A		TREL-B		HUSQ-A		GETI-B		HEXA-B		NDA-SEK		SSAB-A		Meda-A	
	AR		AR		AR		AR		AR		AR		AR		AR	
	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?	t-test	?
-15	0.2	no	0.0	no	-0.7	no	1.4	no	-0.2	no	-2.5	yes	0.8	no	-0.6	no
-14	-0.6	no	-0.3	no	-0.2	no	0.0	no	-1.2	no	1.9	no	2.8	yes	-0.6	no
-13	0.4	no	-0.4	no	-0.5	no	-3.8	yes	0.2	no	-2.1	yes	1.0	no	0.0	no
-12	-0.3	no	-1.4	no	2.2	yes	-1.3	no	-1.3	no	-0.8	no	-0.2	no	-0.2	no
-11	-0.1	no	0.4	no	-0.4	no	0.9	no	-1.4	no	4.2	yes	-1.0	no	-0.4	no
-10	-0.1	no	0.4	no	0.8	no	-0.5	no	-0.7	no	-0.3	no	-0.8	no	0.4	no
-9	0.1	no	0.6	no	0.8	no	-2.2	yes	-0.3	no	0.4	no	0.1	no	0.4	no
-8	-1.1	no	0.6	no	0.3	no	1.9	no	0.0	no	-0.9	no	0.7	no	-0.8	no
-7	-0.3	no	2.3	yes	-1.4	no	0.6	no	0.3	no	0.2	no	2.2	yes	-0.1	no
-6	0.4	no	0.1	no	0.8	no	2.2	yes	-1.0	no	-0.6	no	0.7	no	0.0	no
-5	0.1	no	1.0	no	-0.4	no	0.3	no	0.3	no	0.3	no	-1.0	no	-1.2	no
-4	-0.2	no	0.1	no	0.2	no	-1.1	no	0.3	no	0.5	no	0.4	no	-0.8	no
-3	0.0	no	0.2	no	-0.1	no	-3.4	yes	-0.1	no	-0.8	no	-1.4	no	-0.3	no
-2	0.2	no	0.6	no	-0.8	no	-1.9	no	0.8	no	0.9	no	1.3	no	-0.8	no
-1	0.7	no	0.9	no	-0.4	no	-2.1	yes	-0.2	no	1.2	no	0.3	no	2.3	yes
0	0.3	no	1.3	no	-1.9	no	0.8	no	0.1	no	-0.8	no	-0.1	no	-2.1	yes
1	0.3	no	-1.4	no	-0.4	no	0.2	no	-0.4	no	-1.1	no	0.1	no	1.2	no
2	-4.1	yes	0.8	no	-2.3	yes	-1.3	no	-1.5	no	1.6	no	0.3	no	-1.0	no
3	-0.9	no	0.1	no	-0.6	no	0.3	no	-3.1	yes	-0.1	no	0.4	no	-0.1	no
4	0.1	no	1.2	no	1.7	no	-1.5	no	2.2	yes	-1.0	no	-0.7	no	-1.7	no
5	-0.7	no	-0.1	no	0.6	no	-0.6	no	1.3	no	-0.8	no	-8.1	yes	-1.0	no
6	-0.6	no	0.1	no	-1.7	no	0.1	no	-0.3	no	1.3	no	1.3	no	2.4	yes
7	0.5	no	0.1	no	-1.2	no	1.9	no	1.8	no	-1.0	no	-0.9	no	-2.2	yes
8	0.5	no	3.7	yes	3.6	yes	0.1	no	-0.9	no	-0.1	no	1.1	no	0.3	no
9	0.1	no	0.7	no	-2.1	yes	1.1	no	0.8	no	0.9	no	0.8	no	-1.3	no
10	-0.6	no	1.2	no	-0.4	no	-0.7	no	0.8	no	-0.3	no	-0.2	no	0.3	no
11	0.1	no	2.5	yes	-2.4	yes	1.1	no	0.9	no	-2.2	yes	-0.6	no	3.6	yes
12	0.4	no	0.6	no	-2.8	yes	1.0	no	-0.6	no	3.9	yes	-5.0	yes	-0.8	no
13	-0.5	no	0.5	no	3.2	yes	-1.1	no	-0.7	no	0.9	no	-1.5	no	-1.8	no
14	-0.2	no	-0.3	no	-0.4	no	2.4	yes	0.2	no	-0.4	no	1.0	no	-1.7	no
15	-0.9	no	0.4	no	-2.0	yes	-0.1	no	0.9	no	-4.6	yes	0.6	no	0.8	no

Figure 11: T-distribution for 8 companies within Large Cap during the event window.