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VID GÖTEBORGS UNIVERSITET

Department of Business Administration

Reasons behind negative short-term fluctuations in stock price

A quantitative analysis of the health care industry

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Stella-Maria Boman 820401

Mikael Frödell 810220

Summary

During the last years media has put a lot of focus on what is happening within companies. Stories of company boards lifting severance payments and pension agreements without the shareholders admittance and boards using company resources for their own interest have become more common. Meanwhile shareholders complain for companies' underperformance and in some cases change the members of the boards and the CEO in order to generate more revenues in the future. On the other hand some companies have been in the focus of the media because of the financial downfalls and business setbacks which have resulted in downsizing and movement of facilities to countries with low wages. But in what extent is this affecting shareholders? This study investigates the underlying reasons for why share prices fall for short periods of time and hereby what activities within or outside the companies that shareholders react to. As the analysis object for the study the companies within the Health Care index at Stockholm Stock Exchange have been chosen since the industry's growth rate surpass all other industries in Sweden.

To analyze the occasions or "dips" when a certain company's stock fall influences of an investment analysis technique called Bollinger Bands has been used. The changes in stock price have also been related to the changes in the index for the industry, SX35 Health Care, in order to consider effect on the market as a whole. This since shareholders probably will get as unsatisfied when their stock fall as when the rest of the index raises except the stock in which they are long.

Investors behavior can in some cases be traced to the published news about a company's business and financial results. In other cases a reaction from the investors by causing the share price to fall can be caused by dark prognoses for a company or by investors' own gut feeling. Not all of the actions of the investors on the market can be explained in a rational manner, which makes insecurity on the market to increase. Depending on the media flow during a specific period of time it can be said that reasons behind market reactions can be related to investors' rational and irrational behavior.

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1. A world of board corruption and financial setbacks

People want to beat the market and do “smart” investments to secure future revenues. Since not all shareholders have inside information - and even if they did it would not make any difference according to strong form market efficiency – shareholders rely on other means of information.

All investors try to beat the market and they do this by both sophisticated and less sophisticated methods. Sophisticated methods could be analyzing past data – if now there is a correlation between past and future performance. Another way to predict the future losses could be by keeping a close look upon the companies and analyzing their course of action and businesses. Since shareholders are not a part of the company in an explicit manner they have to rely on public information. Thus information, either objective or subjective, will be the way for a shareholder to discover the truth and anticipate a future behavior from the company. In a way shareholders will rely on published information to decide whether or not to make an investment.

During the last decade media has put an increased focus on boards and management of Swedish and global companies. The reasons for the increased pressure is what is happening within the companies that is coming back to the shareholders, stakeholders and clients as a breeze of despair and lost money.

One issue at hand is how the board members in recent events done everything to get as much money as possible out of the company, in some cases also behind the back of the other members of the board. Severance payments and incentive schemes have become a way for company leaders to increase their personal wealth at the expense of other shareholders and stakeholders and also at the expense of the company in terms of bad publicity and bad reputation.

Another issue that media has highlighted is the economic downfalls companies suffer where employees are made redundant and the jobs are moved to low-income countries in order to set the companies’ finance on the right side. Many of these financial downfalls result in the replacement of the CEO and changed ways of working in the management. These economic downfalls may also be the result of a changing environment and alternations in partnerships, contracts or financial agreements that in some cases not even are in the hands of the company to affect. The future do not always turn out the way that was intended in the

strategic plan for the company and slow reactions in these cases can be devastating for the companies.

In addition to happenings within the company boundaries other aspects of a more external character may also be seen in media. For instance newspapers, institutions and internet sites set recommendations to buy or sell specific shares in order to guide their readers to sound investments. Furthermore extra attention in media or if the stock is publicly discussed by analysts may also increase the alertness of investors. Could this kind of information create herd instincts among investors and drive them to decisions they normally would not make or is this type of news of inferior importance?

Another source of information is from the companies themselves through reports and issuing of new shares. By doing so the companies send signals to the market as how business are proceeding and flag if there are problems with revenues and liquidity. However, in most occasions the CEO of the company will try to smooth the impact that the negative news can have on the market by promising future larger revenues. The question here is, do shareholders believe or for that matter care if the decrease is momentary? Another question that can arise is; when companies underperform according to whom have they underperformed? What are the criteria for deciding that even if a company does well that they have indeed underperformed?

According to what have been discussed the reasons for why share price fluctuate are many. Some of the more obvious reasons above are the business setbacks such as board scandals and bad investment decisions along with the release of interim reports and issuing of new shares. At a first glimpse the effect of these reasons is quite easy to understand and is a direct effect of what have happened inside the company and thereby affected the company value and also the share price. An effect that is more of the external kind is recommendations release in major venues. This news is other peoples' opinion on what the company has performed or will perform and is thereby not as based on facts but more on analyses and hunches. In tandem with this share price sometimes fluctuate substantially without any known reason. Are the investors in these cases just guessing or are they affected by other peoples' moves and initiatives?

1.1 Purpose

The list of happenings concerning listed companies can be made quite long and the reasons for all the media coverage differs from case to case but with some similarities shining through the differences. In order to come a bit closer to the underlying reasons why stock price fall and thereby what happenings shareholders react to the purpose of the study is to *investigate the reasons why negative short-term fluctuations in stock price occur.*

2. Methodology

In this chapter the methodology and thus the characteristics of and way that this study has been conducted will be described. Because of the study's quantitative nature the methodology and empirical findings are the fundamentals of this thesis. In this chapter the reader will be able to follow the process from choosing an industry index to the issues that derive from analyzing companies that belong to the index.

The methodology of this study is based in a quantitative approach identifying changes in stock prices related to changes in the index for the studied industry. Reasons for these identified changes, and especially the ones essentially decreasing the value for the shareholders, are then traced in order to find why these drastic "dips" occur. Hereby the methodology can be described as a process of three steps where the third step is *Analysis of results* preceded by the two information gathering steps *Identification of dips* and *Tracking down reasons*, which in detail are described below.

Prior to the identification of dips an industry to study has to be defined. As the authors both are active in Sweden the Stockholm Stock Exchange has been the target for analysis. Stockholm Stock Exchange is owned by OMX who holds approximately 80 percent of the Nordic and Baltic securities markets. Stockholm Stock Exchange is divided in ten sectors based on the Global Industry Classification Standard, GICS, developed by Morgan Stanley Capital International Inc. and these sectors represent 64 industries. For each of the sectors OMX present a daily index, based on the companies included in the sector, which has the base date 31st of December 1995 and the base value is 100. The indices include companies from the A- and O-list (OMX – Stockholmsbörsen, 2006).

This study is focused on the health care sector which as of April 3rd 2006 included 33 stocks representing companies from health care Equipment & Services and Pharmaceuticals & Biotechnology with a width from small project-based biotech companies to world leading suppliers of health care equipment (GICS for the Stockholmsbörsen Universe of Securities, 2006). The reason why health care is chosen as the sector for analysis is the outstanding growth rate in the industry relative to other industries in Sweden during the last years (SwedenBio, 2006).

As mentioned the health care sector include 33 stocks. The symbol for the index is SX35 and the included companies and their respective symbol are as follows in table 1 below.

Table 1. Included stocks in SX35 Health Care

<i>Share name</i>	<i>Symbol</i>
Biacore International	BCOR
Biolin	BLIN
Elekta B	EKTA B
Getinge B	GETI B
Human Care HC	HUMA
Ortivus A	ORTI A
Ortivus B	ORTI B
SECTRA B	SECT B
Nobel Biocare Holding	NOBE
Feelgood Svenska	FEEL
Gambro A	GAMB A
Gambro B	GAMB B
RaySearch Laboratories AB	RAY B
Capio	CAP
MEDICOVER Holding SDB	MCOV SDB
Active Biotech	ACTI
Artimplant B	ARTI B
Biogaia B	BIOG B
BioInvent International	BINV
BioPhausia	BIOP
Karo Bio	KARO
Medivir B	MVIR B
Oxigene	OXGN
Probi AB	PROB
Biotage ser. A	BIOT A
Q-Med	QMED
Tripep	TPEP
Vitrolife	VITR
EpiCept Corporation	EPCT
AstraZeneca	AZN
Diamyd Medical B	DIAM B
Meda A	MEDA A
Orexo	ORX

2.1 Identification of dips

The inspiration for the analysis model used in this thesis has come from the analysis technique called “Bollinger Bands”. The technique was created by John Bollinger in the early 1980s and is mainly based on the usage of moving average and standard deviations when looking at fluctuations in stock price (BollingerBands, 2006). The technique uses a simple moving average as the middle Bollinger Band which is flanked by an upper and a lower Bollinger Band located two standard deviations over and under the moving average. The moving average is calculated from a 20-day period of the stock price which is a value that can be modified to better fill the purpose of the analysis. According to Stridsman (1997) Bollinger Bands is a really good tool when looking at in which price range a stock should spend most of the time. He further claims that despite its simplicity it is one of the most versatile indicators around.

In this thesis weekly prices for the stocks and the index are used and the period for analysis is three years starting 2003-01-01 and ending 2005-12-31. The share quotations are gathered from Yahoo! Finance in May 2006. The weekly data may result in that some dips are not seen, for instance if a stock falls one day and fully recovers the day after. On the other hand the full effect on the stock price is seen when for instance a stock fall a couple of days in a row or if a fall is followed by a slight recover.

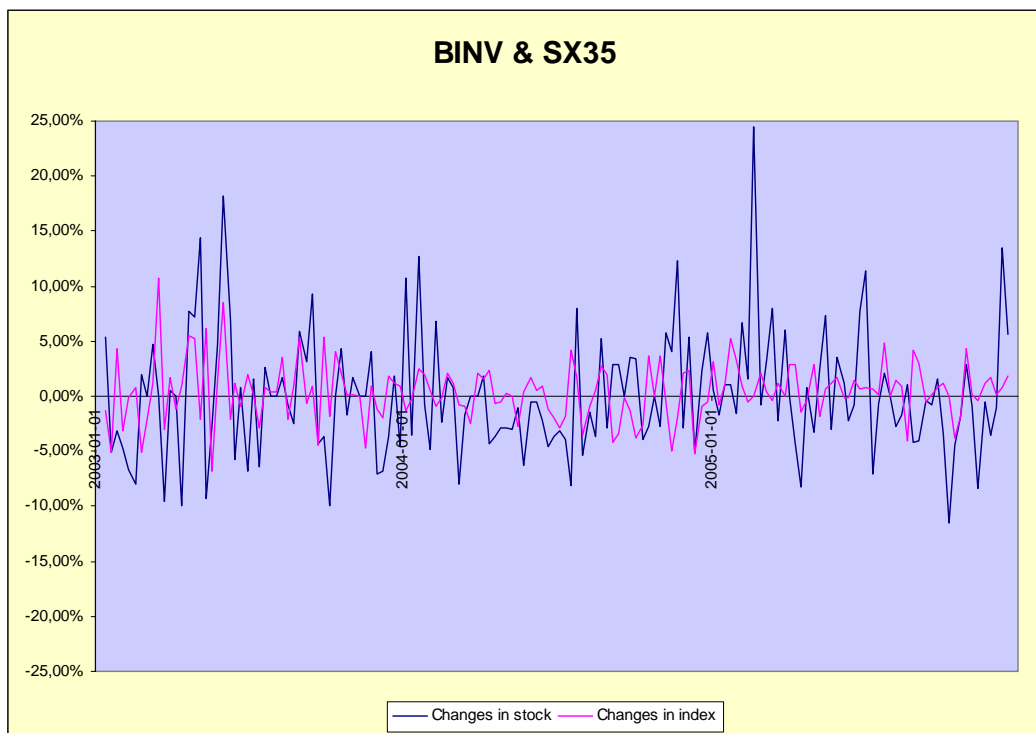


Figure 1. Changes in BioInvent and SX35

To be able to see the fluctuations in the stock price and how these are related to the index of the sector changes in stock price are studied instead of actual prices as is used in the theory of Bollinger Bands. The weekly changes in the stock price and the weekly changes in the index, figure 1, are compared and the difference between them are then studied, as illustrated in figure 2 below, and thereby the market effect is taken into consideration. This is based on the notion that the shareholders probably will get as disappointed when the stock falls as when the index raises but not the stock in which they are long (Bernhardsson, 1996).

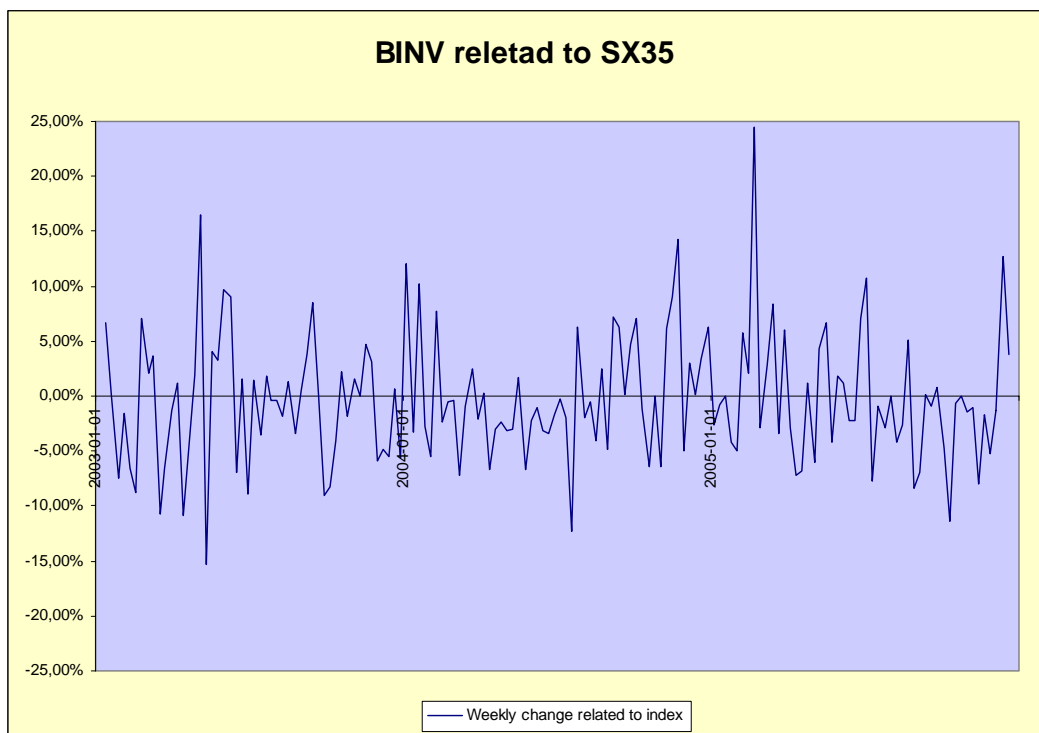


Figure 2. Changes in BioInvent related to SX35

The moving average in the study is based on a nine-week series and is calculated according to Körner and Wahlgren (2002) where the moving average for a specific week is the sum of the change the specific week, the changes the four preceding weeks and the changes the four previous weeks divided by nine or

$$MA_n = \frac{\sum_{i=n-4}^{n+4} C_i}{9}$$

where C is the relative weekly change between the stock and the index. The standard deviation is then calculated for the relative changes in the specific stock

for the same period and an example of the result is shown in figure 3 below where BioInvent again is the example.

As can be seen in the figure 3 the negative changes in relative stock price at some points cross the lower Bollinger Band of two standard deviations and this is what in this study is defined as a dip. Tests were conducted varying the amount of standard deviations used for the lower Bollinger Band and two turned out to be most appropriate in order to identify the essential losses in value. When using only one standard deviation the number of dips identified for the 29 companies (see the following section for the selection of companies) during the three year period amounted to 587. That would in other words imply that each company dipped 20 times in three years and almost 7 times a year which seems too many times to motivate the expression dip, these are more like normal fluctuations. When using two standard deviations the total number of dips decreased to 83 which equal approximately one dip per company and year which is a more narrative number if unusually value dips are to be identified.

All calculations are done in Excel and the stock prices used are the adjusted closing prices.

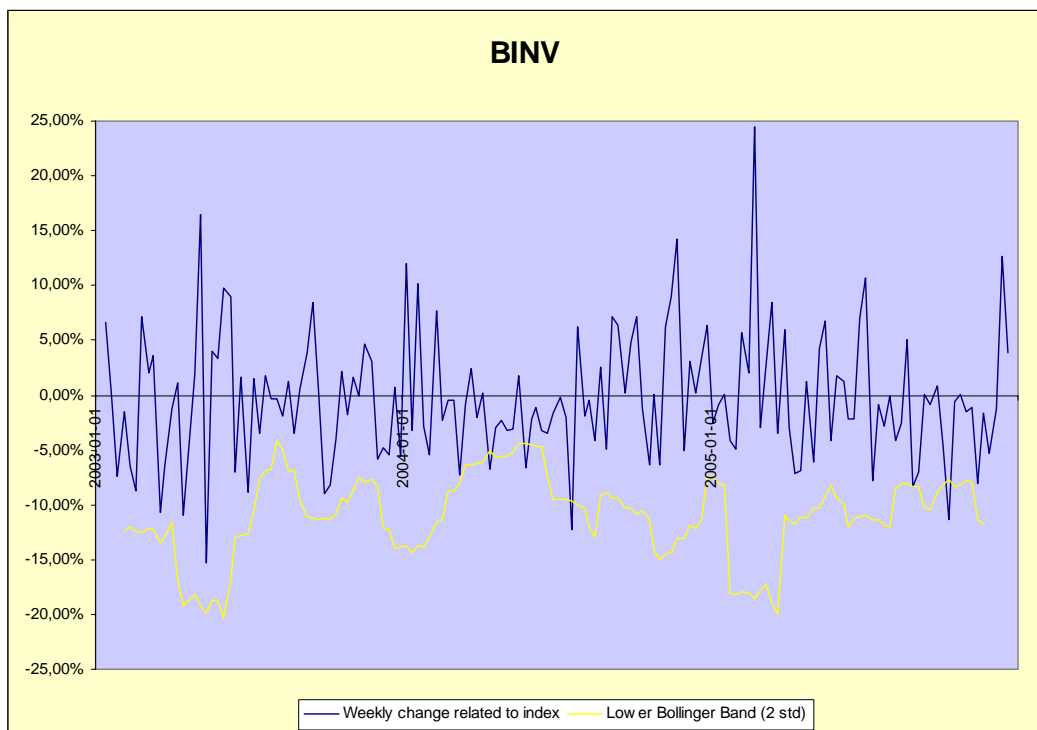


Figure 3. The lower Bollinger Band

Errors and modifications of data

The data downloaded from Yahoo! Finance was not perfect for the study so some modifications had to be done. One company's data were not even possible to use in the analysis, this was the data for ORTI A. On the other hand Ortivus together with Gambro were noted two times on the list, one for the A share and one for the B share, so because of the incomplete data in ORTI A both ORTI A and GAMB A were excluded from the study. It should also be mentioned that the reason for the incomplete data in ORTI A was a very small turnover in the stock and thereby very few trades.

The two other stocks excluded from the study are EpiCept Corporation and Orexo. The reason for the exclusion of these companies is that the companies are newly introduced on Stockholm Stock Exchange and the data is not sufficient for analysis. Three additional companies where the data is not covering the whole three year time frame are Active Biotech, BioPhausia and Probi AB. These companies are although included in the study since the data amount is enough to analyze with the chosen method.

Some of the data series were missing quotations in certain weeks and to overcome these blanks interpolation has been used. Furthermore, because all quotations are weekly the date for the stock price and the date for the index may differ with one or two days but this is disregarded in the study.

2.2 Tracking down reasons

After the dips for the companies included in the health care index where identified the underlying reasons for the dips where to be found. In order to do this, searches related to each dip were conducted in Mediarkivet. Mediarkivet is a database consisting of news and press releases from a great number of sources. The sources most relevant for this study that were searched through Mediarkivet are Affärsvärlden, Dagens Industri, Privata Affärer, Ticker and Waymaker.

As previously mentioned in the introduction there are many reasons that can be seen as background to sudden fluctuations in share prices. When looking upon the different companies within the health care industry and their dips, it is apparent that there are some factors that are common for all the cases seen from a

media flow perspective. By studying the different companies and the reasons for the dips, mutual clusters were identified and categorized depending on the nature of the issue behind the dip. Often have companies been subjected to the same type of media stream before a dip, which concludes in people being more or less sensitive to some types of news. The arguments for choosing the five categories later presented are derived mainly from an empirical study performed in the frameworks of this thesis. When studying the media flow just before the dips, it is possible to categorize this news about the company dependent on their nature.

The reasons behind the dips were divided into five different categories; Business Setbacks, Reports, Share Issues, Recommendations and Unknown. Business Setbacks include news where the company suffered from incidents such as negative results of research, financial downfalls and management scandals. Reports are the category related to the release of annual and interim reports showing results less impressive than expected by the market. The third category, Share issues, concerns company issuing new shares, through splits, share issues and bonus issues. Recommendations is related to recommendations in major news papers and communities to sell or not to buy the specific share. Lastly, in the category Unknown the reason for the fluctuation is unknown because no relevant news concerning the company was found during the specific period of time.

The reasons for the dips were in most cases obvious when looking at the search results but in some cases difficulties occurred. Two kinds of problems occurred where the first one was that no news concerning the company around the time for the dip were to be found and the second was that multiple news and possible reasons were published. In the first case not very much could be done whilst in the second case the holistic picture of the news stream was captured.

In this study companies in the health care industry and the probable reasons for their dips were examined. The reasons for these dips were believed to be found by studying the media flow connected to the period of the dip. By analyzing the media flow and nature of the news for these firms it was apparent that there was a specific pattern when it came to the type of the news; this is how the five categories were constructed.

3. Theoretical framework

In this chapter the theoretical framework of the thesis will be set. Since the study is of a quantitative nature the theory is adapted to such a study's needs. It is a chapter that will introduce the reader with some of the fundamental issues that concern the world of finance and investment; namely market efficiency, market psychology and shareholder theory.

According to Bernhardsson (1996) there are two different ways of seeing the financial market; there are those who believe that the market always work flawlessly and those who believe the opposite, that the market is mismanaged in all situations and thus there should be a supranational controlling entity. The truth about the financial market is probably somewhere in the middle with a tendency towards being flawless. However, there is a need for support and help in order for the market to function in a rational way. As Burton Malkiel (1996) states in "A Random Walk Down Wall Street" the market can be in short periods of time irrational but in the long run this too will be corrected:

"The market eventually corrects any irrationality – albeit in its own slow, inexorable fashion. Markets can get irrationally optimistic, and often they attract unwary investors. But eventually, true value is recognized by the market, and this is the main lesson investors must heed."

3.1 Market efficiency

In basic financial theory one of the assumptions made is that the market is efficient. In an efficient market the market price is the best estimate of value and reflects all available information on the market (Brealey and Mayers, 2000). It is thus believed that there are no actors that are able to beat the market index or a random portfolio in a substantial and persistent way since even insider information is useless. This is the foundation of the so called *strong form* of Efficient Market Theory (EMT) that Fama defined in 1970.

Eugene Fama in 1970 suggested in his article "Efficient Capital Market: A review of theory and empirical work" that market efficiency might have a *semi-strong form* which means that at any given time, prices fully reflect all available information on a particular stock and market. If this were to be true that all share

prices reflect all information available on the market, no investor would be able to receive a higher return on investment by predicting future share prices (Fama, 1970). This hypothesis does not discourage investors on the market to try not to only make a profitable return but also to outperform or beat the market, since they believe that market efficiency has a *week form*. In other words traders on the market believe that all historical data about the share prices enables investors to receive a higher return on their investments if they are able to study the trends in a correct way (Brealey and Mayers, 2000).

It is very important to remember that efficient markets are not the same as saying that markets are perfect. Knowing that there are times when the market does not reflect the true value of the company and the information on the market will theoretically create openings for investors to receive a higher return, but this is not the same as saying that they will be able to do so (Shefrin, 2000).

According to Daniel and Titman (1999) the market has an “adaptive efficiency” meaning that anomalies in pricing may be observed in historical data and if investors are to learn from past price history these anomalies will not exist for a long period of time. If rational investors believe in market efficiency they will not try to exploit any value maximizing opportunities on the market causing the pricing anomaly to persist. However, if these investors underestimate the number and aggressiveness of other rational investors on the market, they will together cause any abnormality on the market to eventually reverse.

Investors on the market placing their money on the market perceive the market as inefficient in the short run, or have a week form efficiency which means that markets will make mistakes in assessing value because of the impossibility of predicting market prices. These investors will make assumptions about how and when these inefficiencies will get corrected - because the market will eventually find its balance (Damodaran, 2002), as implied by Daniel and Titman (1999) in the previous paragraph.

The existence of arbitrage and the “Bigger Fool Theory” surely shows that there are opportunities for investors to receive a higher return in an efficient market. Even in an efficient market do market prices exist that are over and under valued at times and thus arbitrage exists, but even if this is not the case it is still all about supply and demand. As the “Bigger Fool Theory” implies: if there are people (fools) on the market that are willing to buy stock for a higher price to sell it to

another (even bigger fool) for an even higher price, then it really does not matter what the real market price should be (Arbel and Kaff, 1989)

In a sense the notion of efficient markets is rejected for an alternative theory where asset prices are influenced by investors' overconfidence, called adaptive efficiency (Daniel and Titman, 1999) for some authors of semi-strong efficiency according to others (Fama, 1970). This overconfidence has its advantages and disadvantages since it implies that investors though their limited information process ability they will act according to their own rationality creating opportunities for arbitrage on the market. (Daniel and Titman, 1999). But are investors on the market always rational?

3.2 Market psychology

Regardless to how the market is described, efficient or not, people will trade on the market. But what is it that drives them if not the hope of generating more revenues? In classical economy theory people are concerned as fully rational and all actors maximize their value (Bernhardsson, 1996). According to Bernhardsson (1996) financial market is not only a place for rational decision-makers. In the short run the market can be described as a place where investors will act according to their feelings of greed and fear. Nevertheless something that can be classified as irrational for the market can be rational for an individual. Furthermore Michaud (cited in Connelly, 1997) claim that irrational behavior may just be misunderstood behavior and that the reason for why it is thought to be irrational is that a perspective explaining the rationality in the decision is not yet understood.

But are investors rational? Share analysts and stock brokers are driven of physiological factors like any other human being. The rationalists are those who not always make the best decisions but will always act in accordance to the available information. In the future the rationalist will learn from his/her mistake and correct his/her future actions accordingly (Damodaran, 2002). Tversky (1995) claim that there are three perspectives that affect investors to irrational decisions; risk attitude, mental accounting and overconfidence. The risk attitude implies that investors are loss avert and thereby more sensitive to lost wealth than gained wealth. Mental accounting implies that gains and losses are seen with two different perspectives and thereby mentally accounted for in different ways.

Lastly, overconfidence in skills and past outcomes may result in that investors make sub-optimized decisions. Tversky (1995) further states that the irrational effects of these factors are overreaction to price changes, confident extrapolation of past growth into the future, lack of attention to price and focus on popular stock.

The perspectives introduced by Tversky (1995) have also been discussed by other researchers. According to Daniel and Titman (1999) an investor is overconfident making analysis of the market and creating strategies based on “hunches” and “feelings”, which can be easily influenced by behavioral biases. Overconfidence is considered as one of the potential sources of error and bias in relation to intuition, where ease to recall, presumed associations, confirmation bias and hindsight bias are some other biases one has to be aware of when considering intuition (Sandler-Smith and Shefy, 2004).

Sandler-Smith and Shefy (2004) argue that although many institutions rely on the use of rational analysis for decision making, there is strong evidence pointing towards the use of intuition since much of cognition occurs automatically and in a sense outside of consciousness and leaning towards intuition. Rather than concerning rationality and intuition as two opposites they are better understood as two parallel systems of knowing.

What Sandler-Smith and Shefy, 2004 mean is that for example executives can by the use of intuition and acknowledgment of its limitations make more effective and intelligent decisions that will end up in value maximization of the firm. While intuition is a combination of expertise and feeling in a level below consciousness is a necessary complement to rational thinking, since there is always an uncertainty in rational models and decision making being absolute. Through experience and practice one is able to combine these two ways of knowledge to his/her advantage (Sandler-Smith and Shefy, 2004).

Additional factors that are believed to influence investors' behavior on the market and to be the reasons behind some of their reactions are share recommendations, herd instincts and seasonal trends. Paul Macrae Montgomery is an American stock analyzer that developed a system called the “Time/Newsweek-index”. According to this system an investor should do the opposite to what is being recommended in the newspapers. What this stock analyzer meant is that if the non-financial newspapers wrote about a trend in trading this trend would already have reached its peak and passed.

Bernhardsson (1996) presents many examples from big newspapers as “Veckans Affärer”, “Newsweek” and “Dagens Nyheter” in his book that support the earlier mentioned system of the “Time/Newsweek-index”. However, there seems to be many traders on the market that still will rely on what the media will say.

Recent findings support the argument that there is a strong link between individual trader’s decisions and a strong herd instinct. When the share prices are pointing up there is a kind of psychological dynamics that is created where all investors tend to react and think the same way as the majority on the market. When companies shares increase rapidly in value a mass psychosis can be created on the market where all investors want to buy this company’s shares. Media and analytics will soon also follow the existing trend and will easier recommend investors to buy shares in companies where the index has increased in a rapid manner than it is for them to encourage investors to sell (Alfredsson, 2000).

The phenomenon of herd instinct is also analyzed by Scharfstein and Stein (2001). It seems as though under certain circumstances managers will mimic the investments decisions of other investors and ignore substantive private information, because of the fear of being perceived as a bad investor for not following the majority. Why investors can engage to such social inefficient behavior can be a product of the correlated prediction errors leading to “sharing-the-blame” mentality that drive managers to herd. Other reasons behind herd behavior can be compensation based on absolute rather than relative ability assessment (Scharfstein and Stein, 2001).

According to Alfredsson (2000) though conservative analysts do not believe that it is possible for market psychology to affect the market, many actors on the market will indeed be affected by seasonal trends. There are historical evidence were the Stockholm’s Stock Exchange have performed better in January compared to the rest of the year and that October is a month were many crashes have occurred. If it is only a matter of coincidence or not is debatable, the certain thing is that many traders influenced by this notion will act accordingly.

Nancy Opiela (2005) wrote an article on financial planners and how they help their customers to invest rationally despite irrational behavior. In this article one can find some reasons for the sometimes irrational behavior of investors on the market. Everyone is affected by emotions but according to planners in order to make a successful investment one has to limit their influence. Too much

information, optimism and overconfidence is some characteristics that investors are faced with. The media has a crucial role in investment were newspapers try to sell by appealing to the emotional side of the investors, which is considered wrong from a planner's perspective. Herd mentality discussed earlier is again considered in this article as being a product of problematic optimism in the field of behavioral finance.

The market is too complex to comprehend making many investors tempted to base investment decisions on isolated events rather than the whole picture. Since people are affected by emotions they are loss avert when making decisions with a false sense of security. That investors are short sighted is a notion widely spread and they prefer things being predictable and familiar and exhibit hindsight bias. According to this bias, events that happen should have been predictable and those that do not occur should have been classified as unlikely a long time ago. What financial planners try to archive is to help their customers make rational decisions despite irrational behaviors they are faced with every day (Opiela, 2005).

What one should never forget is that financial planners themselves are faced with emotions that they have to disregard in their decision making by means of structure and justification (Opiela, 2005). Everything they do follows a structure and everything has to be justified. There are many studies about structural factors that may or not affect the decisions of investors such as social factors, the internet, globalization and the increasing number of possible investments, but this will not be a subject of study in this thesis. What is however apparent is that there are many factors that can affect a person to be irrational although striving for a rational behavior.

3.3 Shareholder theory

Every company has different stakeholders that are interested in how the company is performing. The stakeholders of the company include not only the owners or the shareholders but also other parties such as society, customers, suppliers and employees. According to Hamberg (2004) these stakeholders can be divided into two groups depending on their influence on the decision-making process in the business. Management, employees and a greater part of the shareholders, have a large influence on the company and are therefore named

internal stakeholders. Whereas the external stakeholders are left out of the decision-making process but have some influence on the company through for example their ability to end their contractual relationship to the company because of inadequate organizational performance and behavior.

The value maximization of the company can be focused on different segments of these stakeholders and depending if a company have their stakeholders or just shareholders value maximization in mind when conducting business the terms "Stakeholders theory" or "Shareholder theory" are applied. According to Jensen (2005) stakeholder theory intend that the company and the managers' decisions should be taken with all stakeholders of the company in mind and these are all groups or individuals who substantially can affect the company.

The contractual stakeholders, who have a contractual relationship to the company, will be concerned if a company's revenues are lower than expected but in some cases stakeholders can be alerted both in cases of lower and higher performance to what is expected. Shareholders on the other hand invest money in the company and expect a positive return from investing their money (Hamberg, 2004). Their relationship to the company is called a residual relationship since the shareholders' return is what is left after stakeholders with a contractual relationship have received their earnings. Along with the theories on stakeholder consideration some pitfalls and complications arise. Jensen (2005) mention that there sometimes can be difficult for the companies to focus at multiple goals simultaneously and that the effect would be that the goals become shortchanged.

In this thesis the focus is aimed at fluctuations in stock price and hence the most important stakeholder for this thesis is the shareholders since it is them how determine whether to buy and sell stock or not and thereby affect the price of the share. Today professional investors own most of the shares in most companies and they also put a lot of pressure on the management of the companies to maximize shareholder wealth. But how is it possible to maximize shareholder value when the market is at times not that efficient and the investors on it irrational?

3.4 Theoretical sum-up

In the theoretical framework of this study the nature of the market and its investors was discussed from different perspectives and theories. A sum up of the theory used in this thesis would be that the market is weak form efficient and probable semi-strong form efficient as well. This means that in the market for short time periods there will exist under and overvalued shares and thus companies that will in the long run find their true value and restore the balance on the efficient market. By looking at the historical data of shares one could probably find a pattern of the share movement and be able to predict future development, however impossible this may sound. But this is not the whole truth.

Even if the market is efficient and there exists a balance on the market that is always eventually restored there will always be a certain uncertainty posed because of the irrational investors acting on the market. Irrationality can, according to Tversky (1995), be divided in three perspectives: risk attitude, mental accounting and overconfidence and with irrational effects such as overreaction to price changes, confident extrapolation of past growth into the future, lack of attention to price and focus on popular stock. The question if a decision is rational or irrational is not very easy though. Theorists claim that what is rational for one group of people may indeed be irrational for others. Along with it is claimed that an irrational decision might be rational, but from a perspective not yet explored. However, many individuals might act irrational even if they strive for rational decision making.

There are many theories on the market about how one should invest and what signals to look for in order to sell or buy shares. Many of these theories are indeed incoherent and can be confusing rather than helpful. If it was easy to predict the future development of the market there would not be so many different opinions on what to look for and how to react because there would be one ultimate truth.

Even if a perfect method for predicting the market does exist, it will work as long as the conditions on the market are perfect. Since people with irrational behavior dominate the market at times these eventual models have no power, because who can predict the irrational behavior of an individual? As the "Bigger fool's" theory implies as long as there are fools on the market wanting to pay more

money for a share than the market the trends are in a way altered and maybe not cohesive to the markets will. Other behaviors such as following gut feeling or herd instinct are two parameters that enhance the notion of people acting irrationally some times. These emotional parts of irrationality might be diminished by structure and justification. However, following instincts will in some cases lead to rational decisions if the art of gut feeling is well mastered.

In this climate of general uncertainty the only thing that is a fact is that companies in need of capital reach out for investors. This is how the shareholder theory became a fact. The shareholders through this theory became the most important "entity" for every firm and maximizing their value meant maximizing the company's overall value. The firms were never more worth than what the market thought them to be. As the years passed the shareholder theory became the stakeholder theory putting other groups' interests in the center of the company and it became more and more important to not only please and maximize the shareholders value but the value of all the stakeholders. Nevertheless the shareholders still remained one of the most important stakeholders.

4. Empirical results

In this chapter the empirical results of the study are presented. The chapter is divided in two divisions whereas the first one is a description of the Health Care industry as a whole and the second one is a short description of each company that is part of the industry. The purpose of the study has been to "Investigate the reasons why negative short-term fluctuations in stock price occur" and in this chapter the reasons for the dips will be presented for each company separately.

FDA (Food and Drug Administration) is the US Department of Health and Human Services agency that is responsible for ensuring the safety and effectiveness of all drugs, biologics, vaccines and medical devices, including those used in the diagnosis, treatment and prevention of HIV infection, AIDS and AIDS-related opportunistic infections. The FDA also works with the blood banking industry making sure that the nation's blood supply is safeguarded. (FDA homepage, 2006) All companies within the health care industry have to have their innovations approved by the FDA before they can sell their product to the market. This delay in market diffusion is one of the reasons why patents for innovations as such having to be approved by the FDA have in some cases a prolonged patent duration of 5 years, which means 25 years instead of 20 years. (USPTO, 2006)

R&D is a lengthy process that needs a lot of capital to exist. Some companies choose to minimize risk and avoid binding capital by licensing technology from research intensive companies. According to Ny Teknik (2003) it is important for Swedish companies to patent and thus pursue R&D activities. In order for Sweden to be able to compete world wide in the new intellectualized economy there has to be more investments that enable companies to patent more. When the industrial companies move their facilities to other countries for cheaper manufacturing the only thing countries can compete with is intellectual property.

R&D, FDA, clinical trials and all actions taken to create intellectual property from the assets is what defines the high risk level industry of biotechnology. One of OMX's indexes is the health care index that includes some of the biotechnology companies in Sweden. There are four subindustries in the health care sector: Health Care Equipment, Health Care Services, Biotechnology and

Pharmaceuticals. The health care index has in a period of three years (2003-2005) shown an increasing trend as seen in figure 4 below.

According to Swedish Biotechnology (SwedenBio, 2006) Sweden is the fourth largest biotech country with the highest number of biotech companies per capita in the world. Biotech has grown more rapidly than any other industry in Sweden with an annual growth rate of 10% between 1995 and 2003. Sweden has given birth to several groundbreaking inventions in biotech during the past 50 years including pioneering drugs such as Xylocain, Losec and Genotropin. The most important sectors of R&D today include drug discovery in metabolic diseases, immunology and neuroscience as well as advanced tools for diagnostics and bioproduction (SwedenBio, 2006).

The health care industry though it includes many high risk level companies is one of the most important industries in Sweden. It is the nature of the industry that makes it uncertain to invest but in the same time safe since there will always be a need for pharmaceuticals, health care services and products for all people at all times.

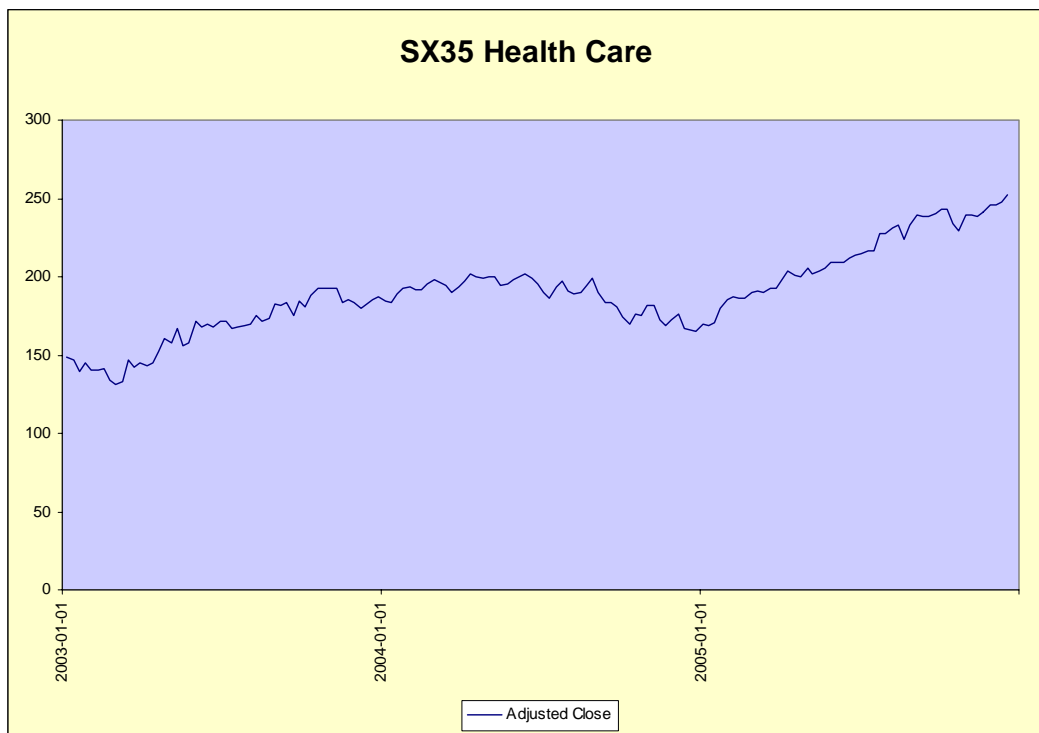


Figure 4. SX35 Health Care 2003 - 2005

4.1 The companies and dips

In this chapter a short description of the 29 companies that are included in the Health Care index is found. The information about the companies is taken from their respective homepage, interim reports and annual reports. For each of the companies a short description of the probable causes to the identified dips is presented. All of the information concerning the “dip reasons” is gathered from diverse media sources that are accessed through Mediearkivet. The diagrams of the different companies and their dips can be found in the end of this study in the appendix.

Biocore International

Biocore International is a health care equipment company founded in 1984 in Uppsala, Sweden. The company develops systems for protein interaction analysis, in order to generate data on the interactions between proteins and other molecules. This information is used to give insight into protein functionality and disease mechanisms for the efficient development and production for therapeutics. Their products are used in areas such as antibody characterization, proteomics, lead characterization, immunogenicity, biotherapeutic development and production. The company also offers a system and ready-to-use kits for determination of good quality and safety. Their principal owner is Pfizer Inc and they have world wide revenues of MSEK 569 in the first quarter of year 2006 with 275 employees.

Biocore International had two dips in the three year period 2003 to 2005. The first dip was identified on the 2003-03-17 when Biocore was one of the companies barely surviving last years performance. However, compared to other companies that went with losses Biocore did fairly good. The other dip was identified 2004-07-19. The reason for the dip is thought to be a pure performance when the company presented their interim report. Their sales and revenues went down and the prognoses for the rest of the year followed the same declining trend. This underperformance cost the former CEO his job according to different newspapers the same week.

Biolin AB

Biolin AB is a health care equipment company founded in 2002 in Nacka Strand, Sweden. The company is primarily driven by R&D and business development within life science and related areas. The company has functioned as a partner in

the development and foundation of companies such as Q-sense, integration Diagnostics and others. They have mostly focused on development, marketing and sales of innovations within dental care. Their principal owners are different shareholders and they have revenues of MSEK 19 in Sweden in the first quarter of year 2006 with three employees.

Biolin AB is one of the companies that did not experience any dips during the three year period 2003 to 2005.

Elekta AB

Elekta is a health care equipment company founded in 1972 in Stockholm, Sweden. The company is an international medical-technology Group, providing clinical solutions, information systems and services for improved cancer care and management of brain disorder. Their customers are hospitals around the world and their primarily markets are in North America, Europe followed by Asia and Japan. They have approximately 350 employees year 2006 with a turnover of MSEK 3 152 in the first quarter of 2006.

Elekta AB is also one of the companies that did not experience a dip during the three year period 2003-2005.

Getinge AB

Getinge AB is a health care equipment company founded in 1904 in Getinge, Sweden. The company is a world leading supplier of medical equipment for infection control, surgery and the care of elderly and disabled. Their customers are active within life science and offered different products such as washer disinfectors to sterilizers for production and research. They also offer water stills, clean and pure steam generators that are mainly for pharmaceutical and biotechnology applications. Their principal owner is Carl Bennet who is the chairman of the company. The company has world wide revenues of MSEK 11000 in the first quarter of year 2006 with 7252 employees.

Getinge B share experienced twice a dip under the three year period 2003-2005. The first one was 2003-11-24 when the company had a share splitting 4:1. The company experienced some discomfort earlier that week when they lost two tax-related trials, which costs the company huge losses. The other dip occurred on the 2005-07-25 when the company had to warn the market for decreased winnings before the interim report was to become public in three days. However,

they tried according to newspapers to calm the investors by promising the prognosticated end year results.

Human Care HC

Human Care HC is a health care equipment company founded in 1993 in Sweden. The company develops and produces help equipment for elderly. Their products include walking frame on wheels and special elevator systems for disabled people. They are active in Scandinavia and 40 percent of the production is exported to other countries and have distributors in 12 countries such as USA, the Netherlands and Japan. In the first quarter of year 2006 they had a turnover of approximately MSEK 186,7 with 14 employees.

Human Care HC experienced four dips during the three year period 2003-2005. The first one was on the 2003-06-02, but since there are no records of news related to the company during that dip it is uncertain to say what the reasons behind the dip was. The next dip occurred on the 2003-10-20 when the company's interim report was made public as well as the fact that the company lost a patent dispute with Liko in Sweden. The third dip on the 2004-08-09 was a result of the company's interim report becoming public and not satisfying the expected outcome. The last dip recorded during this three period of study was on the 2004-10-11 when the company adjusted the revenue potential for the rest of the year by decreasing it.

Ortivus AB

Ortivus is a health care equipment company founded in Sweden in 1985. The company develops, manufactures and markets systems and components for patient monitoring and decision making support in the area of acute cardiac disease, pre hospital monitoring as well as analysis and support in investigations of neurological disorders. Their customers are hospitals as well as private persons. The company has a turnover of MSEK 173,6 in year 2005 with 180 employees.

Otrivus had five dips in three years. The first one came on the 2003-06-30, but unfortunately there are no records concerning the reasons for this dip. On the 2004-02-16 came the second dip and the reason for it is probably the fact that their cardiology department has gone with loss. The third dip came on the 2004-02-23 when their interim report showed worse results than expected. The next dip was registered on the 2005-04-04 when Ortivus ordered a patient surveillance

system for MSEK 9. Except from this order the company placed all other news in that period are good news concerning new client orders. Maybe this new investment was not regarded as a good one from the shareholders or maybe the company did not show the expected revenue levels. The last dip occurred on the 2005-05-09 when their interim report showed big losses because of the company never receiving royalty fees from Philips as it was expected.

SECTRA AB

Sectra is a health care equipment company founded in 1978 in Linköping, Sweden. Their operations include medical systems and secure communication systems. They have more than 385 employees in ten countries and operate through partners all over the world. Their products are radiology systems for film-free radiology, mammography and orthopedics and their main customers are hospitals. They have also systems that enable secure communications systems with customers such as NATO. Their turnover for year 2005 amounted MSEK 455,9 with their largest owners being private shareholders.

Sectra like Otrivus did also experience five dips during 2003-2005. The first one came on the 2003-03-03 when news about Sectras diffusion internationally through partnerships with other companies became public. The reason for the dip could be the increased uncertainty by creating new partnerships and diffusing into new markets. On the 2004-07-19 came the second dip but all the news related to the dip are good news such as contracts with new partners and clients. Maybe the partners are not classified as that good by the shareholders, or they may have performed worse than expected. The third dip came later the same year on the 2004-09-06 when Sectra published their interim report and results were not the ones expected by the market. The reason for that according to the CEO are the big costly investments on the mammography industry. The fourth dip occurred on the 2005-04-04 and the only news published that period about the company was that they are investing on women's health. The last dip was on the 2005-07-04 when news about the new share issues was a fact and the relationship with one of their biggest partners changed.

Nobel Biocare Holding

Nobel Biocare Holding is a health care equipment company founded in 1981 in Gothenburg, Sweden. They are a world leader in innovative esthetic dental solutions and one-stop-shop for restorative esthetic dentistry. Their products

include crown, bridge and implant innovations as well as providing with training, education and clinical documentation treatment concepts. Their customers are dental specialists, general practitioners and dental technicians. In the first quarter of year 2006 the company had a turnover of MEuro 149,7 with 1 818 employees.

Nobel Biocare Holding had a dip on the 2003-03-10 but unfortunately there is no news about the company during the dip period.

Feelgood Svenska

Feelgood Svenska is a health care service company founded in 1995 in Stockholm, Sweden. In year 2005 the company had a turnover of MSEK 433 and approximately 560 employees. The company provides with a holistic concept for companies and organizations that invest in health care. They are mainly a supplier and partner of services within work environment, rehabilitation, health, exercise and health care. The company had 576 employees and a turnover of MSEK125,7 in the first quarter of year 2006, with a private shareholder being the largest one in the company.

Feelgood Svenska experienced two dips; on the 2004-10-25 and on the 2005-07-25. Unfortunately there is no news registered during both dip periods.

Gambro AB

Gambro is a health care service company founded in 1964 in Lund, Sweden. The company is a global actor in renal care and blood component technology. They have three different business units such as Gambro Health Care, Gambro Renal Products and Gambro BCT. Their customers are different clinics around the world with revenues of approximately MSEK 2 700 with 20 400 employees in 40 countries. Their services include hemodialysis, peritoneal dialysis, acute dialysis, transplantation, bloodlines and water treatment equipment.

Gambro B experienced a dip on the 2003-05-12 when the company was found guilty in court and had to pay damages to the shareholders of the acquired company because of the low price that was paid during the acquisition. Another reason for the dip is believed to be that the company has been classified as an investment with a very high risk premium. Later the same year on the 2003-12-15 the company had one more dip because of the recommendation received by CSFB not to buy any shares from Gambro because of their underperformance. The third dip occurred on the 2004-02-09 after that Wallenberg had sold all their

shares in the company in secrecy followed by a Norwegian company. Hagströmer & Qviberg recommended investors to buy share at Gambro but also encouraged them to wait with their purchases until the Davita business deal was made. On the 2005-07-25 was yet another dip recorded but the strange thing this time was that all news related to the company was of a good art. Thus the reason becomes unknown. However one could think that the reason can be the same as for the dip on the 2005-10-31 which was a case of underperformance to the market expectations.

RaySearch Laboratories AB

RaySearch Laboratories is a health care service company that was founded in Stockholm, Sweden in 2000. The company has introduced a new method for an improved treatment of oncological diseases. Their product is a software framework for improved radiation therapy. The products and methods are distributed through alliances with radiation treatment planning system suppliers. The company has 12 employees and a turnover of MSEK 69,9 in 2005.

On the 2003-06-16 RaySearch Laboratories experienced their only dip in the three year period 2003-2005. The reason is thought to be misunderstanding were investors thought that the business of the company earlier named Taurus Petroleums should be taken over by RaySearch and thus a decline in revenues was expected.

Capio

Capio is a leading health care manager in Europe founded in 1994 through an acquisition of Nova Medical and Ludby hospital. They collaborate with public health care and the Capio Group has more than 100 operating units with 16 000 employees. They function in Sweden, Norway, Denmark, Finland, France, the UK and Spain with an annual turnover of MSEK 11 000. Their customers are country councils, municipalities, businesses as well as public and private insurance companies that buy health care services. Capio had in year 2005 a turnover of MSEK 9,2 with 87 employees and MGA holdings as their main shareholder.

Capio experienced their only dip on the 2003-08-11. The reason was the revenues that were cut in half from what the market had anticipated because of earlier problems with their businesses in England, France and Sweden. Amongst others the company was criticized by the French government for closing Polyclinic

Martzet for a month. They were also criticized for changing their strategy so abruptly and with no apparent reason. The company experienced also decrease in sales in England that they discharged by saying that this kind of decrease is traditional at that time of year.

Medicover Holding SDB

Medicover Holding SDB is a biotechnology company founded in 1995 in Warsaw under the name of ABC Mediocover. Medicover is a staff-model, facility-based integrated health care organization. The company has two main operations in clinics business and laboratory services. They provide private health care services to companies, organizations and individuals as well as laboratory services for public and private health sectors. They have more than 200 000 employees with clients in Poland, Romania, Hungary, Czech Republic and Estonia. In 2005 they had revenues of MEuro 59,2 and Celox SA as their main shareholder.

Medicover Holding SDB experienced two dips during the three year period; one on the 2005-01-24 and another on the 2005-07-25. For the first occasions there are unfortunately no news related to the dip. On the second occasion the only news available about the company was that they were thinking of developing a private hospital that should be considered a pioneer of its kind in Warszawa in Pollen. Maybe the shareholders found this new investment too risky, maybe not.

Active Biotech

Active Biotech is a biotechnology company founded in 1997 in Lund, Sweden. The company focuses on developing pharmaceuticals for medical fields that concern the immune system. They produce and develop substances that modulate the human immune system. Their products have had most progress in treating multiple sclerosis as well as lung, renal and pancreatic cancer. Their partners are large companies within the pharmaceutical and biotechnology industry.

The only dip experienced by Active Biocare was on the 2005-04-04 where the news about the company making many people redundant became public. This is seen by many investors as a desperate move from the company to create more revenues in the company in the short run, which can indicate that the company's future can be in danger.

Artimplant AB

Artimplant is a biotechnology company formed in 1990 in Sweden. It is a Swedish biomaterials company that focuses on solutions to orthopaedic, deontological and reconstruction surgery related problems. They have proprietary technology under the brand name Artelon which is a patented biomaterial that is used against formation of new hostile tissue. The company licenses its product and technology to partners all over the world. In year 2005 the company had a turnover of MSEK 8,2 and had 27 employees.

Artimplant had two dips during the three year period 2003 to 2005; one in 2004-04-26 and another on the 2005-04-18. On the first occasion the company received some bad judgment from Biotech Sweden that discouraged all investors to buy any shares from the company. On the 2005-04-18 the reason for the dip was that the company had a new share issue that they later changed the rules for in order to gain more money.

BioGaia AB

BioGaia AB is a biotechnology company founded in 1990 in Stockholm, Sweden and is mainly a producer of functional foods and health products. The company develops, markets and sells probiotic products with documented health benefits. Their products are based on the lactic acid bacterium *Lactobacillus reutri* which has probiotic or health-enhancing effects. Their costumers are nutrition, food, natural health, pharmaceutical and animal feed companies and located in 18 countries worldwide. The company had revenues of MSEK 60 in Sweden in the first quarter of year 2006 with 33 employees and their principal owner as Annwall Rothschild Investment AB.

BioGaia AB had three dips during the three year period 2003-2005. The first one was on the 2003-07-14 when the company was classified as a biotechnical company with all the risks that includes. The company has to perform problem free if there are to gain any investors. Investors seeking for quick revenues would turn their backs to the company according to the news flow that period. On the 2004-05-10 the company went out with their interim report that showed on a big decrease in revenues, which cause the company its dip. For the dip on the 2005-07-18 there are no relevant news published.

BioInvent International AB

BioInvent is a biotechnology company founded in 1997 in Lund, Sweden and is mainly a pharmaceutical company. The company develops therapeutic antibodies against diseases where there are significant needs for new treatment. Their projects in year 2006 are mainly focused in areas such as HIV, thrombosis, atherosclerosis, oncology and osteoarthritis. Some of their partners are ALK-Abelló, Antisoma, UCB, ImmunoGen, OrbusNeich, Syngenta and XOMA. The company had revenues of MSEK 28 in Sweden in the first quarter of year 2006 with 96 employees and their principal owner is Stiftelsen Industrifonden.

BioInvent International AB's first dip occurred on the 2004-04-13, however there is no news recorded during that period relevant to the dip. On the 2004-05-25 the second dip occurred when the news about the company entering a new clinical test period for HIV/AIDS pharmaceuticals as well as the beginning of new projects concerning elderly care and cancer. This phase is characterized by a lot of uncertainty and costs, which makes investors interested in quick revenues not that interested in buying the company's shares. Later that year on the 2004-07-19 the company published their interim report and thus making their losses apparent to the public, which caused yet another dip. On the 2005-08-29 the company experienced their forth dip. News about how big companies in the biotech industry in order to compete with USA they acquire other companies in the field instead of licensing their technologies because of the lack of new R&D. This drove the prices up for the biotechnical companies and drove the prices down for the shares. Their last dip occurred on the 2005-10-10 when the company published yet another interim report showing that their results were not the ones expected.

BioPhausia

BioPhausia is a biotechnology company founded in 1994 in Stockholm, Sweden. The company is a specialty pharma company in the Nordic region. They provide with pharmaceuticals and focuses on generic products, niche products and original drugs. They buy or license pharmaceuticals with or without patents to market and sell and have no research programs of their own. The company had revenues of MSEK 8 in Europe in the first quarter of year 2006 with 11 employees. Their principal owner is Livförsäkringsbolaget Skandia.

BioPhausia had three dips during the three year period 2003-2005. On the 2003-09-22 the company had its first dip. The company underwent a new share issue where a consortium guaranteed the company that for a price of MSEK 10 receive 25% of all the shares that underwent the new share issue. A new share issue led to yet another dip on the 2003-10-27, when a 90% over coverage was noted. Their last dip was on the 2005-11-14 when the company in its interim report showed decreased revenues.

Karo Bio

Karo Bio is a biotechnology company specialized in nuclear receptors for the development of novel pharmaceuticals for treatment of metabolic diseases. The company has head office in Huddinge, Sweden and the turnover in 2005 amounted to MSEK 51,9. Their principal owner is Nordea.

During the studied three year period Kari Bio has eight dips. The first one occurred in 2003-02-10 and was the result of the annual report and the second dip came not even one month later, 2003-03-03, when Karo Bio decided to issue new shares to collect 160 MSEK from the shareholders. The third and fourth dip occurred two weeks in a row, 2003-08-11 and 2003-08-18. For the third dip no news were posted but the fourth dip was one of Karo Bio's partners, Merck, decided to cancel their partnership in a drug candidate the two companies were working together on. 2003-11-17 another of Karo Bio's partner cancelled their cooperation and as a consequence of this Karo Bio cut down all their R&D operations in USA. In 2004-04-26 one more of Karo Bio's partners cancel their partnership and one year later, in 2005-04-11, Merck stops the development of a substance that they worked together with. The last dip in the three year period occurred 2005-10-17 when the interim report for the first nine months of the year was presented.

Medivir

Medivir, a biotechnology company, was founded in 1988 and is located in Huddinge, Sweden and Chesterford, England. Medivir develops drugs against major, widespread diseases, based on proteases as the target enzyme. The company employs 133 people and had a turnover of MSEK 102,6 in 2005. The main owners are Bo Öberg and Nils Gunnar Johansson.

Medivir dipped six times from 2003 to 2005. In 2003-03-17 the first dip occurred, in the surrounding time period no negative news was published in the studied

sources though. One year later, 2004-03-15, Medivir conducts a new share issue and this resulted in the second dip. The third dip occurred in 2004-12-27 and was the result of that a financial partner cancelled their contract with Medivir and thereby did not help Medivir carry the costs for their project anymore. For the fourth dip which occurred in 2005-01-31 the underlying reason is unknown but in 2005-03-14, the time of the fifth dips, more news were published. Medivir's partner then decided to stop all further research in their joint project. The last dip in the three years occurred in 2005-10-03 but no news were published.

Oxigene

Oxigene is a biotechnology company based in Massachusetts, USA. The company is into vascular targeting and develops treatment of cancer and certain eye diseases. The company focuses the development and commercialization of drug candidates that selectively disrupt abnormal blood vessels associated with solid tumor progression and visual impairment. The company employs 26 people.

For Oxigene the three year period resulted in five dips. The first one occurred in 2004-03-08 and the reason is difficult to find. Anyhow new CFO and COO were announced recently after the dip. Another dip occurred 2004-05-17 when positive R&D results were presented. For the third and fourth dip in 2004-07-05 and 2004-11-01 no news were published. The last dip concerning Oxigene occurred 2005-02-28 and was related to the release of the annual report. The company also had sold own shares to institutional investors for a price lower than market price in order to raise their liquidity..

Probi AB

Probi AB was founded in 1991 and is a biotechnology company in the field of probiotics. Probiotics is bacteria used in food and dietary supplements to improve public health. Probi's head office is located in Lund and their turn over amounted to MSEK 27,2 in 2005. The company has 11 employees and the main owners are H & B Capital Lp and Skane Dairy Ek för.

Probi experienced three dips, in 2005-01-31, 2005-05-30 and 2005-07-25. For the first two dates no news concerning Probi were published whilst for the third the interim for the first half of the year were released and the result after tax amounted to -4,3 MSEK.

Biotage AB

Biotage AB was formed in 2003 and is a global biotechnology company providing innovative solutions, knowledge and experience in the areas of medicinal and analytical chemistry, process development and genetic analysis. The headquarters are located in Uppsala, Sweden and they have facilities in USA, Wales, UK and Japan. Biotage had a turnover of MSEK 430 in 2005 and approximately 330 employees. Their main shareholder is HealthCap.

The company did not experience any dips during 2003 – 2005.

Q-Med

Q-Med is a biotechnology and medical device company that develops, produces, markets and sells medical implants. Q-Med was founded in 1987 but has been run in its present form since 1995 and is based in Uppsala, Sweden. The company's products are used for instance for the filling out of lips and facial wrinkles and for facial contouring and treatment of stress urinary incontinence in women. Q-Med has today approximately 540 co-workers had a turnover of MSEK 976 in 2005. Their main shareholder is Ågerup Bengt bolag.

Q-med only experienced one dip during the three years and this one was in 2005-04-25. This was when the company presented their interim report despite that the result amounted to 3,5 MSEK.

Tripep

Tripep is a research company within the biotechnology industry. The company is based in Huddinge, Sweden and was founded in 1997. Tripep's main focus is drugs against HIV and HIV related diseases and had a turn over of MSEK 0 in 2005. They employ 17 people and the major shareholder is Dormant Properties AB.

Two times during 2003 – 2005 Tripep dipped. The first time was 2003-03-31 when the annual general meeting decided to buy back shares in a way similar to paying dividends. The second dip occurred in 2005-06-13 when the company decided to issue new shares.

Vitrolife

Vitrolife, a biotechnology company, was in 1998 the result of a change of name of Scandinavian IVF Science which was founded in 1989 as a spin-off from the University of Gothenburg and Fertilitetscentrum at the Carlanderska

Sjukhemmet. Vitrolife's head office is located in Kungsbacka, Sweden and their business concept is to develop, produce and market high-quality systems for the preparation, cultivation and storage of human cells, tissues and organs outside the body. The company is active on the global market and has production facilities in Kungsbacka and Denver, USA. They had a turn over of MSEK 120,1 in 2005 and their major shareholder is Skanditek Industriförvaltning AB.

Vitrolife dipped three times in the three years. The dates for the dips were 2003-04-22, 2004-03-01 and 2005-04-11. In relation to all these three dates the annual reports were released and all three years there were a small loss.

AstraZeneca

AstraZeneca is one of the world's leading pharmaceutical companies and was the result of a merger between Swedish Astra AB and Zeneca Group PLC of the UK in 1999. Their headquarters are in London, UK and their R&D headquarters are in Södertälje, Sweden. The company focuses on development, manufacturing and marketing of prescription medicine. Their therapy areas are cancer, cardiovascular, gastrointestinal, infection, neuroscience and respiratory & inflammation. The company employs 65000 people and had a turn over of 24 billion USD in 2005.

During 2003-2005 AstraZeneca experienced 5 dips. The first dip occurred 2003-08-18 when FDA approved one of their pharmaceuticals, Crestor, the reason for the dip is probably not the approval though but the fact that scientists showed a great scepticism to the pharmaceutical and the way it treated the patients. The second dip, 2004-04-19, no news were published but in 2004-05-17 it was time for the third one. This time AstraZeneca themselves warned doctors in UK that Crestor may result in unwanted effects if the dosage is incorrect. 2004-09-13 the fourth dip was the result of that FDA need further research results in order to approve a pharmaceutical that were thought to be approved and in 2004-12-13 the fifth and last dip occurred. The reason for this dip was that one of the pharmaceuticals did not increase the probability of surviving lung cancer, which was the intention with the drug.

Diamyd Medical AB

Diamyd Medical AB is a global pharmaceuticals company based in Stockholm, Sweden and Pittsburgh, USA. The company was founded in 1996 and is focused on developing therapeutics for diabetes, pain and cancer as well as on protein

delivery using a proprietary gene delivery technology platform. Diamyd Medical's business idea is to identify potential therapeutics for their development through clinical trials. The company had seven employees in august 2005 and revenues of MSEK 0,3. The major owners are Bertil Lindkvist and Anders Essen-Möller.

Diamyd Medical dipped four times during the period. 2003-10-13 and 2004-04-26 the company released interim reports which did not correspond to the shareholders' expectations. The third dip, in 2005-05-03, was the result of a new share issue as a consequence of good research results. In 2005-06-27 on the other hand Diamyd Medical is the only share within the biotech industry with a sell recommendation from Dagens Industri, this may be why the last dip in the period occurred.

Meda AB

Meda AB is a specialty pharmaceutical company with subsidiaries in more than 20 European countries and head office in Solna, Sweden. Meda is specialized in marketing and market-adapted product development and creates its product flow through partnerships, in-licensing, and product acquisitions. Meda's prioritised therapy areas are asthma and allergy, cardiovascular, pain and inflammation, gastroenterology and dermatology and infection. The company has 900 employees in marketing and sales and revenues of MSEK 2870 in 2005. Their major owner is Stena Sessan Rederi AB.

During the period from 2003 to 2005 Meda experienced 2 dips. The first dip occurred 2004-08-23 and related to the release of their interim report. Approximately 14 months later, in 2005-10-24, the second dip occurred. This dip was the result of a decision to issue new shares in order to collect more capital from the shareholders.

4.2 Empirical summary

Looking at the figures provided by the study there are many interesting observations that can be made. During the study there have been 29 companies included in the Health Care index analyzed as to when and why they have dipped during the three years period of study.

After gathering all data concerning the dips it became apparent that of the 83 dips that had occurred during the three years for all 29 companies there was only one occasion during a week on the 2004-04-26 when five companies had a simultaneous dip the same week. On three occasions and thus during three weeks three companies had simultaneous dips. During seven weeks on this three years period there were two companies dipping on the same time span and during 55 weeks one company dipped at the time. On the remaining 89 weeks no dips occurred. With the exception of the five company dip that occurred the same week, one could say that dips occur independently from the other companies.

Studying how many times each of the 29 companies dipped during the three year's period, as illustrated in table 2, an interesting observation was made. If the companies were to be sorted according to the sub industry they belong to it became apparent that companies belonging to the Biotechnology and Pharmaceutical sub industry dipped almost twice as much as the companies belonging to the other sub industries. The sub industries the companies were divided into is according to the Health Care index classification, where there are five different sub categories available; Health Care Equipment, Health Care Services, Managed Health Care, Biotechnology and Pharmaceuticals. The reason behind Biotechnology and Pharmaceutical companies dipping more than others has probably to do with the fact that these companies are highly risk companies that are capital intensive and have time consuming projects where the outcome is not always guaranteed being the one expected.

Looking at the different reasons why the companies dipped, five categorizations of the nature of the reason for dipping were made. The reasons sorted according to the frequency were divided into; Business Setbacks, Reports, Unknown, Share Issues and Recommendations.

Table 2. Included stocks in SX35 Health Care and
number of dips in 2003-2005

<i>Share name</i>	<i>Symbol</i>	<i>Number of dips</i>
Biacore International	BCOR	2
Biolin	BLIN	0
Elekta B	EKTA B	0
Getinge B	GETI B	2
Human Care HC	HUMA	4
Ortivus B	ORTI B	5
SECTRA B	SECT B	5
Nobel Biocare Holding	NOBE	1
Feelgood Svenska	FEEL	2
Gambro B	GAMB B	5
RaySearch Laboratories AB	RAY B	1
Capio	CAP	1
MEDICOVER Holding SDB	MCOV SDB	2
Active Biotech	ACTI	1
Artimplant B	ARTI B	2
Biogaia B	BIOG B	3
BioInvent International	BINV	5
BioPhausia	BIOP	3
Karo Bio	KARO	8
Medivir B	MVIR B	6
Oxigene	OXGN	5
Probi AB	PROB	3
Biotage ser. A	BIOT A	0
Q-Med	QMED	1
Tripep	TPEP	2
Vitrolife	VITR	3
AstraZeneca	AZN	5
Diamyd Medical B	DIAM B	4
Meda A	MEDA A	2

83

“Business Setbacks” was the most common reason for the companies dipping. Of the 83 dipping occasions 27 of them were classified as Business Setbacks being the major issue. Changes in partnerships, investments that did not pay off, or too high risk investments as well as legal issues such as being found guilty in court are examples of Business Setbacks.

“Reports” was the second most frequent occurring reason, where 21 of the 83 dip occasions were classified as Reports being the main reason for the dips. “Reports” is a category including companies’ interim and annual reports. It is

maybe not that surprisingly that many of the dips occurred associated to the reports being published and not meeting expected levels.

“Unknown” is an almost as frequent reason as “Report” justifying the dips. In some cases there was no news presented about the company associated to the dip and in some other cases there were only good news for the business presented such as increase in sales. Because of the uncertainty that aroused concerning the underlying causes for the dip the classification for this category of uncertainty was named “Unknown”, because the reason behind the dip is not apparent from the media stream during the specific period of time..

The “Share Issues” reason occurred in 12 of the cases. Under this category one finds news as companies issuing new shares or enforcing share splits. Many companies issue new shares in order to gain more money and increase the levels of liquidity of the company to finance their projects and investments. When these share issues are directed to current shareholders the price of the new shares tends to be lower than the one of the market making the overall value of the share to decrease.

The classification named “Recommendations” is the less occurring reason for a company dipping. Only three of 83 dips were cause by recommendations from market experts towards investors not to buy any shares of the specific company on the market. Under “Recommendations” is all news concerning discouraging in buying a company’s shares at the time because of feared underperformance or increase of the risk factor of the specific business.

During the examination of the data that was gathered during this study there were tries to find more clear connections between data, the dips and how everything is connected to the overall Health Care index. However, none of these tries were that fruitful. One of the things that was studied but without any result was the connection between the frequent occurring dips during some weeks and the affect of those on the index. Unfortunately there were no clear connections found between the companies dips and the index since in some occasions though we had three different companies’ dipping during the same period, the overall index went up. In other cases the opposite occurred were the index was declining while no actual dips occurred.

5. Discussion

In this chapter a discussion between the theoretical framework and empirical theory will be depicted. Since the purpose of the study is to "Investigate the reasons why negative short-term fluctuations in stock price occur" the reader will be able to identify some similarities and maybe discover some trends between the companies in the Health Care industry and the reasons for their dips.

In this study one of the most important results was the classification of the different news and thus reasons for the dips occurring. The classifications were as mentioned and defined in chapter 5; Business Setbacks, Reports, Unknown, Share Issues and Recommendations. If the theoretical way of thinking is added to these findings there are some new conclusions derived.

The most frequent reason for the dips was news related to Business Setbacks. Investors reacting on this kind of news show a kind of sophistication from the market. The market clearly reacts on business related news such as changes in partnership or R&D not giving the expected results by expressing their worries for the future of the company by indirectly making to decrease in value.

When it comes to investors reacting to companies reports, it is not that surprisingly. When news about a company's failure in meeting the expectations of the market or failure in making any profit at all makes the shareholders rightfully concerned about the future of the company and their own value maximization gets in stake. Thus the market will in the end react with creating the companies to dip.

Shareholders react sometimes negatively towards companies issuing new shares on the market. Capital intensive companies that are in need of increasing their liquidity levels they will in some occasions have directed new share issuing towards their shareholders in order to gather money for their business. In a way one can say that these companies sacrifice the value of their shares in the short run in order to increase the liquidity levels in the company and finance their costly R&D and make investments to perform even better in the future and in the long run.

Discouraging words from market experts that recommend people not to buy shares in a company because of the company's underperformance of future

financial setback, have in some cases a huge effect. In this study there were three cases where shareholders reacted to the experts discouraging words which resulted in the company's dip. This fact that people will do as the media dictates shows that people are sometimes subjects to the media and the structural factors and are not masters of their own behavior.

All of these above mentioned reasons behind the companies' dips show in a way what we always have in a way known that not everyone on the market act irrationally and that the market as a whole is relatively semi-strong form efficient. The fact that investors react to information about business setbacks or information from company reports where market expectations not have been fulfilled can be seen as a clear rational behavior. However, the phenomenon that no news or good news for a company can result in the company dipping is a mystery in a way. This can indeed be an indicator of the shareholders on the market being and acting irrationally at times. If there are no news on the market and the theory of strong form efficiency on the market does not exist in the sense that internal information do not help in predicting the future performance, then the shareholders have acted in sheer irrational manner. These overreactions in price changes are one of Tversky's (1995) irrational effects and can be a result of people trusting their gut feeling or just following a fool's actions because of the herd instinct kicking in. Or maybe investors are simply overconfident in their decision-making skills.

In this study when applying the rational and irrational behavior theories of investors on the market, an attempt to classify the different reasons for the dips can be made. Reasons based on information belonging to the categories Business Setbacks, Reports and Share issues can be seen as evidence of the investors' rational behavior. Whereas being influenced by Recommendations is closer to an irrational behavior that implies investors being driven by herd instinct when making investment decisions. Also the Unknown reasons are a sign of irrational behavior on the market where investors may have been influenced by their gut feeling or feelings of overconfidence that leads to decisions that for no apparent reason result in what is now known as a dip.

During the numerical analysis in this study it was found that dips in the different companies did not occur simultaneous in the same week, which can be an indicator of the difficulty in predicting any future trends based on past performance for a company in a specific index. However, the fact that

Pharmaceutical and Biotechnology companies had almost twice as many dips compared to the rest of the sub industries show again signs of investors behaving rational. Who would want to invest all their money in companies with high risk and not hedging at all? Maybe people are indeed rational – most of the times.

6. Conclusions

In this chapter all conclusions derived from the material gathered and the discussion made in the chapter before will be presented. The purpose of the study has been to "Investigate the reasons why negative short-term fluctuations in stock price occur" and here the reader will be presented with the conclusions made after analyzing all relevant material gathered during this thesis.

It is apparent that investors try to predict and beat the market in order to generate revenues. Whether the market is efficient or not or if the investors are irrational or not, the fact is that people driven by different forces react differently to news made public about the company and its industry. There were 29 companies listed under the Health Care index that were subject for analysis in this thesis. These companies had, during a three year period between 2003 and 2005, 83 dips and as was noticed in this study the dips occurred independently from each other.

Looking at the different reasons why companies dipped, five categories of the nature of the reasons behind the dips were made; Business Setbacks, Reports, Unknown, Share Issues and Recommendations sorted after frequency. The overall conclusion that can be drawn is that some people do get affected by different news regarding their companies but why can not be said. The remaining fact is though that these people get so affected by news at a time that they react in a way where the company in matter decreases in value for a period of time.

There are some types of news effecting people's judgments more than others and in that category Business Setbacks, Reports and Unknown as the main reasons for the dips can be found. The fact that people react to Business Setbacks, Reports and Share Issues shows in a way, that the market is sophisticated and looks for signs of future value losses, which means that investors on the market can be seen as rational. However, the fact the people will react in a way that causes a company to dip without there being any apparent reason to these actions or because someone says they should react in a certain way, can indicate that people will be driven by their own emotional state or gut feelings resulting in behavior that, by some researchers, is seen as more irrational.

The important conclusion derived from this study is why dips in stock price occur. The reasons are many such as the nature of the market as well as the rational and irrational behavior of investors on the market. Investors' strive to find the ultimate path to wealth by predicting, beating and thus influencing the market is what makes the shares and thus the market volatile. The news and media is only a tool for justifying ones behavior on the market, but in the end it is the investor him/herself that makes the decision and creates the momentary imbalance on the market.

6.1 Further studies

After conducting this thesis several thoughts have arisen. First of all it would be interesting to analyze the rest of the Swedish market and see if the reasons for the dips are the same and in what extent dips occur. Furthermore it would be of interest to investigate whether the frequency of dips is connected to the level of risk of the industry as where discerned in this study. Lastly a "reversed" study would be interesting. In this study a number of widely debated occasions where companies are painted out in the media as "not thinking of the shareholders" could be identified and the effect on the share price analyzed. With these studies done a full mapping of the reasons for short-term fluctuations could be conducted, not only the negative ones.

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A. Appendix

