SCHOOL OF ECONOMICS
AND MANAGEMENT
Lund University

Master thesis, spring 2009

Does the fashion of a management strategy affect the stock price?

-   **An event study of the fashion of downsizing.**

Tutors:
Göran Andersson
Sverre Spoelstra

Authors:
Mattias Ekstrand
Pontus Johansson
Herman Treschow

ABSTRACT

TITLE: Does the fashion of a management strategy affect the stock price? - An event study of the fashion of downsizing.

SEMINAR DATE: 3rd of June 2009

COURSE: Degree Project Master Level, Business Administration, Master level, 15 University credit points (ECTS)

AUTHORS: Mattias Ekstrand, Pontus Johansson, Herman Treschow

ADVISORS: Göran Anderson, Sverre Spoelstra

KEYWORDS: Downsizing, Management strategy, Abnormal Return, CAR, Event study, Market model, Efficient market hypothesis, Survivor syndrome, Signaling hypothesis.

PURPOSE: The purpose with our thesis is to examine whether the popularity of downsizing as a management strategy has an effect on the stock market's reactions when a company announces downsizing.

METHODOLOGY: This thesis has employed a quantitative method. An event study has been used and we have calculated the normal and abnormal return using the market model. Data has been collected from Datastream in forms of stock prices and Affärsdata has been used to find the announcements about downsizing. The event window has been (-2, +2) days considering previous research.

CONCLUSION: According to the statistical tests there are no differences between the two CAARs, which means that the stock market´s reaction to an announcement of downsizing does not differ when downsizing was in fashion and when it was not.

Contents

CHAPTER 1

INTRODUCTION

In this first chapter we present the background of the thesis and give the reader an understanding of the existing discussions about downsizing. We present the research problems of our thesis and then the purpose. Finally we describe the delimitations we have done.

1.1. Background

During all times, organizations have dismissed employees. This has usually occurred because of less lucrative economical situations. From the mid- to the late 1980s the way of using layoffs have changed. Before this time, layoffs was something that the organization was forced to do to survive. This changed into becoming a management change strategy commonly used to increase profitability and efficiency. Already back in the mid 1970s Charles Handy predicted that future organizations would become less dependent on employees, inter alia because of the technological revolution. He predicted that this would affect millions of lives and management decisions, while describing this phenomenon with the term "down-sizing". (Gandolfi 2008)

As with many other things there have been trends in which management strategies to use in an organization. A manager is more confident in implementing a certain strategy when knowing that other companies are using the same strategy successfully. Abrahamson & Eisenman (2008) argues that trends like this has been far from insignificant and discuss the downsizing strategy as following this pattern. They argue that the downsizing strategy being a fashionable strategy gave rise to the needless firing of thousands of employees. (Abrahamson & Eisenman 2008) A management strategy that has followed this pattern is downsizing. The downsizing strategy saw its peak of popularity (see 2.5.) in the beginning of the 1990s. On the second of July 1990, Jan Timmer became the newly acquired CEO of Philips Electronics. The company had been a slumbering organization for a long time and he was determent to change the profitability and had great plans. (Karsen 2009) In less than thirty days after Timmer became the CEO the first 10 000 employees were made redundant. Before the end of the year there

was 45 000 fewer employees at Philips Electronics.[1] Timmer deliberately used the layoffs as a shock therapy to make an impression of changes to come. His action received much attention at the time and was widely discussed. The business world was impressed by his initiatives and his management style became famous and well discussed amongst managers (Karsen 2009).

In the article 'Reflecting on downsizing: what have managers learned?' Gandolfi (2008) refers to Cameron (1994) who argues that 85% of the Fortune 500 firms used downsizing as a strategy between 1989 and 1994. Cameron also argues that 100% of the Fortune 500 firms had plans on using downsizing in the coming five years. (Gandolfi 2008) This does not mean that the firms actually did use the management strategy but it indicates that downsizing was one of potential strategies considered suitable and efficient to increase productivity or change direction of large companies.

Did downsizing result in the assumed higher profitability and if so, how did that factor influence the stock price of the company? Findings from previous studies of this relationship are divided; however, the vast majority of studies indicate that downsizing has a negative stock price reaction, as shown further on in this thesis. Sloan and Underwood (1996) are one of the few who claim that the stock price increases among downsizing companies. Farber and Hallock (2009) have made a thorough investigation that disproves Sloan and Underwood's (1996) statement. This shows the contradictory statements from different authors in the value of downsizing.

Gunderson et al. (1997) examined layoffs announcement between 1982-89 made by Canadian firms that were listed on the Toronto Stock Exchange and found the same negative reaction of the stock prices as Lee (1997). In contrast to Lee's and Gunderson's surveys, Ballester et al. (1999) found evidence that firms who downsized whilst increasing capital expenditures did actually improve their financial performance. In Gandolfi´s (2008) article he refers to Williams (2004) who argues that there are confusions surrounding downsizing. For instance, the management strategy remains popular although the majority of empirical evidence collected has found negative stock market reaction and indications that downsizing has a negative effect on financial efficiency in the organization (Gandolfi 2008).

---

[1] http://www.faqs.org/abstracts/Business-general/Philips-to-eliminate-35000-to-45000-jobs-by-end-of-91-disclosure-follows-cuts-set-in-July-payouts-ha.html 2009-05-03 12:15

> *"Given continued corporate downsizing and anecdotal reports of productivity gains associated with layoffs in the financial press, both the negative market reactions to downsizing announcements and the mixed financial performance results are puzzling."*

Chalos, P. & Chen, C. (2002); *"Employee Downsizing Strategies: Market Reaction and Post Announcement Financial Performance",*
Journal of Business Finance & Accounting. 29(5-6):848

1.2. Research problem

Downsizing is a well-known and commonly used strategic action in large organizations. However, there are indications that the strategy is financially ineffective for the organization (Gandolfi 2008). As the findings regarding downsizing are contradicting, it is puzzling that organizations continue to use this strategy.

In Lee's survey she investigated the reaction to downsizing by looking at the stock market in Japan and in the United States. The investigation examined the impact of downsizing by investigating the changes in the stock prices. Lee discovered that there is a considerable difference between the two countries. The two stock markets react differently to the same action. (Lee 1997) This discovery opened up for interesting questions and became the foundation of our research. The reaction on the stock market is based on predictions and expectations of the players on the market. This also means that if the players on the market believe that an action is something positive for the company, the stock price will increase. Lee discovered that the same action was viewed differently in the two countries. One of the countries had a less negative apprehension to downsizing than the other. (Lee 1997) This would mean that both of the stock markets are irrational, because the reaction is depending on what the players on the market believe is good or bad for the company, not what actually is good or bad.

Several researchers have discussed the downsizing strategy, but we found that they fundamentally are discussing the strategy from a financial viewpoint. We believe that it makes the discussion somewhat one-dimensional and important aspects of the downsizing effects are not considered. We find it interesting to investigate the strategy with a mixed viewpoint with both financial and organizational theories. This to see if our investigation can give answer to questions that cannot be answered by the already existing viewpoint. Farber and Hallock (2009) show in their recent survey that the stock market reaction to downsize announcements has changed over time. From the 1970s and until late 1990s they found that

the stock market reaction had become less negative. They argue that the reason for this is that the perception of the management strategy has shifted from negative to more positive over time. (Farber & Hallock 2009) Does the reaction to an organizational situation differ from one period of time to another, depending on the feelings of the strategy used? If so, is the difference significant enough to show on the stock market? This makes us want to investigate if the fashionability of a strategy has an impact on the reaction on the stock market. To differ even more from the existing investigations in the subject we want to investigate the reaction on the Swedish stock market because of the lack of similar previous investigation on this market.

Given these thoughts we therefore question:

- Does the Swedish stock market's reaction differ if the downsizing strategy is fashionable at the time to when it is not?

1.3. Purpose

The purpose with our thesis is to examine whether the popularity of downsizing as a management strategy has an effect on the stock market's reactions when a company announce downsizing.

1.4. Delimitations

This thesis will not assess whether the downsizing was proactive, e.g. a part of a strategy, or if it was reactive, e.g. due to financial distress. Neither is this thesis investigating if the downsizing was permanent or temporary or if it was series of downsizings or just a single event. The reason why downsizing occur, if it is due to a merger, to an acquisition, to a plant closure etc. is also ignored. We investigate all downsizing announcements and do not divide them in different categories. The reason for our delimitations is the lack of information on the announcements. We compare our data to those of previous reports and we cannot exclude that similar dividends as described above were made in these studies. Here we only compare our result with their total sum of announcements.

To answer our purpose we must look at firms that are listed on the Stockholm Stock Exchange, hence we do not look at any other companies. To simplify, it does not matter if an investment company or a holding company owns the firm that makes the announcement.

To answer our purpose we examine only companies enlisted at Stockholm Stock Exchange. We examine the time point of the first announcement from the company of downsizing. This study only takes into account notices that concern the workforce of the company in Sweden. The terms of timing and the lack of information is the motive for this delimitation. Announcements about notices that occur on the same day as the company releases a report or when they make a profit warning are not included in this thesis. We believe that the overall financial performance of the report influence the stock price so much that the reaction of the notice is hard to verify. No transaction costs will be taken into account in our calculations. We do our calculations based on the closing quota at end of the day.

1.5. Audience

In our thesis we are investigating a specific event in an economical situation and to fully grasp the content of this thesis some prerequisites are needed. This means that this thesis will have an audience of people with some knowledge in business administration, more specifically of management strategies, organizational change, finance and economics. The results of our investigation can be of interest for management who are considering using downsizing as a management strategy.

1.6. Structure of the text

We have now presented an introduction of the thesis and the continued structure is as follows: In chapter 2 we present our thesis methodology and discuss the validity and reliability of this survey. The chapter ends with a description of the event study we have used. In chapter 3 we present the theories which helps to explain the results we have achieved. We also explain our hypotheses of this survey and the statistical models in this chapter. In chapter 4 we present our data and the regression analysis. In chapter 5 we analyze the results from chapter 4 and compare these results with previous research. Finally in chapter 6 we summarize the survey and present further interesting areas regarding this survey.

CHAPTER 2

METHODOLOGY

In this chapter we discuss the methods we employ in our survey and how we justify the choice of them. Thereafter, we explain how we have collected the data that is necessary to answer our purpose and discuss questions about the validity and the reliability. Finally, we define fashion and finish with describing the event study.

2.1. Choice of method

We have used a quantitative research method in our thesis. This research method is appropriate in a thesis using calculations and statistics, such as an event study and a regression analysis. The primary knowledge object when using a quantitative research strategy is to explain a connection from two different things. (Andersen 1998) As we examine whether the strategy's popularity affects the market's reactions when a company announces downsizing, this research strategy is going to suit our thesis. Moreover, we will test hypothesis (see 2.8.5) that we will deduce from the theory and collect data that we quantify to finally interpret the analysis results. Our approach is appropriate for a quantitative research method (Bryman & Bell 2005).

To attack the problem in a theoretical way, we use a hypothetical-deductive theory formation. This approach is used when the problem is answered using hypothesis (see 2.8.5) which are deduced from the theories (Holme & Solvang 1997). The approach suites our purpose well as we are going to develop and evaluate existing theories about the impact of downsizing on the stock price. The existing theories about the impact of downsizing we use have never been tested in this way on the Swedish stock market. After our empirical investigation we are testing our hypothesis (see 2.8.5). After this the reliability and/or the weaknesses of the existing theories are discussed and analyzed.

2.2. Collection of data

The data that we use in our thesis consists of secondary data, which is data that already has been collected from someone else. The secondary data we are using is collected from literature and from articles published in academic journals. These articles and other published material about previous investigations were found in different databases using the search engine ELIN. In our regression analysis, the stock quotas and index data are being collected from DataStream or Thomson Reuters 3000. The stock quotas we use are the closing quota at end of the day. The announcements of downsizing were found through Affärsdata, which is a database that contains news articles and press releases from the beginning of the 1980s. We found the announcements by searching on following words: varsel, varsla, uppsägning (notice). Both DataStream and Affärsdata are independent and professional organizations. For regressions we are using EViews, which is a computer program for econometric analysis.

Even though the sources we use are well known and have a high reputation all databases are known to contain errors. It is hard to eliminate and detect all the errors that can occur in the databases but during the collection of data we are doing random checks to see if the data contains errors. We do the random checks by comparing the stock prices with other sources than DataStream and we have used yahoo finance as our second source. It may be that Affärsdata do not have all announcements that has been made throughout the years, in such cases the newspapers that are included in Affärsdata has chosen to ignore them. Since Affärsdata includes many newspapers in their database, the chance that an announcement from a listed company has been ignored, we consider practically impossible.

2.3. Reliability

Definition of the reliability is how repeatable the result of the survey is. The problem with the reliability of the results occurs more often in a quantitative research than in a qualitative research. There are three different factors involved when considering the reliability of a result which are: stability, internal reliability and inter-observer consistency. (Bryman & Bell 2005) The reliability is considered high and stable because this is an event study studying the stock market in two different periods of time. This means that if someone were to do this study again the results would be exactly the same as ours. If different time periods were chosen

there would be some fluctuations in the results. This means, that the results may not be stable over time, which is the main problem with the stability. Due to the lack of investigations on the Swedish area, it is hard to predict how the results would have framed if we had chosen another time period instead. When we did our regression we followed the theory, i.e. the recommended calculations, about framework of the analysis. But it is hard to eliminate all problems (internal reliability) that can occur in a regression analysis. We have been aware and paid attention to problems that can occur in calculations so that the influence of problems on the results has been lowered. The authors´ interpretations have nearly all the time been in accordance with each other's, which leads to a high inter-observer consistency during the whole of the survey.

2.4. Validity

The validity is the ability of a measuring instrument to measure what it intends to measure. There are several ways to establish the validity and in our survey the most important is the construct validity. The construct validity is how well the hypothesis deduced from the theory is relevant for the survey's purpose. The problems with the construct validity can occur when hypotheses being wrongly deduced from the theory and when the definitions are measured incorrectly. (Bryman & Bell 2005)

When describing validity it is appropriate to distinguish between internal and external validity. The internal validity is the same as construct validity as we have already explained above. The external validity is the conformity between the measurements when using a definition and when using the reality. (Eriksson & Wiedersheim-Paul 2006) It might be that our generalization of downsizing does not reflect the reality due to a merger or an acquisition for example. Since we have used as many announcements as exists on Affärsdata, we believe that this problem will be eliminated so that the external validity remains on a high level.

To achieve a high level of reliability and validity in our thesis, during the whole survey we reflect and communicate over how reasonable the results actually are. We are also going to be constantly careful when we process the data that we have collected in order to lower the possibility of errors and distortions. All the announcements have independently been collected

from each of the authors and then a comparison has been made. On a few occasions when the authors disagreed on the announcements, they have not been included in the investigation.

2.5. Limitations in research

Due to the delimitations of this investigation some companies has been excluded. To begin our sample of 52 observations in the first period we investigated has been reduced to 44 observations. The second period included at the beginning 66 observations but was reduced to 57 observations. Some of the excluded companies had extreme values (outliners) and some companies were reduced due to our delimitations. The excluded observations can be seen in appendix 1 and 2. Those previous researches that we compare with our result with, has also excluded some observations, mainly due to the same reasons as ours.

2.6. Fashion of a management strategy

To determine the fashionability of something is hard because of fashion being such an abstract thing to investigate. It is hard to view how fashionable something is and it is hard to determine in what period of time this fashion started and ended. In this thesis we have decided to determine the time period when the downsizing strategy was in fashion. One way we do this is by investigating the flow of articles concerning downsizing and see what time period the amount of articles starts to increase and also investigate the difference between the amounts of articles in different periods of time, with a special focus on the time periods we are investigating, 1990-1992 and 2007-2009 (see 2.8.1. for definition).

We found that the amount of articles changed drastically during different periods of time. We found this by searching for articles with the word "downsizing" and selected different time periods.[2] During a six year period from the year 1984 to 1989 there was a total of 257 articles concerning downsizing. In 1990 the amount of articles suddenly increased and in the period from 1990 to 1995 there were a total of 3832 articles concerning downsizing. This indicates that the downsizing strategy was widely discussed during this period of time and that the interest in the management strategy started in 1990. When comparing the amount of articles written in the beginning of the 1990s to the amount during the 2007-2009 period the

---

[2] http://elin.lub.lu.se/elin?lang=se

difference is significant. During approximately the same amount of years from 2004-2009 the amount of articles concerning downsizing was 1710. The conclusions that can be drawn from this discovery are that the strategy was less discussed but still discussed. We argue that one explanation to this is that when a discussion begins it is going to be ongoing for a long time. Because of the great attention the downsizing got in the beginning of the 1990s, the discussion is going to continue even when the downsizing strategy is not in fashion.

We argue that conclusions from these findings can be drawn and that the findings provide us with information that downsizing had become interesting during 1990 to 1995. It is obvious that the interest for downsizing started in the beginning of the 1990s and the amount of published articles and the ongoing discussion indicates that this is the time downsizing strategy got great attention. Except from these discoveries we have also found evidence that the negative reaction to the announcement is at the lowest during the time between 1990 and 1999 (Farber & Hallock 2009). It is at its lowest level of a 40-year period and this is strengthening our assumption that the peak of fashion concerning the downsizing is occurring in the beginning of the 1990s.

A third relevant discovery when trying to determine the peak of fashion for the downsizing strategy was the findings by Cameron (1994) where he discovered that 85% of the Fortune 500 firms used downsizing as a strategy between 1989 and 1994. (Gandolfi 2008) This is yet another indicator that this period is the time when the downsizing strategy was a fashionable strategy that was used by managers and other decision-makers in large companies frequently.

2.7. Survey approach

To investigate how downsizing affects the stock market we use an event study that is a study that focuses on the impact of a firm-specific event on the price of the firms' stock (Brown & Warner 1980). In financial research the event study is one of the most widely used analytical tools. The impact of a special event on the stock price can be measured easily using this study. The effects of an event will directly be reflected in the stock price of the company. This assumption means that when new information reaches the market, the price will change depending on the type of the information and the expectations of the investors. An event study tries to measure if the event has brought an abnormal stock return. (MacKinlay 1997)

In the following sections we present the model that we use to determine the market reaction to the downsize announcement. We thoroughly describe how the data has been handled in order to establish the results that constitute the foundation of the analysis. This will make it easier for the reader to understand the procedures used to answer the questions.

2.8. Event Study

There is no specific structure in an event study that must be followed since event studies can be used in a variety of different areas. However, an event study is usually divided into seven steps, which we will explain along with our structure of choice. The steps are as follow: (MacKinlay 1997)

1. Define the event and identify the event window
2. Determine the selection criteria
3. Calculate normal and abnormal returns
4. Determine the estimation window
5. Performance of the test period
6. Compilation of empirical results
7. Interpretation and conclusion

2.8.1. The event and the event window

Here we are identifying the event window where we want to investigate the effect of the event i.e. the stock price changes. The event we investigate is the announcement of downsizing. Our event window will be two days before the day that the announcement is made and two days after (-2, 0, +2). We have chosen this event window considering the existing research in the area, in particular Lee (1997). The reason for this is to facilitate the comparing of our results with already existing results (Lee 1997). We assume that the players on the market became aware of the announcement on the same day that it was released. Even though it was not yet published in newspapers, we assume that the players on the market had radio and teletext in the 1990-92. Due to the fact that an announcement can be made after the closing time on the stock market; we will also capture that effect of the event on the second day after the announcement.
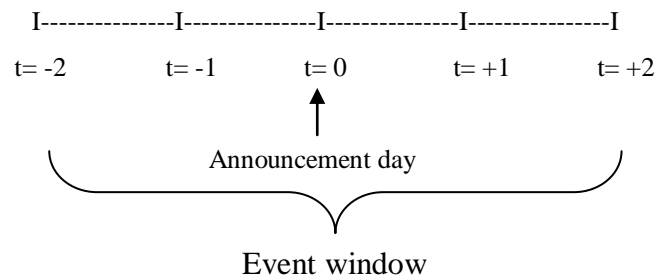
```
I--------------I--------------I--------------I---------------I
t= -2          t= -1          t= 0           t= +1          t= +2
```

Announcement day

Event window

Figure 2.1: The event window

In this study we compare the effect of downsizing on the stock prices in two distinct time points. The first survey period chosen downsizing was a common management strategy action (01.01.1990 until 31.12.1992). The second survey period was at a time when downsizing was an unusual strategic choice (01.01.2007 and 31.04.2009). Previous studies have only investigated periods from 1999 and backwards and as we investigate if there are any differences in stock price reaction when the downsizing strategy was in fashion and when it was not, we compare with a period as late as possible. Due to the fact that previous studies have already examined the reaction of downsizing in the 1970s we argue that our choice of the second period could be a trail for further investigation about the impact of downsizing on stock price in the 21st century.

2.8.2. The selection criteria

In Lees' article she does not divide her selection of companies in big or small companies, instead she uses firms listed on the New York Stock Exchange, American Stock Exchange and NASDAQ (Lee 1997). As objects for this thesis we have chosen all companies listed on the Stockholm Stock Exchange who has made an announcement about downsizing in one or in both of the periods we investigate. We have chosen this selection criterion according to Lee's (1997) and Farber and Hallock´s (2009) investigations, which we argue are the ones that are most similar to our investigation. Some observations have been opted out because of the delimitations we have made (see 1.4.).

2.8.3. Normal and abnormal returns

To investigate if there is any difference against the normal return during the event window is of great importance in an event study. We calculate the abnormal return (AR), i.e. the impact of the event on the stock. The abnormal return is the actual return of the stock minus the

normal return. MacKinlay define normal return in his article as: "…the expected return without conditioning on the event taking place." (MacKinlay 1997:15)

The normal return is in other words the return on the stock if the company would not announce that they were downsizing. There are several different methods or models to calculate the expected normal return of a given stock. These models can be divided into two categories, statistical and economic. Models in the first category rely on statistical assumptions concerning the behavior of assets returns and the second category relies on assumptions concerning investor´s behavior. (MacKinlay 1997) In the first category, we go through the three methods that Brown and Warner (1985) describes. The first two are the two non-regression based mean adjusted return, market adjusted return. The last one is the regression based market model (Brown & Warner 1985). Since the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) are subject to controversy and criticized by many researchers, including MacKinlay (1997) and Cable and Holland (1999), they are not used in this study. Excluding these two models allowed us to put more focus on the other models. Furthermore, we will explain the meaning of the various models as well as describe how the various models differ in the calculation of the normal return. Finally we motivate our choice of model and discuss the drawbacks of the chosen one.

2.8.3.1. Mean adjusted returns

Mean adjusted return model formula:

$$AR_{it} = R_{it} - R_{ai}$$

where:

AR_{it} = Abnormal return for stock $_i$ at day $_t$.

R_{ai} = The average return during the estimation window for stock $_i$.

R_{it} = The return of stock $_i$ at day $_t$.

When calculating the abnormal return with this model, the normal return is the average return of the stock during the estimation window. (Brown & Warner 1985)

2.8.3.2. Market adjusted return

The market adjusted return model formula:

$$AR_{it} = R_{it} - R_{mt}$$

where:

AR$_{it}$ = Abnormal return for stock $_i$ at day $_t$.

R$_{it}$ = The return of stock $_i$ at day $_t$.

R$_{mt}$ = The return of the market portfolio at day $_t$.

This method estimates the normal return as the average return of the market portfolio (see 2.7.3.6) instead of the average return of stock $_i$ as the mean adjusted return model does. The alpha and the beta are estimated to be 0 and 1, respectively. With other words, they are constants and do not require any estimation window to be determined. (Brown & Warner 1985)

2.8.3.3. Market model

The market model formula:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where:

R$_{it}$ = The return for stock $_i$.

R$_{mt}$ = The return of the market portfolio.

β$_i$ = The systematic risk associated with stock $_i$.

α$_i$ = The part of the return of stock $_i$ which is independent from the return of the market portfolio as a whole.

ε$_{it}$ = A residual whose expected value is 0.

To finally estimate the abnormal return for stock $_i$ following market model formula is used:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

where:

AR$_{it}$ = the abnormal return of stock $_i$ at day $_t$. (Brown & Warner 1985)

The market model compares a stock returns with market portfolio return on a given date. The model takes into account both the systematic risk (β) that has a linear relationship to market portfolio return and the non-systematic risk (α) which is uncorrelated with the market portfolio return. (Strong 1998) These two will be calculated in EViews using the daily stock return and the market return in the estimation window.

2.8.3.4. Calculations of returns

The return for stock $_i$ (Rit) is calculating with the continuously compounded return formula:

$$\mathbf{R_t} = \ln(\mathbf{p_t/p_{t-1}})$$

where:

$\mathbf{p_t}$ = stock price at time $_t$.

$\mathbf{p_{t-1}}$ = stock price at time $_{t-1}$

(Brooks 2006)

We chose to calculate the return with this formula because it is widely employed in academic finance literature (Brooks 2006). Another motive to this choice is that the logarithmic returns are more likely to be normally distributed and agreed to the assumptions of standard statistical techniques (Strong 1992). The returns are calculated both in the estimation window and in the event window.

The stock prices we use in this investigation are, as mentioned earlier, collected from Datastream and thus adjusted for split and new issue. Dividend paid during the period is also being adjusted from data collected from Datastream by adding the dividend to the stock price.

2.8.3.5. Model discussion

The weaknesses with the mean adjusted model are that the model does not take into account how much the market has moved during the period, neither how the stock is moving in relation to the market movements. The strength with this model is that it is far easier to use than other models. The model needs for example no complicated calculations because of the absence of alpha and beta. Another advantage of this model is that it often gives the same results as more sophisticated models do. (Brown & Warner 1985)

The strongest disadvantage with the market adjusted return model is the lack of stock movements which depend on the return of the market portfolio by the alpha and beta values (Brown & Warner 1985).

The market model has been by far the most used method among our reference studies. According to Seth (1995) the model is the most commonly used when estimating the abnormal return in event studies. He argues that no better method has so far been developed in

spite of the low relationship between beta and actual return (Seth 1995). Dyckman (1984) is of the same view as Seth when he argues that the market model has proved to be the most suitable method to estimate abnormal returns. Cable and Holland (1999) followed up their previous investigation (1996) to once again prove that the market model is preferable to mean adjusted and market adjusted models. The differences in the result between more advanced methods, such as the three-factor model developed by Fama (1970), and the market model are according to MacKinlay (1997) very small. An advanced method as the three-factor model is appropriate to use when the sample of firms have a common characteristic, e.g. that they belong to the same industry (MacKinlay 1997). Given the above mentioned studies and the drawbacks with other models, we chose to use the market model as our method to estimate the normal return. The studies we compare our results with have also used this method and in this way our comparison will be fairer.

As with the other models, there are also problems when using the market model. These problems can arise when calculating the expected return of a particular stock. The beta that is recommended to be calculated over a 120 days period according to MacKinlay (1997) is assumed to be constant over the event window. Empirical test has shown that the beta often shifts daily and that the beta could be affected throughout the event. This problem mainly affects stocks that have a low turnover on the Stock Exchange because of the ignorance of the beta-changes that occurs in the event window. An incorrectly beta results in wrongly abnormal return. (Williams 2004). In our case the beta will also probably differ on a daily basis, especially relating to the event. These likely changes of beta are not going to be calculated in our investigation due to time limitations. However, we assume that these changes will not affect our overall result.

2.8.3.6. Affärsvärldens General Index

We have chosen to use Affärsvärldens General Index as a benchmark in this investigation as companies in the investigation are located in different industries. Therefore, a comparison of individual industry index would be considered irrelevant. Affärsvärldens General Index is extensive and measures the average return on the Stockholm Stock Exchange which thereby is used as yardstick in comparisons by many Swedish fund managers. With these justifications,

and that it is Sweden's most established General Index is what made us choose this particular index.[3]

2.8.3.7. CAAR

To ensure if any abnormal return consists, the abnormal return (AR) for each stock and for each day of the event window is calculated. Thereafter, all the abnormal returns is aggregated and divided into Average Abnormal Return (AAR) which is represents below:

$$\overline{AR}_\tau = \frac{1}{N} \sum_{i=1}^{N} AR_{i\tau}$$

(MacKinlay 1997:24)

Then, we accumulate the AARs to see the event´s total impact on the stock price. The accumulate AAR is known as the Cumulative Average Abnormal Return and is calculated through:

$$\overline{CAR}(\tau_1, \tau_2) = \sum_{\tau = \tau_1}^{\tau_2} \overline{AR}_\tau,$$

(MacKinlay 1997:24)

2.8.4. The estimation window

To estimate alpha and beta we have to determine the estimation period that precedes the event period we investigate. The estimation window must be before the event, otherwise the event would be influencing the normal return and this is something that must be prevented. By using the estimation window alpha and beta are calculated in EViews. They are used as reference to estimate the normal return and then finally to estimate possible abnormal return. Our estimation window is 120 days starting the day before the event window, which is the recommended time period to use according to MacKinlay (1997).
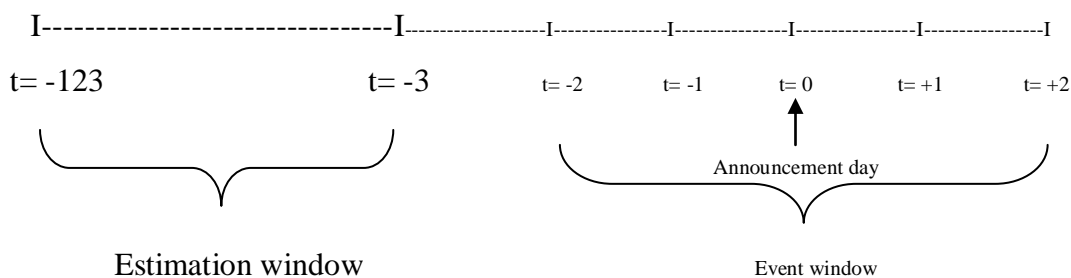

Figure: 2.2. Estimation window

---

[3]http://bors.affarsvarlden.se/afvbors.sv/site/index/index_info.page?magic=(cc%20(info%20(tab%20afv))), 2009-05-14 16:45

2.8.5. Performance of the test method

By random selection the credibility will be determined with help of statistical hypothesis testing. In a hypothesis test there must be a null hypothesis (H_0) and an alternative hypothesis (H_1). The test leads either to a rejection of H_0 or to not rejection of H_0. Our investigation tries to find if there is a difference in the reaction of the downsizing when downsizing was in fashion and when it was not. Due to the comparison of two time periods we investigate the differences in the mean values (μ_1, μ_2). The mean values in our investigation are the both CAARs (-2, +2) from each of the two time periods.

- $H_0 = \mu_1 - \mu_2 = d_0$
- $H_1 = \mu_1 - \mu_2 \neq d_0$

The d_0 is under the null hypothesis the difference between the CAARs. The null hypothesis says that there is no difference between the two CAARs, hence $d_0 = 0$.

The level of significance determines when the null hypothesis should be rejected. We have used a level of significance of 5% which is commonly used if there are not any special reasons to choose another level. As the observations are sufficiently large (44 and 57) according to the central limit theorem, we assume that they are approximately normal distributed. (Körner & Wahlgren 2006)

We test the H_0 by using the t-test and this will be done at both AAR and CAAR, which will be presented in the result chapter.

CHAPTER 3

THEORIES

In the following chapter we present the theories we will make use of when we develop our hypotheses and analyze the results. We begin the chapter with financial theories and then move on to organizational theories. We will only present the elements of the theories dealing with our subject, so in some cases not the entirely theory.

3.1. The efficient markets hypothesis

The hypothesis of efficient markets is a theory that has an important role in the financial economy and its empirical analysis. It is relevant in our event study in the sense that the result we reach can reflect whether the theory works in reality or not. By this we mean that if there is an abnormal return days after the downsizing announcement then that could be proof of that the market is slow to react on the information and a delayed effect has occurred (see picture below). This is something that we will discuss later in the analysis of our thesis.

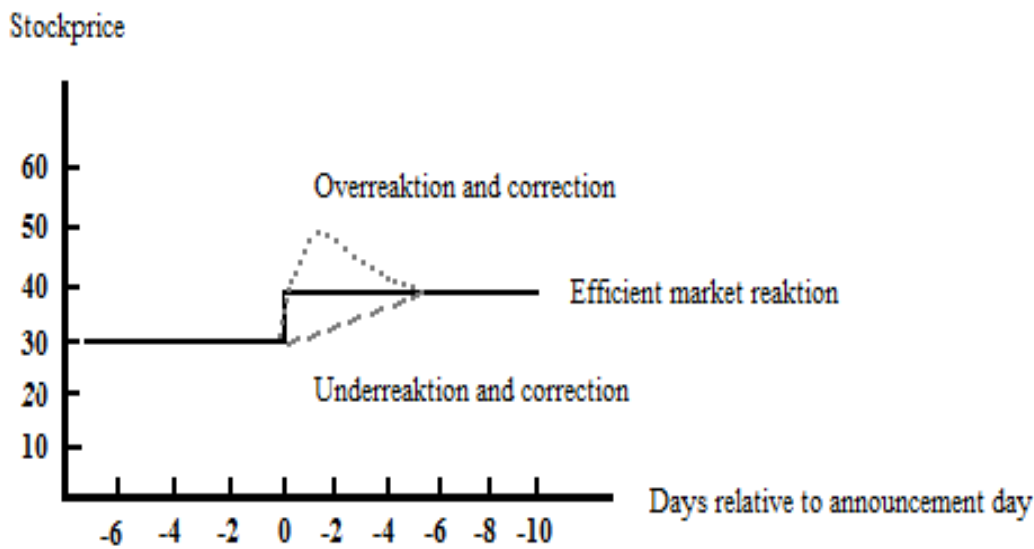*Figure 3.1: Stock price reaction to new information in an efficient and inefficient market*

Source: Haugen, Robert A, "Modern investment theory", fifth edition, Upper Saddle River, N.J Prentice Hall. (2001), s 581

The theory about efficient markets has been a widely discussed subject during many decades. However, it was not until the beginning of the 1970s when Eugene F. Fama put forward his

research that the keystones were laid about how the classification of efficiency performance in the markets should look like. Fama's work then became the fundamental theoretical basis for future studies and research. The hypothesis is about how fast the price of a stock gets corrected after new information about the specific stock has been released. When the new information reaches the market, market participants will evaluate it and relocation of the managers' portfolios exploits any profits. This relocation brings changes in supply and demand in the market and this will establish what the new equilibrium price is. The new equilibrium price includes all the new information as it is the investors' own values, which triggered the changes in price. The prices therefore function as carrier of information and price adjustments is the overall market response to the new information. (Hansson & Högfeldt 1988)

If a certain type of information is not reflected in the price or if there is a delayed effect, this is indicating that the market is not as efficient as it could be. It is hard to determine though exactly when a market is efficient in its absolute sense and therefore it is customary to divide the market efficiency into different levels. It was originally Fama (1970) who started this division and reached the conclusion that the market efficiency can either be weak, semi-strong or strong. Under each division different types of information are assumed to be reflected in the stock prices. (Haugen 2001)
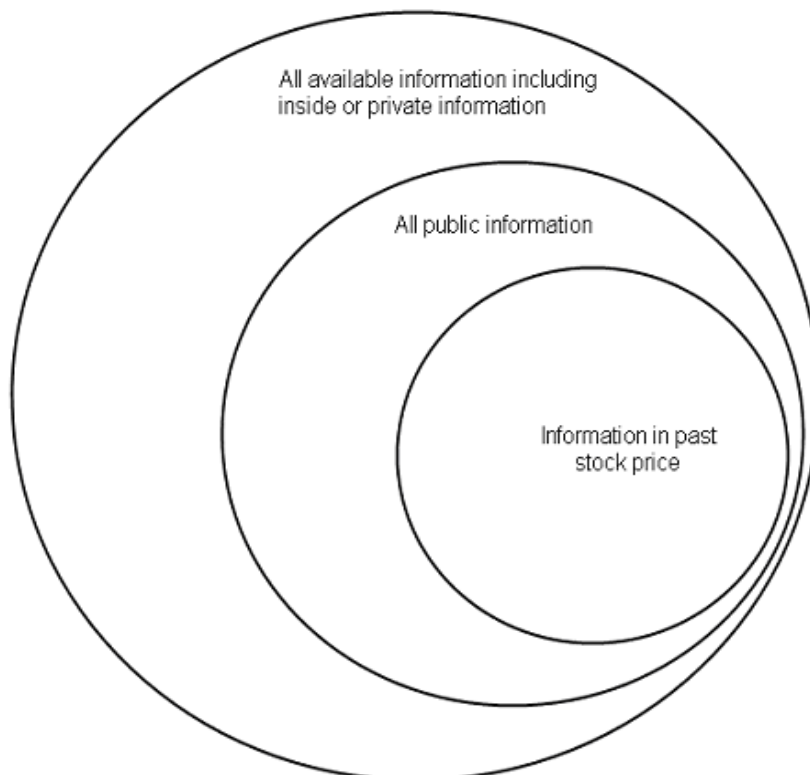
The inner circle represents weak efficiency, the middle circle semi-strong efficiency and the outer circle strong efficiency.

3.1.1. Weak form of efficiency

Weak form of efficient market is characterized by all historical information being included in the price of the stocks. This means that if a weak form of efficiency exist, it would be strategically impossible to generate abnormal return against the market index using a so-called technical analysis. The reason for this is that the information contained in the historical prices are also included in current and future prices, which means that they are economically exploited. The weak efficiency is often compared to the so-called random walk hypothesis. Random walk means that if prices follow a random walk, this brings price changes over time to be independent. In other words, the price changes that are taking place today are not related to yesterdays or any other day's price changes. Therefore, the only thing that controls the change of the stock price is recent information on the market. An easy way to test the weak form of market efficiency is to use statistical methods to find patterns in the price series, which is contrary to the random walk hypothesis. (Haugen 2001)

Results from studies show that deviations from randomness do exist, so-called anomalies, but they occur to a low extent and work in exceptional cases, such as in investment strategy with net earnings as a result (Ross *et al* 1999).

3.1.2. Semi-strong form of efficiency

In the midrange form of market efficiency is the semi-strong form of efficiency. This level is characterized by prices reflecting all available public financial information. This includes in addition to historical information, annual reports, press release, profit forecasts and other similar information. Investors cannot "beat the stock market" and make an abnormal return by studying analysis and reports as the price of a stock already contain this information, hence fundamental analysis is considered redundant. This level is interesting in our thesis so that results can show how quickly the new information on how downsizing can be incorporated into stock prices. (Haugen 2001)

Empirical tests show fairly clearly that there exists a semi-strong form of efficiency in the world's stock market. The tests used are often event studies in which a company's stocks are studied to see how the outcome could be on a specific event. The hypothesis that the stock market is semi strong is hard to reject and the abnormalities found are often too small or too temporary. This is not to say that it does not occur, but not to the point of invalidating the hypothesis. (Ross et al 1999)

3.1.3 Strong form efficiency

The strong form of efficiency, notes that the stock price adjusts immediately to any type of information, that is, not only public but also private information. This means that everything that affects the price is known by a few players and would therefore be discounted in the share price. On that basis it's impossible that a player on the market, who possesses exclusive information, can generate abnormal profits (abnormal return). However, it is proven that strong efficiency does not exists in the market. Empirical studies on insider trading shows that the special information and knowledge that only an investor holds, is not fully incorporated into the stock prices. (Ross et al 1999) In this investigation this could mean that if there are any abnormal returns the days before the announcement, it could indicate that the market is not strong efficient.

3.2. The Signaling hypothesis

Signal hypothesis is based upon the fact that information has an economic value and that there is information asymmetry between two parties, e.g. between the market and the management of the company. This can be prevented by one party sending out signals which reveals information to the other party. (Spence et al 1973)

There is information asymmetry on the stock market between the management (agents) and the players on the market (principals) and an example of this could be expected profits and repurchase of stocks. The management could affect the stock price due to such actions and these give signals to the player on the market about the stock. The management is well aware about the signaling effect and usually exercises it to penetrate the power of their announcements. (Ikenberry et al 1995) Consequently, the signaling hypothesis is about the

information the management is signaling to the players on the market and how they perceive and receives this information.

In his article from 1974 Spence presents the following four common factors that exist in markets where there is asymmetric information:

- It exists asymmetric information between buyers and sellers
- Buyers know less about the stock than the sellers
- Sometimes in the course of transacting, sellers issued a signal, to which the buyers respond
- The signal emitted depends in part upon the buyer's response to signals. This response is either known or anticipated by sellers

He also writes that the recipient interprets the information, which for him is not quantifiable, from his own experiences and acts accordingly. (Spence 1974)

Moreover, the asymmetry information may lead to that the value moves from small stock owners to large owners. Only the large owners will gain from becoming informed due to the cost of collecting information about the company´s situation. Small owners tend to sell the stock when the price is far too low and stay with the stock when the stock price is far too high. (Brennan & Thakor 1990)

This is relevant to our study as we examine if the popularity has any effect on the stock price and if so, can the signal hypothesis have a theoretical explanation value when examining the interaction between the company and players on the market and how the players on the market interprets the information.

3.3. Downsizing as the source of productivity

Baily et al (1996) argues that there is a common conventional wisdom that downsizing is the source of productivity. By using the downsizing strategy the organization becomes "lean and mean" and the market analysts applauded the large-scale downsizing that was made during the peak of its popularity. The thought of the correlation between downsizing and productivity is based on facts. During the 1960 to 1970 the productivity and the employment were growing

in the same proportions. This change in the mid 1980s when the productivity heavily recovered from the recession in the early1980s, but the employment never fully recovered in the same way as the productivity. This means that the productivity soon became larger than the employment and the organizations became even more efficient than they were before the recession. (Baily *et al.* 1996)

3.4. Three approaches to downsizing

Wilkinson refers to Cameron (1994) who argues that *the way* the downsizing is implemented is of greater importance than the fact that *it is* implemented. Cameron (1994) presents three different ways of downsizing strategies when managing the downsizing. (Wilkingson 2005)

3.4.1. Workforce reduction strategy

This strategy is usually implemented from top-down. As the name suggest, the strategy is focusing on reducing employees, and is not focusing on long-term sustainability. The strategy is managed from top-down and because the strategy is implemented in a short period of time the communication towards the employees is limited. The lack of communication between the decision-makers and the employees often leads to the feeling of unfairness and distress from the employee's point of view. This strategy can lead to the "survivor syndrome" as is presented further on in this thesis. The workforce reduction strategy is efficient in the sense that the reduction of employees and cost cutting is a fast process. (Wilkingson 2005)

3.4.2. Work redesign strategy

The focus of this strategy is based on the work that is made in the organization. Instead of reducing the number of workers this strategy is focusing on reducing work hours. This makes the strategy more of a medium-term strategy. (Wilkingson 2005)

3.4.3. Systematic strategy

The systematic strategy focuses on changing the culture and the attitude instead of the workforce size. This strategy is an on-going process of improvement instead of something that is implemented to make a drastic change. It has a long-term perspective and the task is to make sure that the right individuals are part of the organization and therefore uses downsizing

to let the wrong individuals go and have a healthy turnover of the workforce. (Wilkingson 2005)

3.5. Mismanaged downsizing

The downsizing management strategy is of particular importance to manage with care because of the negative effects that can occur if mismanaged. The negative effects that can arise of mismanaging the downsizing strategy are of greater size than what the positive effects that the strategy can provide for the organization if managed right. The asymmetry of the outcomes makes the downsizing strategy ambiguous. The mismanagement can damage the organization not only in the area of employment but it can also damage the reputation of the organization. If the organization gets a bad reputation it does not only affect the potential future employees, it affects the way costumers sees the organization and think of its potential of productivity in the future. (Wilkingson 2005)

3.6. Survivor syndrome

It is not solely the ones that get fired who are affected by downsizing. When working with downsizing there is often much focus on the workers who have been made redundant. Doherty and Horsted (1995) argues that the focus should also be on the *survivors of downsizing*. When using the downsizing strategy to streamline the organization there has to be a focus on the employees who are still a part of the organization if the change is going to function as planned. Organizations often underestimate the negative effects of downsizing when considering the motivation of the surviving employees. (Levitt *et al*. 2008) Watching co-workers lose their jobs often emotionally damages the survivors. The survivor syndrome is the decrease of motivation and loyalty to the organization and at the same time the increase of stress levels that occurs when the workload is divided between fewer employees. The organization has to antagonize the survivor syndrome at any cost. When survivor syndrome occurs it is often defeating the positive effects of downsizing. Studies have found that the response of the survivors is closely connected to the way the employees who got laid off were treated. It is of great interest for managers to be aware of this aspect of the strategy. The survival syndrome can contribute to making the organization ineffective after downsizing. (Wilkingson 2005)

3.7. Theory of fashion

The theory of fashion is based on the theory of the production of culture. The theory of fashion does not only focus on the new demand, instead the theory is based on the assumption that organizational systems 'sense' popular demand and then build cultural forms to supply the demand. The cultural forms do not only supply the demands, it also broadcast the new cultural forms to fashion followers. This means that the cultural form spreads and become known and fashionable. This theory explains how a fashion is started and can be used to explain the fashion of downsizing. (Abrahamson & Eisenman 2008)

3.8 Fashion trends in management strategies

Abrahamson and Eisenman (2008) present two different theories why there are fluctuating trends in management strategies. The first one is the rational norms. This type of norm is based on the expectations that management strategies will offer the most efficient solutions to the organization. The management strategy is the solution to any existing problem. This means that there can always be a strategy that is more efficient than the already existing strategy. If there is always a search for the best strategy, the search will never end, and this explains the fluctuation of fashion to different management strategy. The second norm is the progressive norm; this norm has the expectations that management strategies will progress and become more efficient over time. This means that the management strategy will repeatedly be replaced by new and improved strategies. This norm explains why there has to be an ongoing supply of management strategies that can be implemented in the organizations. The rational and the progressive norm will create constant fluctuation in the management strategies and this explains why there are fashion trends in management strategies. (Abrahamson & Eisenman 2008)

3.9. Previous Research

The purpose of this part is to give the reader a comprehensive picture of the investigating area. This way it becomes easier to understand the empirical chapter and the result chapter. We explain the most relevant of the previous studies that are most important for our thesis.

3.9.1. Farber and Hallock (2009)

Farber and Hallock (2009) have done a thorough investigation on how the stock market's reaction to downsizing has changed over time. They have looked at 4273 announcements in the United States over a period of 30 year starting from 1970 and ending in 1999. Farber and Hallock found out that the change was quite significant. The average stock price reaction to downsizing during the period was –0,315%. The investigation used an event window of three days and used the market model to estimate the normal return. When breaking down the time period in decades the change became viewable. In 1970s the reaction was -0,594%, during the 1980s it was -0,240%, and during the 1990s the reaction was as low as -0,059%. The reaction in the 1990s was a tenth of the size of the reaction in the 1970s. (Farber & Hallock 2009)

3.9.1.1. Change in information content of announcements

This theory argues that the reaction is declining since the 1970s because of the significant differences in quantity of information available for players on the market. The technological development has caused the downsizing announcements to be of less importance. There is not as much new information in the announcement as it was in the 1970s because the players on the market can find most of the organizational information and draw their own conclusion about the organizational situation before the announcement occurs. This would lead to make the reaction on the stock market more settled. (Farber & Hallock 2009)

3.9.1.2. Change in composition of announcements

Farber and Hallock argue that one theory for the decline of the negative reaction is how the downsizing is presented in the announcement, and how this presentation has changed over time. There is a significant difference in how the reason for the layoff was presented in the 1970s and how it is presented in the 1990s. The announcements have over time been changing towards focusing on pointing out that downsizing is not made because of economical distress, but because of the will to reorganize and slim the organization. (Farber & Hallock 2009)

3.9.1.3. Other characteristics of announced downsizing

There may be other characteristics that determine the reaction on the stock market. It can be characteristics in addition to the, in the announcement, stated reason for the downsizing. It can be e.g. the type of employees who gets laid off, e.g. workers or managers. It can be the type of announced layoff, if it is temporary or if it is permanent, or it can be the amount of downsized employees. It can also depend on if the layoff is in connection to other layoffs or if it is a

single event. (Farber & Hallock 2009) These characteristics are hard to base an assumption on, but it is of importance to have in mind that there are often impacts that is hard to see in the results of an investigation.

3.9.1.4. Variation by industry

There has been a significant change in what industrial composition has made downsizing announcements since the 1970s. The manufacturing part of the total downsizing went from 88,6% during the 1970's to 64,4% during the 1990s. This significant change could have had an impact on the on the overall impact on the reaction. This opens up for the possibility that the decreasing negative effect may be based on the industries that downsize and not on the management strategy itself. (Farber & Hallock 2009)

3.9.2. Lee (1997)

In her study she compared and examined the stock price reactions of a layoff announcement in Japan and the United States from 1990 to 1994. Lee distinguishes between if the layoff was proactive or reactive and if the layoff was the first in the industry. A proactive layoff is a part of a strategy and a reactive layoff is the sole response to the poor financial situation the firm is in. The results for all announcement showed that a layoff announcement in both United States and Japan brought negative returns for the firm. A layoff announcement in the United States was associated with a negative 1.78 percent negative abnormal return while in Japan the same situation was associated with a negative 0.56 percent abnormal return. The only selection criteria Lee used was that the company should be listed on the New York Stock Exchange, American Stock Exchange or NASDAQ. In Japan she used the same criteria but on the Tokyo Stock Exchange. She found 300 firms in the United States and 58 in Japan. She found the announcements in the country's main economy newspapers. To examine the reaction on the stock price she used an event study with an event window of (-2, +2) days. From the news articles she identified whether the layoff was proactive or reactive and if the layoff was the first in the industry, and if results from this breakdown differed. One of the explanations for the difference between the countries she made was that the market index used to calculate the abnormal returns in the Japanese sample may not be representative due to the fact that the index used only represented highly capitalized and large stocks. She also suggests that investors in the United States may see layoffs more as a sign of financial distress rather than a way to increase the firm's competitiveness, as opposed to investors in Japan. (Lee 1997)

3.9.3. Chalos and Chen (2002)

The article begins with that the results from empirical surveys of the impact of downsizing on the financial performance are vague and refer to different surveys (Mentzer 1996, Cascio et al. 1997, Elayan et al. 1998, Lee 1997, Worell et al. 1991) who have investigated this phenomenon. All of the surveys found that the companies who have used downsizing did not show better financial performance than the average of their industries and that the stock price reaction of a downsize announcement was negative. Furthermore, Chalos and Chen examined the market reaction to three different types of reconstructions according to employee downsizing. Their selection criterion was 365 companies on the Fortune 500 list and the time horizon was 1993-95. They used the market model to estimate the normal return using an event window of (-1, +1) days. The total result from all of the downsizing types in the investigation was a CAAR of -0,265%. (Chalos & Chen 2002)

3.9.4. Gundersson, Verma A., Verma S. (1997)

The survey investigated the stock returns of a downsize announcement on 84 firms listed on Toronto Stock Exchange. The 214 observations they finally observed occurred between 1982-89. Besides the examination of the total CAAR from a downsize announcement they also examined if the downsize was proactive or reactive, partial or full, definite or indefinite. The event window they used was (-1, +1). The survey totally resulted in a negative CAAR of 0,47% over the three-day event window. Due to the fact that the average annual return on the Toronto Stock Exchange is 12%, this drop of 0, 47% response for a loss of about 4% (0, 47/12) of one year of growth. The authors also concluded that the day of which the announcement is made and the day after the announcement was responded for almost all of the negative return. In other words, the market could not fully predict the new information but the market responded to the new information fast. (Gunderson 1997)

CHAPTER 4

RESULTS

In this chapter we present the results we have reached. We do this mainly with tables and graphs so that the results are expressed in a comprehensible manner. First we present the Average Abnormal Return and the Cumulative Abnormal Return for each event windows and then we end with two graphs that compare the both event windows.

4.1. Total results of 1990-92
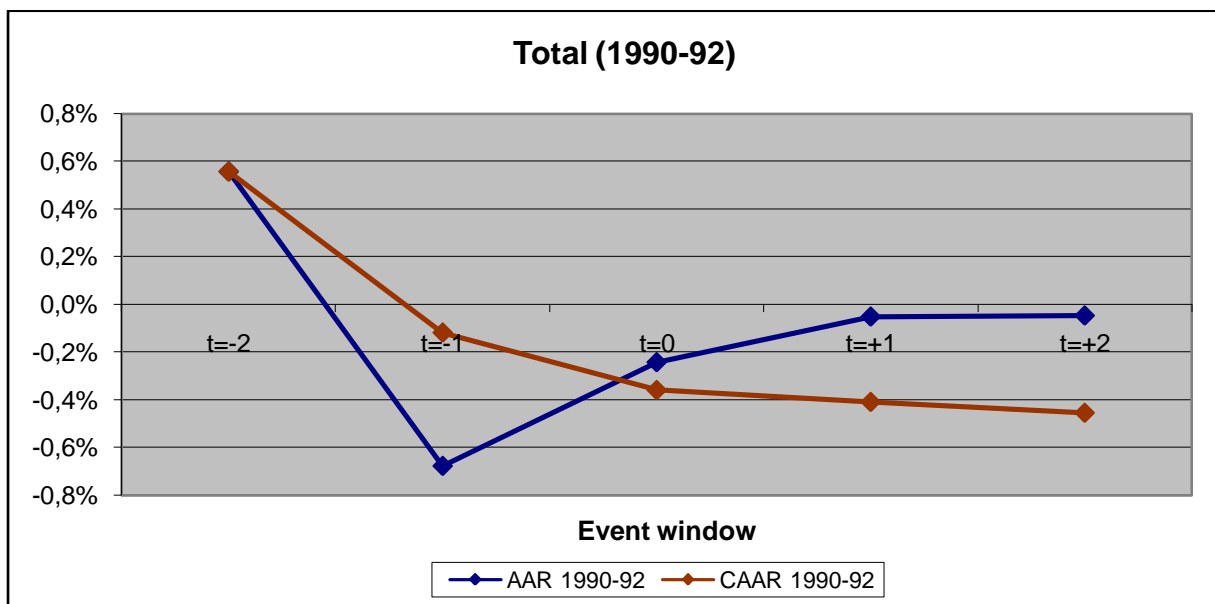
Figure: 4.1: AAR and CAAR 1990-92

The graph show the Average Abnormal Return of the different days in the event window. The calculations were made on 44 observations. There is a negative abnormal return on the announcement day (t= 0) of 0,24%. The most remarkable is the negative abnormal return of 0, 68% on the day before the announcement (t= -1). We have not achieved to ensure these numbers statistically which could be seen by looking at the p-values, were all days are higher than 5%, in table 4.1. During the event window the CAAR, which is the total AAR during the event window, amounts -0,46%. Neither is the CAAR statistically ensured.

	t= -2	t= -1	t= 0	t= +1	t= +2
AAR 1990-92	0,56%	-0,68%	-0,24%	-0,05%	-0,05%
p-value	0,11006	0,06351	0,39932	0,87041	0,86227
CAAR 1990-92	0,56%	-0,12%	-0,36%	-0,41%	-0,46%
p-value					0,54864

Table: 4.1: AAR and CAAR 1990-92

4.2. Total result of 2007-09
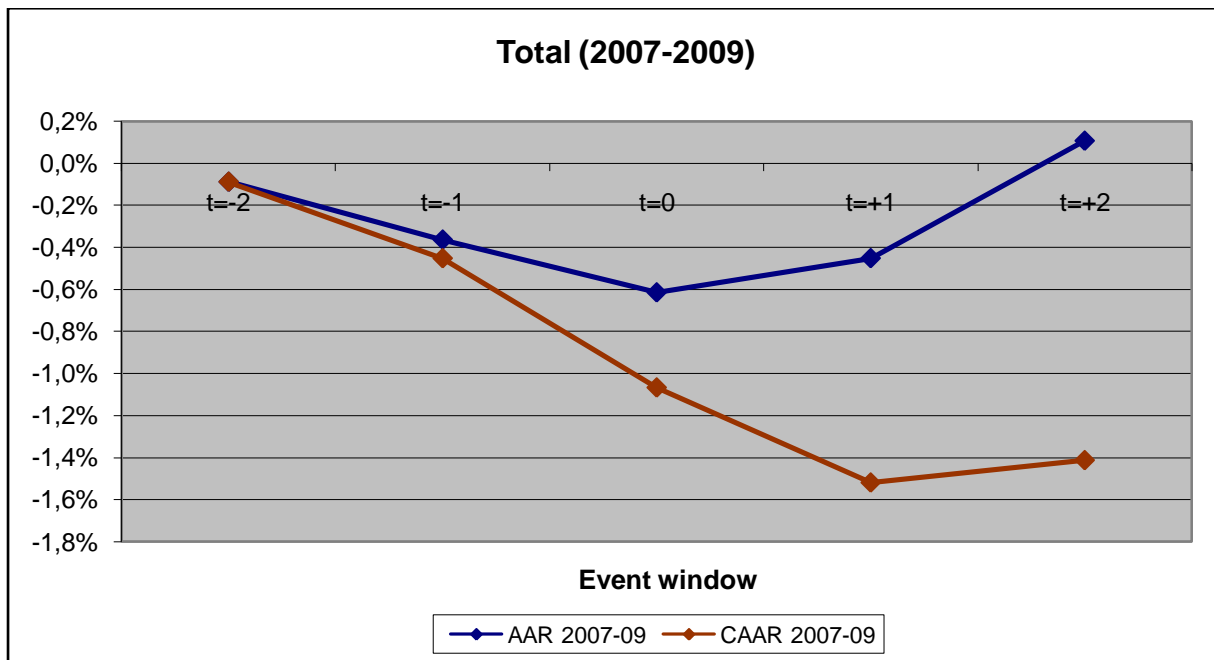
Figure: 4.2: AAR and CAAR 2007-09

In this period the observations were a little more than previous period and amounted 57. All the days in this event window, except (t= +2), show a negative abnormal return. The negative abnormal return is greatest on the announcement day (t= 0), where -0,61% is achieved. The CAAR in this event window is more negative than in 1990-92 and amounts to -1,41%. We have neither in this period achieved to statistically ensure the numbers which can be seen by looking at the p-values.

	t= -2	t= -1	t= 0	t= +1	t= +2
AAR 2007-09	-0,09%	-0,36%	-0,61%	-0,45%	0,11%
p-value	0,78291	0,24763	0,12082	0,12369	0,80092
CAAR 2007-09	-0,09%	-0,45%	-1,07%	-1,52%	-1,41%
p-value					0,13401

Table: 4.2: AAR and CAAR 2007-09

4.3. AAR Comparison
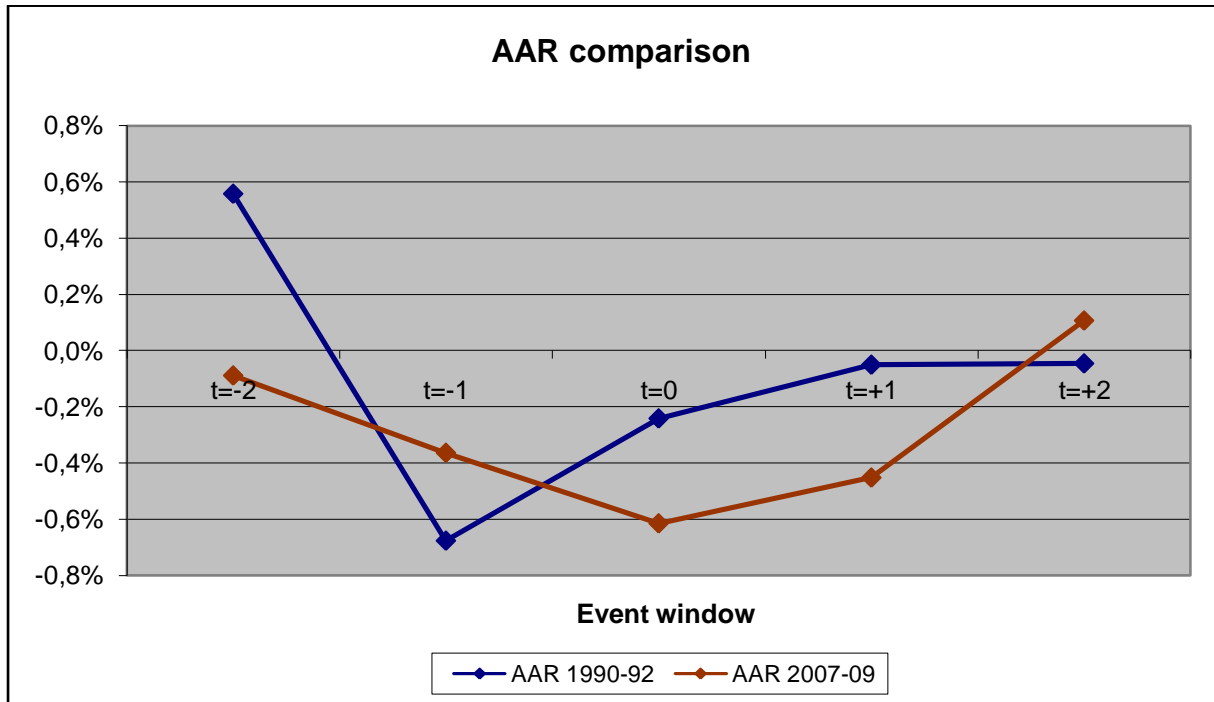
Figure: 4.3: AAR comparison

This graph shows that the differences between the both event windows were most pronounced at day (t= -2), (t= 0) and at (t= +1). The differences can easier be seen by looking at the p-values in table 4.3. or in table 4.4. As seen in the graph, the Average Abnormal Return for (t=0) is more negative in period 2007-2009 than it was when downsizing was fashion. When downsizing was in fashion the market seems to have reacted to day (t= -1) instead of day (t= 0) as seems to be compared to how the market reacted to when downsizing was not in fashion. Unfortunately, this is not statistically ensured.

	t= -2	t= -1	t= 0	t= +1	t= +2
AAR 1990-92	0,56%	-0,68%	-0,24%	-0,05%	-0,05%
AAR 2007-09	-0,09%	-0,36%	-0,61%	-0,45%	0,11%
p-value	0,17090	0,50924	0,44088	0,34193	0,75928

Table: 4.3. AAR values and the p-value between them.

	t= -2	t= -1	t= 0	t= +1	t= +2
Δ AAR	0,64721%	-0,31276%	0,37308%	0,40162%	-0,15189%

Table: 4.4. Differences in AAR

4.4. CAAR comparison
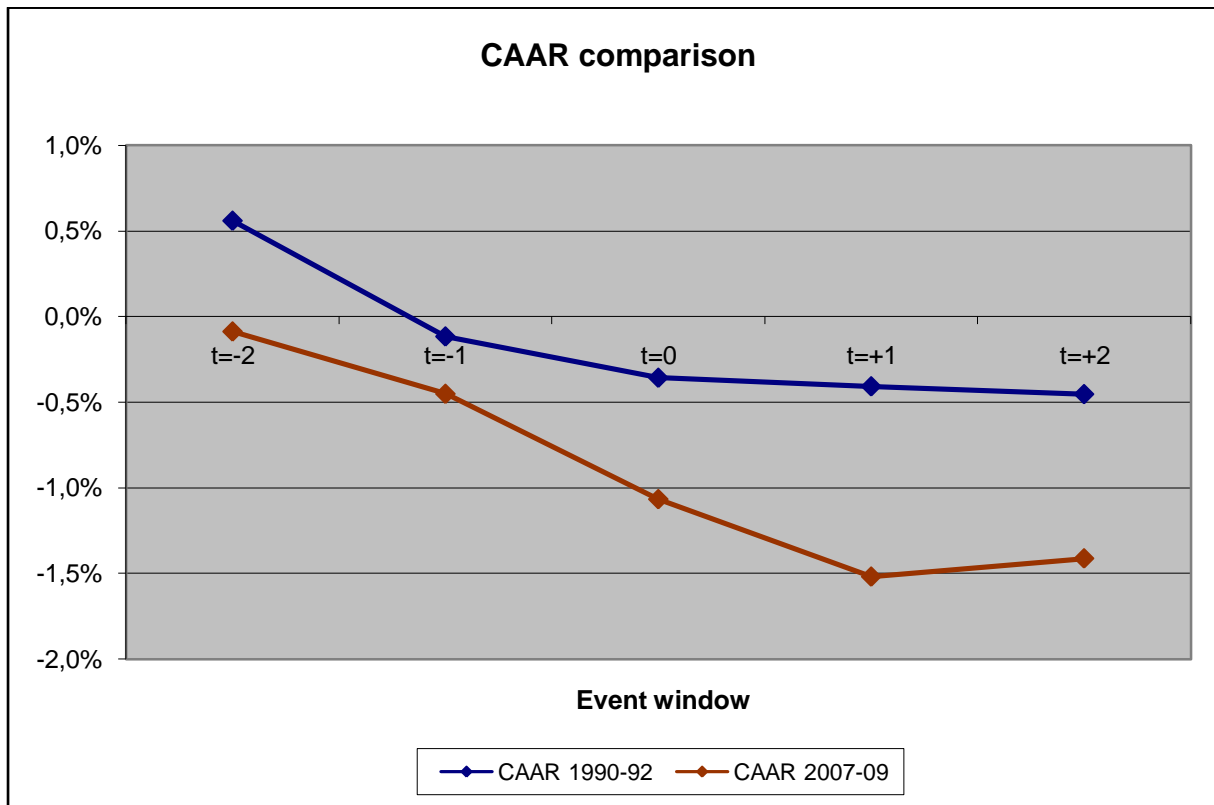
Figure: 4.4. CAAR comparison

The overall Cumulative Average Abnormal Return is more negative when downsizing was not in fashion than when it was. The differences between the periods are largest from (t= 0) and forward, which can be seen in table 4.4. Nevertheless, the CAARs in the event window (-2, +2) are negative -0,46% and -1,41% respectively.

	t= -2	t= -1	t= 0	t= +1	t= +2
CAAR 1990-92	0,56%	-0,12%	-0,36%	-0,41%	-0,46%
CAAR 2007-09	-0,09%	-0,45%	-1,07%	-1,52%	-1,41%
p-value					0,42542

Figure: 4.5: CAAR values and the p-value (-2, +2)

However, the null hypothesis cannot be rejected which means that we cannot statistically ensure any differences between the two periods. This means that the reaction of the players on the market does not have any impact on the stock price when downsizing was in fashion and when it was not.

CHAPTER 6

ANALYSIS

In this chapter the results from the previous chapter will be analyzed from a broader perspective. We begin to analyze our results from a financial view then we continue with an organizational view to finally compare our results with previous research.

First, the investigation cannot be statistically ensured. This means that a rejection of our null hypothesis cannot be made. According to the statistical tests there are no differences between the two CAARs, which means that the stock market´s reaction to an announcement of downsizing does not differ when downsizing was in fashion and when it was not. However, a discussion of the results from the graphs is made in this part.

Signaling hypothesis

Because of an information asymmetry between the management of the company and the market, the signals the management could release due to an announcement will be interpreted and perceived differently from the different players on the market. The players on the markets will be interpreting the new information from their position and experiences. The negative reaction from the market about the announcement, as our results shows, may be because the market perceived the downsizing as a signal of lower demand. A lower demand of the company´s products will of course lead to a weaker financial performance of the company and lower expectations on the company. If this is the case, the stock price will decrease. The differences in the reactions of the two time periods could be explained from the signaling hypothesis. When downsizing was in fashion the market could perceive the announcement as a way to increase the productivity of the company. The announcement may be interpreted as the management had found a new way to the same level of production with fewer employees. This would probably increase the efficiency of the company, hence the expectations would result in an increase in stock price. Due to both negative reactions, all of the players on the market could not perceive the announcement as described above. The above explained signal perceiving way may be an explanation to the lower negative reaction in 1990-92. The majority of the market probably perceived the announcement as somewhat negative, but the other part probably perceived the announcement as somewhat positive. This could either be perceived as something that would increase the efficiency of the company or that the

company was using a fashionable strategy indicating that the company was conscious about "the fashion". In the time period 2007-2009 the announcement was received more negatively than during 1990-92. One explanation to this could be that the players on the market had experienced the time when downsizing was in fashion and was a commonly used strategy, i.e. 1990-92. Due to the negative reaction in the last period mentioned, the players on the market were well aware of the consequences the announcement would give. Because of their past experience they perceived the information about the downsizing as something negative and sold the stock instead of keeping it or even buy more stock.

The efficient markets hypothesis

This hypothesis has its base on how fast the price of a stock becomes corrected after new information concerning the stock has been released. If stock prices respond to all new information very quickly, the market is relatively efficient and it is not possible to generate any abnormal return.

In figure 4.3 the stock's AARs for the various periods of time are presented. For the days (t= -2) and (t= -1), we see that there is an abnormal average return, for both of the two periods. This could indicate that the market is not strongly effective. During the period 1990-92, the abnormal return day (t= 0) is very small and the two subsequent days it is almost zero. This could indicate that the market is semi-strong as there is not an under reaction and a correction or an overreaction and a correction. During the period 2007-2009, the abnormal return of the stock price reaction for day (t= 0) is small, day (t= +1) is marginally smaller and for day (t= +2) it is somewhat positive. The reaction suggests that there is a marginal delay, which could indicate that the market is not semi strong.

Theory of fashion

The theory of fashion is based on the assumption that the organizational system is in constant change to satisfy the new demands. The organizational system 'sense' the new demand and from this the system builds a fashion form. (Abrahamson & Eisenman 2008) In our case, the fashion of downsizing, the organizational system reacted to the demand of letting employees go. This can have been due to many different reasons and are hard to determine but the organizational system reacted to the fact that organizations were inefficient because of too many employees. The theory of fashion explains that when the organizational systems 'sense'

the new demand it starts to build a fashion form. The fashion form is supplying the new demand and at the same time spreading the cultural forms that will satisfy the demand. (Abrahamson & Eisenman 2008) In our case the organizational systems 'sensed' the need to downsize organizations and when managers started to use the downsizing strategy the organizations became lean and efficient. This made other managers interested in the strategy and the fashion of the strategy was implemented. When mangers realised that other organizations became leaner and more streamlined with the downsizing strategy they also wanted to implement the strategy.

Another theory of fashion trends in management strategies is the rational and the progressive norms that Abrahamson and Eisenman (2008) present. These norms could explain why the downsizing strategy suddenly became fashionable and it would also explain why the strategy became out of fashion. There is an urge to evolve that makes managers want to change existing foundation to try something better. This makes the fashionable management strategies an ongoing change process that will never end.

Downsizing as a concept

As discussed in the beginning of this thesis there are some articles arguing that the downsizing strategy is effective, and other arguing that downsizing is negative for the organization. In the 'Downsizing as the source of productivity' Baily et al. (1996) argues that the downsizing strategy historically has been economically efficient. The downsizing increases the productivity of the organization, making the organization lean and efficient and at the same time decreases the production cost because of fewer employees. The increased performance by downsizing shown in the past indicates that the strategy is efficient. This is something that should make the players on the market interested in possessing stocks in the firm, and also attract new investors. This would result in an increase in the stock price when an announcement of downsizing occurs. But shown by the results of our investigation, the stock price is not following this estimation.

Our results indicate that the players on the market do not believe that the downsizing strategy will increase the productivity of the organization. If this had been the case, the stock price would increase rather than decrease as a reaction to a downsizing announcement. One reason

for the negative response can be that the strategy is commonly used in negative situations, e.g. for cost cutting when the demand is decreasing. Thus, even when downsizing is used in a positive state of the market, the players on the market will still perceive it as if the organization is in economical distress. We argue that if Baily et al. (1996) is right in his arguments, then downsizing is a misunderstood strategy. If the strategy does make the organization more efficient and streamlined and the players on the market have the opinion that the strategy is negative for the organization, it would lead to the organization becoming underestimated.

How the strategy is implemented, not that it *is* implemented

We argue that the level of negative reaction on the stock price from downsizing announcement depends on if downsizing is in or out of fashion. This is because the players on the market have different expectations of the strategy. If the reaction of the market differs because of fashion then we argue that the way to implement the downsizing should be in line with what the players on the market expect. If implementing the strategy in a different way or using the strategy in a non fashionable way, then the fact that the strategy is in fashion will not have much impact on the reaction. As Cameron (1994) argues, *how* the strategy is implemented is of greater importance than that it *is* implemented.

There are different ways in which downsizing can be executed. As mentioned earlier our investigation mainly focuses on the 'workforce reduction strategy'. This strategy focuses on cutting costs and does not put much resource into making the employees feel as a part of the organization and is instead focusing on the cost cutting. The players on the market in the 21st century might see this strategy as a last resort to use rather than something that is used to make the organization more efficient. This is because the focus on the employee and on the feelings of the employee is something that is of importance in an organization of today.

The role of the employee has shifted from being a "removable asset" to be a more important part of the organization and making the organization effective. We argue that the latter is most common today which will make the reduction of workforce a last resort. Because of the opinion of the situation as the last resort, the situation will be perceived as an organization in financial distress. The organizations in the 1990s were more top-down led than the organizations of today. Because the 'workforce reduction strategy' is implemented from the

top of the organization, the strategy is more startling when used in the 21st century than the 1990s. This can explain our results that indicate that the reaction to the strategy is more negative in the 21st century than in 1990s.

Other approaches that are of importance to take in consideration are the 'work redesign strategy' and the 'systematic strategy'. These are two approaches of downsizing that are not detectable in our investigation. But in contrast to the 'workforce reduction strategy', these are strategies that are more in the field of strategies that are used today. The focus on HRM and the willingness to keep the organization intact and to select out the "right people" to work in the organization are more in line of the management strategies of the 21st century. We argue that this might be the reason to why the 'workforce reduction strategy' is negatively viewed by the players on the market. Because the two more humane strategies are substitute to reducing workforce and then this could contribute to make the 'workforce reduction strategy' less used and therefore more of a last resort and eventually so rare that the market perceive it as not fashionable.

Managed downsizing

Downsizing is a management strategy that is of great importance to manage correctly because of the asymmetry between the positive effects when managing it right, in contrast to the negative effects when mismanaged. (Wilkingson 2005) When analysing our result using this view the reason to the negative effects are greater in 21st century than the 1990s can be based on a historical perspective. If the negative effects to a mismanaged downsize is disproportionate to the positive effects to a correctly managed downsize, then the result over time can be misleading. Even if the mismanaged downsizing may not appear as much as the right managed downsize, the overall result can be negative. These disproportional effects can give the strategy a false reputation of being inefficient or bad for an organization. We argue that people attend to remember the extraordinary situations better than the more common. When the downsizing management strategy became frequently used in the 1990s, then players on the market were not so familiar with the results of the strategy. During the time between the 1990s and the 21st century the mismanaged downsizing may have occurred and can have made people get a negative impression when a downsizing strategy was implemented. This can explain why the players on the market in the 21st century have a more negative view of the downsizing strategy than the ones in the 1990s.

One example of the results of a mismanaged downsizing is the 'survivor syndrome'. This syndrome is something that occurs when a downsizing situation has not gone as planned and the employees who are left in the organization after the downsizing feel stressed and disloyal to the organization. This is a situation that makes the organization inefficient and the productivity low, both in a short- and long-term perspective. The survivor syndrome can drown the claimed positive effects of downsizing. It is understandable that the players on the market have this included in the calculation when an organization is downsizing and that could explain the negative reaction on the stock price. We argue that when the downsizing strategy was 'new' and fashionable in the beginning of the 1990s this negative effect of the strategy was delayed, and therefore was the consequences of the survivor syndrome not discussed in the beginning and did therefore not affect the positive effects of the strategy at that time. This could explain the different reactions to the strategy depending on time periods.

Comparison with previous research

Farber and Hallock's (2009) thorough investigation of how the reaction of the stock market reacts to an announcement of downsizing has changed during a period of three decades and show a significant and steady decline of the negative reaction. The investigated period of time starts in the 1970s and lasts throughout the 1990s. During this time the negative reaction is declining significantly from decade to decade. In the 1970s the negative reaction on the stock price to the announcement of a downsizing was -0,594%. This stock market reaction fell by 50% in the next decade to a reaction of -0,240%. This indicates that the downsizing was considered less negative by the players on the market and that could indicate that the strategy was beginning to be more accepted as a management strategy. There was an even bigger change between the 1980s and the 1990s when the reaction was down as low as -0,059%, this is a tenth of the reaction in the 1970s. The reaction on the stock market went down with an average of -0,315% per decade; this means that if this trend would continue in to the 21st century then the reaction should have been positive instead of negative. According to the result of our investigation this trend has changed into being negative instead.

The research of Farber and Hallock (2009) is not investigating the reaction of the market in the beginning of the 21st century, even though the article was written in 2009. We have in our investigation examined the time between 2007 and 2009 and therefore we cannot generalize

the whole decade but we argue that our results from these years are still interesting to compare to the discoveries of Farber and Hallock (2009). During the time of our investigation the average negative reaction, of the stock market when an organization announces a downsizing was -0,477% using a tree day window (-1, +1). This reaction is twice the amount of the reaction in the 1980s, and eight times the reaction as in the 1990s. The average reaction during the tree decades from 1970 to 1999 was -0,315%. The players on the market react much more negative to the announcement in the 21st century than the average reaction during the last three decades. We have here found evidence of the fluctuation of the reaction to a management strategy. When comparing the results from decade to decade you can see that the negative reaction finds a "low point" in the 1990s, we argue that this indicates that it is the peak in the fashion of downsizing as a management strategy. The fact that the same situation gets a significantly different reaction from decade to decade can be explained from our hypothesis; that the reaction on the stock market depends on if the management strategy is fashionable at the time or not. If the stock market reacts differently to the same announcement it is depending upon the popularity of the management strategy, this could indicate that the Swedish stock market is irrational and that fashion of management strategy does matter.

Our results seem to be in line with one of the results Lee (1997) achieved. Even though the investigations are made on different Stock Exchanges we argue that some common parallels can be drawn. We found a CAAR of the first period (1990-92) of -0,46 % while Lee found a CAAR for the same event window (-2, +2) in Japan of -0,56%. The comparison might be wrong due to the fact that Lee´s time period was one year longer than ours resulting in 14 more observations than we have. The difference to the results on the U.S. market is huge and could be explained by the United States world leading position. We argue that almost all countries were some years behind the United States in all kind of business developments in the early 1990s. Thus, it may have been fairer to compare the stock markets in Sweden and Japan 1990-92/94 with the U.S. stock market in 1988-1991/92. The downsizing strategy may already have been experienced by the players on the U.S. market which did that they perceived the signals about the announcement in 1990-94 as somewhat negative, hence a larger negative reaction compared with the reaction in Sweden and Japan.

If we compare our results with Chalos and Chen's (2002) and with Gundersson et al (1997) we see that our results are more in line with Gundersson et al. than the result by Chalos and Chen. Though Gundersson et al (1997) used an event window of (-1, +1) and investigated

between the period 1982-89, their result (-0,47%) is very similar to our result (-0,46%) in our first period. However, it is difficult to draw any conclusions about this relationship due to our different time periods. Comparing with Chalos and Chen (2002) our result (-0,46%) is higher than their result (-0,265%). It is also in this case difficult to draw any conclusions about what the impacts of the difference depends on due to the different time period and different event window.

CHAPTER 7

CONCLUSIONS

In this chapter we summarize the conclusions we have drawn from our investigation that has been presented in the previous chapters. We end this chapter with proposals to further research and criticism to the study.

There are no differences in the stock market's reaction of an announcement about downsizing when downsizing was in fashion and when it was not. The differences we have found between the two periods, which cannot be statistically ensured, are mostly depending on the players on the market past experiences. The way the players on the market perceive and interpret the announcements is of great importance. Due to the negative reaction in both of the periods, we argue that an announcement about downsizing usually will be perceived as somewhat negative. The players on the market are sceptical to downsizing and do not see downsizing as a "tool" to increase the efficiency of the company.

But why do the players on the market perceive the announcements as somewhat negative instead of somewhat positive? There are several problems that can occur when using downsizing. One of the problems is that downsizing is commonly used in negative situations as today's financial crisis for example. It is quite obvious that an announcement in a downturn economy will be perceived as a "last resort". The players on the markets' past experience and trust to the management of the company who are downsizing are of great importance due to the several problems that can occur. When downsizing is mismanaged the negative effects will be higher than the positive effects if it was managed correctly. And if the trust and the experience in the management of the company are low, then the players on the market do not believe that the management can handle the downsizing correctly which leads to a decrease in the stock price. The survivor syndrome could be an explanation to the less negative reaction when downsizing was in fashion. We argue that the players on the market were not aware of this problem when downsizing was in fashion. The reason for this argument is that the discovery of the survivor syndrome was delayed to some years behind the years of fashion and was not discussed in the early 1990s.

Proposal to further research

- The same research as our but using other time periods where the reaction was investigated. This way the research could show a nuanced view of how the reaction has changed over time.
- Compare the reaction of downsizing in Scandinavia.
- Compare two countries with two opposite union-cultures.
- Do the same study as our using different calculations- models.
- Investigate how the stock market react when downsizing is done due to findings of more efficient ways to produce.

Criticism to the study

We have not taken into account any other factors that could have influenced the stock market's reaction during the various time periods. The most important factors to mention are those who impact the different costs of employees. We have not taken other factors that influence the stock price during the event window in consideration. This investigation has not taken the reasons behind the downsizing into consideration, which could affect the results in different ways. We have investigated all of the companies that have made an announcement during the time periods, but still the observations are quite small. If there had been more observations the result may have been fairer and statistically ensured. The normal and abnormal return has been calculated by using the market model. The reason for this is that previous researches have used this model and that it is commonly recommended to use. Finally we are aware that the data has been processed by ourselves and that increases the probability of personal mistakes. As our data has been calculated many times we are not 100 percent certain that every data point is correct. If we have had a larger statistical knowledge, the result could perhaps been ensured statistically.

CHAPTER 8

REFERENCES

Abrahamson, E. & Eisenman, M. (2008); *"Employee-management Techniques: Transient Fads or Trending Fashions?",* Administrative Science Quarterly, 53(4):719-744

Affärsvärlden

http://bors.affarsvarlden.se/afvbors.sv/site/index/index_info.page?magic=(cc%20(info%20(ta b%20afv))), 2009-05-14 16:45

Alvesson, M. & Sveningsson, S. (2008); Changing Organizational Culture: cultural change work in progress, London: Routledge

Andersen, I. (1998); Den uppenbara verkligheten: val av samhällsvetenskaplig metod, Lund: Studentliteratur

Baily, M. & Bartelsman, E. & Haltiwanger, J. (1996); *"Downsizing and Productivity Growth: Myth or Reality?",* Small Business Economics, 8(4):259-278

Ballester, M. & Livnat, J. & Sinha, N. (1999)*;"Corporate Reorganizations: Changes in the Intensity of Labor and capital Expenditures"*, Journal of Business Finance & Accounting, 26(9-10):1205-1238

Brennan J. M., Thakor V. A. (1990)*;"Shareholder Preferences and Dividend Policy",* The Journal of Finance, 45(4):993-1018

Brooks, C. (2006); Introductory econometrics for finance, Cambridge: University Press

Brown, S. & Warner, J. (1980); *"Measuring security price performance",* Journal of Financial Economics, 8(3):205-258

Bryman, A. & Bell, E. (2005); Företagsekonomiska forskningsmetoder, Malmö: Liber Ekonomi

Cameron, K. (1994); *"Strategies for successful organizational downsizing"*, Human Resource Management, 33(2):189-211

Chalos, P. & Chen, C. (2002); *"Employee Downsizing Strategies: Market Reaction and Post Announcement Financial Performance",* Journal of Business Finance & Accounting. 29(5-6):847-870

Dawson, P. (2002); Understanding Organizational Change: the contemporary experience of people at work, London: SAGE

Doherty, N. & Horsted, J. (1995); *"Helping survivors stay on board",* People Management, 1(1):26-30

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

Electronic Library Information Navigator (ELIN@Lund)

http://elin.lub.lu.se/elin?lang=se, 2009-05-20 13:50

Eriksson, L. & Wiedersheim-Paul F. (2006); Att utreda, forska och rapportera, Malmö: Liber

Fama, E. (1970); *"Efficient Capital Markets: A Review of Theory and Empirical Work"*, The Journal of Finance, 25(2):383-417

Farber, H. & Hallock, K. (2009); *"The Changing relationship between job loss announcements and stock prices: 1970-1999"*, Labour Economics, 16(1):1-11

faqs.org:

http://www.faqs.org/abstracts/Business-general/Philips-to-eliminate-35000-to-45000-jobs-by-

end-of-91-disclosure-follows-cuts-set-in-July-payouts-ha.html, 2009-05-03 12:15

Gandolfi, F. (2008) *"Reflecting on downsizing: what have managers learned?",* S.A.M. Advanced Management Journal, 73(2):46-55

Gunderson, M. Verma, A. Verma, S. (1997) *"Impact or layoff announcements on the market value of the firm"*, Relations Industrielles, 52(2):364-381.

Hansson & Högfeldt (1988); *"Finansiell ekonomi: Tre grundläggande principer"*, Ekonomisk debatt 8(-):635-647

Haugen, R. (2001); Modern investment theory, Upper Saddle River: Prentice Hall

Holme I. & Solvang B. (1997); Forskningsmetodik, Lund: Studentlitteratur

Ikenberry D., Lakonishok J., Vermaelen T.(1995); *"Market underreaction to open market share repurchases",* Journal of Financial Economics, 39(-):181-208

Karsen, L. & Keulen, S. & Kroeze, R. & Peters, R. (2009) *"Leadership style and entrepreneurial change. The Centurion operation at Philips Electronics"*, Journal of Organizational Change Management, 22(1):73-91

Körner, S. & Wahlgren, L. (2006); Statistisk dataanalys, Lund: Studentlitteratur

Lee, P. (1997) *"A Comparative Analysis of Layoff Announcements and Stock Price Reactions in the United States and Japan",* Strategic Management Journal, 18(11):879-894

Levitt, K. & Wilson, T. & Gilligan, E. (2008); *"Corporate Downsizing: An Examination of the Survivors",* Journal of Global Business Issues, 2(2):13-21

MacKinlay A. (1997); *"Event Studies in Economics and Finance",* Journal of Economic Literature, 35(1):13-40

Macky, K. (2004); *"Organizational downsizing and redundancies: The New Zealand workers' experience"*, New Zealand journal of employment relations, 29(1):63-87

Ross, S. & Westerfield, R. & Jaffe, J. (1999)*; Corporate Finance*, Boston: McGraw-Hill

Sloan, A. & Underwood, A. (1996); *"The Hit Men",* Newsweek, 127(9):44-49

Spence M. (1973); *"Job Market Signaling",* The Quarterly Journal of Economics, 87(3):355-374

Spence M. (1974); *"Competitive and Optimal Responses to Signals: An Analysis of Efficiency and Distribution",* Journal of Economic Theory, 7(-):296-332

Strong, N. (1992); *"Modelling abnormal returns: a review article",* Journal of Business Finance & Accounting, 19(4): 533-553

Wilkingson, A. (2005) *"Downsizing, rightsizing or dumbsizing? Quality, human resourecs and the management of sustainability",* Total Quality Management & Business Excellence, 16(8-9):1079-1088

William H. W. (2004); *"A Beginner´s Guide To Event Studies",* Journal of Insurance Regulation, 22(4):61-70

Yahoo Finance:

http://finance.yahoo.com/, 2009-05-17 09:30

Databases:

Electronic Library Information Navigator (ELIN@Lund)

Datastream Advance 4.0

Affärsdata

Yahoo Finance

ATTACHMENTS

Appendix 1

All announcements 1990-92

Company	Date	Amount
Electrolux	900214	148
Ericsson	900307	135
SSAB	900510	300
Electrolux	901116	238
Volvo	910117	1550
SKF	910118	85
Trelleborg	910121	60
Ericsson	910206	800
Volvo	910301	20
SKF	910621	22
Trelleborg	910805	190
Ericsson	910822	230
Volvo	910828	1000
Ericsson	910911	100
Skanska	910913	64
Volvo	911002	90
Volvo	911009	350
Ericsson	911125	160
Volvo	920121	24
Ericsson	920206	1000
Skanska	920305	25
Volvo	920305	180
Skanska	920330	115
Volvo	920331	260
Sandvik	920415	23
Ericsson	920428	64
Rottneros	920506	45
volvo	920515	225
volvo	920520	100
SCA	920611	300
Electrolux	920904	24
SCA	920916	70
Stora	920923	90
volvo	921001	75
SKF	921001	35
volvo	921008	130
Volvo	921013	200
Volvo	921104	186
Ericsson	921110	350
sca	921112	150
Volvo	921130	240
SCA	921203	15
Volvo	921208	260

SKF	921217	2000

Excluded

Borås Wäfveri	*900830*	*170*
Swedish Match	*910206*	*30*
Boliden	*911018*	*34*
Husqvarna	*910821*	*80*
Husqvarna	*910814*	*75*
Kabe	*920316*	*49*
Höganäs	*920425*	*125*
ÅF	*921124*	*100*

Appendix 2

All announcements 2007-09

Company	Date	Amount
AssaAbloy	20070208	100
HL Display	20070413	40
Trelleborg	20070828	110
Midelfart Sonesson	20070823	28
Swedol	20070917	30
SAS	20071115	230
NCC	20071122	200
Volvo	20071207	650
Borås Wäfveri	20071212	900
Volvo	20080625	1200
Autoliv	20080821	60
Volvo	20080930	1400
Volvo	20081008	3300
Q-Med	20081009	50
Volvo	20081016	90
Nolato	20081017	23
Volvo	20081029	600
Haldex	20081110	105
NCC	20081110	70
Volvo	20081111	900
Billerud	20081113	125
Volvo	20081117	300
Atlac Copco	20081119	215
Sandvik	20081120	1040
Seco Tools	20081120	250
Peab	20081121	195
Ericsson	20081121	250
Skanska	20081125	3400
Ledstiernan	20081128	25
Haldex	20081203	59
Atlas Copco	20081208	370
SSAB	20081208	1300
SAS	20081209	85
Peab	20081212	55
Alfa Laval	20090113	1000
Volvo	20090113	960
Rottneror	20090114	10
Electrolux	20090115	102
Volvo	20090120	250
Haldex	20090127	75
Atlas Copco	20090128	44
Ericsson	20090129	1000
Volvo	20090202	175
Note	20090210	60
Atlas Copco	20090212	80
ÅF	20090217	80
Seco tools	20090218	550
Enea	20090225	16

Husqvarna	20090226	144
Sandvid	20090303	53
Electrolux	20090320	17
SCA	20090326	17
Sandvik	20090331	490
Sandvik	20090416	50
Volvo	20090422	1543
Transatlantic	20090427	60
HMS Networks	20090428	16

Excluded

Autoliv	*20070111*	*99*
Partnertech	*20070207*	*100*
Ballingslöv	*20081008*	*25*
SAS	*20081014*	*50*
Cision	*20081022*	*50*
Astra Zeneca	20081120	1400
SKF	*20081210*	*2500*
Volvo	*20090205*	*75*
Prevas	*20090429*	*25*

Appendix 3

Summary of 1990-1992

t= -2	1990-92					95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
44	0,005583	0,022687	0,003420	1,632446	0,110062	-0,001120	0,012286

t= -1	1990-92					95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
44	-0,006764	0,023541	0,003549	-1,906030	0,063505	-0,013720	0,000192

t= 0	1990-92					95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
44	-0,002414	0,018802	0,002835	-0,851490	0,399324	-0,007970	0,003143

t= +1	1990-92					95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
44	-0,000501	0,020264	0,003055	-0,164140	0,870412	-0,006489	0,005486

t= +2	1990-92					95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
44	-0,000456	0,017322	0,002611	-0,174550	0,862268	-0,005573	0,004662

CAR	1990-92					95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
44	-0,004552	0,049952	0,002611	-0,604460	0,548642	-0,009669	0,000566

Appendix 4

Summary of 2007-2009

t= -2			**2007-2009**			95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
57	-0,000889	0,024239	0,003210	-0,276887	0,782905	-0,007182	0,005404

t= -1			**2007-2009**			95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
57	-0,003637	0,023496	0,003112	-1,168542	0,247628	-0,009737	0,002463

t= 0			**2007-2009**			95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
57	-0,006144	0,029439	0,003899	-1,575762	0,120816	-0,013787	0,001498

t= +1			**2007-2009**			95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
57	-0,004518	0,021815	0,002890	-1,563437	0,123686	-0,010181	0,001146

t= +2			**2007-2009**			95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
57	0,001063	0,031676	0,004196	0,253382	0,800917	-0,007160	0,009286

CAR			**2007-2009**			95% confidence	interval
Observations	Mean Value	Standard deviation	Standard error	t-value	p-value	lowest	highest
57	-1,412458	0,070152	0,009292	-1,520113	0,134011	-1,430670	-1,394246