EFFECTS OF ALLEGATIONS OF CORPORATE MISCONDUCT ON SHARE VALUE – A STUDY ON THE SWEDISH MARKET

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ABSTRACT

We set out to determine the stock market's reaction to announcements of corporate illegalities in Sweden resulting in the company being fined or sued. By visiting the main legal authorities in Sweden, we manually collect our observations of announcements of misconduct for listed companies creating a unique dataset of 49 observations from the period January 1990 to April 2008. Using the event study methodology, we compute abnormal returns and obtain results which suggest a general trend of a nonexistent market reaction in Sweden. We conclude that the reasons for this observation is due to the fundamental structure of the legal system in Sweden where individuals rather than companies are targeted and the size of fines imposed are trivial in comparison to the firms' market value. However, we note that firms being sued for violating the Competition Act experience a significant negative wealth loss of 1.39% following the announcement of the illegality. It proves the Swedish Competition Authority's ability to efficiently implement its legislation. Reactions to other legislators' law enforcement are absent which ultimately reflects Swedish companies' ability to shirk the consequences of fraudulent activities.

Key words: Misconduct, litigation, stock price, Sweden, event study

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Definitions

Allegation   Allegation is used synonymously for when it becomes known that a company either is fined or subject to a lawsuit due to some committed illegality

FI   Swedish Financial Supervisory Authority (Finansinspektionen)

EBM   Swedish National Economic Crimes Bureau (Ekobrottsmyndigheten)

KKV   Swedish Competition Authority (Konkurrensverket)

SEC   The U.S. Securities and Exchange Commission

WSJ   Wall Street Journal

1. Introduction

In recent years, Swedish companies have been confronted with severe allegations of misconduct comparable to the infamous Enron and WorldCom scandals in the U.S., Sweden's perhaps most controversial cases are Skandia and Carnegie, where managers have taken advantage of their position in order to gain considerable personal benefits. Another large case of corporate illegality was the "asphalt cartel" where companies such as NCC, Peab and Skanska subdivided the market between them in order to maximize profits by charging customers higher prices and reducing the competitive environment. When the Swedish Competition Authority discovered the violation against the Competition Act, it sued all involved companies and claimed a SEK 1.2 billion[1] fine to be imposed.

It should be of interest for investors to know how these allegations of corporate illegalities impact their investments. With this awareness, they become more informed and are able to make decisions concerning their stock portfolios which are more socially efficient and market optimal. We have chosen to study this topic, not only because it is a phenomenon which has yet to be covered in Swedish academic literature, but also because of its importance to the general public and for legislators to recognize the impact of the implementation of the law. Furthermore, it is important for companies to understand the impact litigations and allegations of misconduct have on the value and reputation of the firm. As corporate social responsibility has received increased media attention in recent years, this knowledge could provide additional incentives for firms to abide to the rules and act socially optimal.

The purpose of this thesis is to determine the stock market's reaction to announcements of illegalities committed within Swedish companies. Several studies in the U.S. have examined the market's reactions to various types of corporate misconduct and research shows that stock prices usually drop following the announcement of allegations of misconduct. However, these studies have focused solely on the U.S. market and to both our and contacted legal experts' knowledge no similar study has been conducted on Swedish data. The reason can be derived from the difficulty in collecting appropriate data in Sweden as cases covering corporate illegalities are managed by several financial departments and legal authorities. The majority of the cases are not assembled in databases which have resulted in a manual collection of the data. Our data sample includes files dating up to 20 years back, which consequently has given us a unique data set.

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[1] Swedish Competition Authority

Our contribution to current research is to provide the first overview of how Swedish listed companies' share prices are affected by allegations of misconduct. We further categorize these companies into different sub-samples to investigate any possible differences in market reactions. An event study will be conducted in order to analyze stock price reactions and to further provide explanations to market reactions in Sweden, a set of interviews with legal and financial experts at various authorities have been conducted.

We define an event as:

> *The public announcement of corporate misconduct made by a financial department or*
> *legal authority that has resulted in a Swedish listed company being fined or sued.*

The key limitation with our thesis is the small sample size. Due to a set of necessary selection criteria, our original data set of several hundred observations has been reduced down to the 49 observations now included. A direct consequence is that it narrows possible angles to examine. Furthermore, the investigation of environmental crimes committed by companies has been left out as cases are locally assembled at the many prosecution offices all over Sweden.

This paper commences with Section 2 which describes previous research on stock price movements surrounding announcements of corporate illegalities. Section 3 presents the theoretical and legal framework on which the conclusions of the results are based. The hypotheses tested are formulated in Section 4, and Section 5 describes the methodology used to test the hypotheses. Section 6 presents the data sources, the data characteristics as well as the selection criteria. Results obtained are introduced in Section 7 and in Section 8 we discuss our results. Concluding remarks and areas for future research are lastly presented in Section 9.

2. Previous research

Previous research covers a wide range of criminal activities, and focus lies on the direct impact that the announcement of misconduct has on stock returns.

Karpoff and Lott (1993) conduct a study over 132 observations where companies had been alleged and convicted for corporate fraud between 1978 and 1987 with data taken from the Wall Street Journal (WSJ). Their findings show that there is a statistically significant decrease in firm value of 1.58% over the announcement period. The actual fines imposed on the company were found to only account for 1.4% of this wealth loss and a further 6.5% was explained by the value of civil penalties and court costs. The authors conclude that the remaining decrease in firm value is due to a loss in reputation of the firm, which they define as losses not explained by costs associated with the legal action against the firm. Hence, over 90% of the decrease in firm value is explained by the loss in reputation of the firm.

Feroz, Park and Pastena (1991) analyze the abnormal returns for 58 companies which are under investigation by the SEC between the years 1982 and 1989. Abnormal returns during three dates are analyzed: the disclosure of alleged reporting violations; the initiation of an investigation by SEC; and lastly, the final settlement. The findings are interesting as the market reacts negatively on the first two dates, where a negative abnormal return of 13% is found by the time of the announcement of reporting violations and when the SEC announces an investigation of the violation a 6% negative abnormal return is observed. Hence, the market reacts negatively even with the prior knowledge of the violation. No market reaction in the defendants' share values is observed for the SEC settlement date. The results clearly show incentives for managers to avoid actions that could result in litigations.

Kellogg (1984) performs a study over class action lawsuits between 1967 and 1976 where misrepresentations in a company's financial statements had occurred. By the disclosure of having misleading financial statements, the 48 firms in the sample experienced a decrease in share value of 3.9% at the day of the announcement. Statistically significant negative returns were also observed during the days following the announcement.

Bhagat, Bizjak and Coles (1998) examine stock price reactions to filings and settlements of lawsuits where the defendant is a corporation using data from the years 1981 to 1983. They find that it does not matter who files the plaint, be it a government entity, another company, or a private citizen, the defendant companies experience statistically and economically significant wealth losses. The overall decline in market value of the defendant firm is 0.97% on average with variations among who the plaintiff is. When a government entity files a plaint the wealth loss effects is usually larger (-1.73%) which Bhagat et al.

(1998) argue is because government entities have larger economic resources at hand for a legal battle. Additionally, Bhagat et al. (1998) find that certain types of litigations are more costly for defendants and result in greater wealth losses; environmental suits (-3.08%), product-liability suits (-1.46%), and violation of security laws (-2.71%). Finally, the authors find that the defendant wealth effect on a lawsuit filing announcement is significantly positively related to firm size which may be a result of larger firms usually having more bargaining power and thereby ability to allocate more resources to a legal dispute.

Murphy, Schrieves and Tibbs[2] conduct an extensive study by looking at 464 observations during the years 1982 to 1995. Overall, they find that allegations of corporate misconduct results in a statistically significant negative abnormal return of 1.64% during a 2-day event window. Five sub-samples are created and four of these show negative abnormal returns, however statistically significant only for the fraud and antitrust allegations. Results from allegations of bribery show rather contradictory results with wealth gains rather than losses. Allegations related to patent and copyright infringement indicate negative abnormal returns, however, the results proved not to be statistically significant.

Francis, Philbrick and Schipper (1994) study the share price effects where companies announced misleading financial statements and where shareholders in response had sued the company. Shareholders claimed they had purchased shares at inflated prices as managers had misled the market by presenting opportunistic information or by failing to disclose adverse information. The study comprise of 43 firms which had been sued between the years 1988 to 1992. The authors find negative market responses of 17.2%, on average, by the announcement of misleading financial statements.

Davidson and Worrell (1988) is one of the few studies providing contradictory findings of abnormal returns at the announcement of corporate illegalities presented in the WSJ. The authors investigate 96 companies engaged in illegal behavior in the 1970s and find no statistically significant market reaction to the announcement of SEC allegations published in the WSJ. They also study the reaction when the rumors began to spread in the market, most often on the day prior to the announcement in the WSJ, which is the underlying data source in many of the previous studies, and here they find statistically significant negative abnormal returns. The results indicate that investors react instantly on news and that there only is a one-time downward adjustment in the stock returns which is on the day news first reached the market.

Davidson, Worrell and Lee (1994) review previous research of the link between corporate social responsibility and financial performance. Out of 27 previous studies; 14 report a positive association and

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[2] Working paper, no date specified

only four find a negative relationship. The authors conclude that the use of inferior sampling techniques and statistical procedures is the reason for results differing across studies. Griffin, Grundfest and Perino (2004) also criticize the sample sets chosen by academics in the past. They argue that the majority of the litigations investigated are derived from SEC and that the data originates from the 1980s, prior to the Private Securities Litigation Reform Act of 1995 which employed more rigorous surveillance of corporate misconduct. Griffin et al. (2004) claim that the homogenous approach results in a selection bias and consequently fails to make the results and conclusions valid for the entire population.

Miller (2006) supports Davidson and Worrell's (1988) argument that the optimal day to use as the event date is when news begins to spread in the market. Using a sample of 263 firms, Miller (2006) observes that the press published information regarding the corporate illegality prior to the firm's or SEC's announcement for 75 of these firms. The press proved to fulfill a role as information intermediary providing new and original information. Miller (2006) denotes this concept "watchdog journalism" and argues for its importance because it provides information to the market that serves as the starting point for SEC filings or investigation processes that later may result in a lawsuit.

3. Theoretical and legal framework

3.1. Underlying theories

The main underlying theories in past event studies are the efficiency market hypothesis and the costly information theory. These theories consider the efficiency of information transfers in the market and the associated stock price movements.

3.1.1. Efficiency market hypothesis

The efficiency market hypothesis (EMH) states that financial markets are informational efficient; that is, prices on traded instruments reflect all information known to investors. As a result, it is impossible to consistently outperform the market, given that one has the same information as the market and with the exception of good luck. The EMH concept was first developed in the early 1900s, but was given little attention up until the 1950s and 1960s. When Fama (1970) published a review of the theory and provided evidence for the hypothesis, the theory became widely accepted. EMH states that investors are rational and value, on average, newly acquired information correctly.

Fama (1970) presents three forms of efficiency: weak, semi-strong and strong. In the weak form of market efficiency, prices are based solely on information from historical data such as stock prices and trading volumes. The weak form indicates that it is not possible to earn abnormal returns by engaging in trading strategies. The semi-strong efficiency level includes, in addition to historical data, all publicly available information such as data regarding a company's financials, management, and activities. The strong form of market efficiency includes, in addition to all publicly available information, information available only to some investors, for example insiders. Jensen (1978) claims that few scholars have treated the strong form of the EMH as anything else than a logical completion of the set of possible forms of the EMH.

The semi-strong form of EMH represents the information availability in the market for our study; the announcement of allegations of fraud becomes publicly available information and the new unexpected information should immediately be incorporated and reflected in the stock price.

3.1.2. Costly information theory

The costly information theory (CIT) asserts a different approach to stock price movements in comparison to EMH. Due to costs in acquiring information, all market participants will for various reasons not hold the same amount of information. The concept developed initially by Grossman (1976) and further by Grossman and Stiglitz (1980), is based on the presence of two types of investors; the informed and the

uniformed. The informed investors have acquired information which consequently will be incorporated in the stock price. The uninformed investors do not invest in acquiring information; they rely on how the informed investors have valued available information and base their belief of future prices by observing current prices.

3.2. Legal framework

The legal system in Sweden differs from the legislation in the U.S., where previous research has been conducted. In order to understand the legal implications of corporate illegalities in the Swedish market we present academic research covering these legal differences together with information derived from interviews with legal and financial experts[3] in Sweden.

The difference in the legal systems among countries was originally studied by David and Brierley in 1985, and La Porta, Lopez-de-Silanes, Schleifer and Vishny (1998) summarize their findings and examine the laws protecting investors. Commercial laws come from two broad traditions: common law which the U.S. legal system is based upon; and civil law, derived from the Roman law, and which the Scandinavian legal system is part of. Common-law countries give outside investors, shareholders and creditors, the greatest protection, while civil-law countries such as the Scandinavian countries have weaker protection but greater law enforcement.

The reason for greater investor protection in common-law countries is that rulings are based on the company's intentions of committing a crime (La Porta, Lopez-de-Silanes, Schleifer and Vishny (2000)) and where fines may triple in size if it is found that the company intended to engage in misconduct (Nerep, April 22, 2008). Costs associated with legal advisors, damages claims and settlements are generally significantly higher in the U.S. An example of the large costs associated to corporate misconduct in the U.S. is Microsoft's settlement costs amounting to USD 1 billion in the early 2000s (Nerep (April 22, 2008)). Rulings in civil-law countries are on the other hand are solely based on legislatures and judges should not go beyond the statutes and apply fairness evaluations (La Porta et al. (2000)). Coffee (2005) give two explanations for the reason to the greater amount of corporate scandals in the U.S. and why the sample set available of corporate illegalities on the European market is smaller: i) tax laws in the U.S. have produced a shift towards equity compensation for managers and their incentives to maximize share value by manipulating earnings; and ii) greater presence of controlling shareholder groups in European corporations enables them to replace managers engaged in opportunistic earnings management, providing less incentives for managers to commit illegalities.

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[3] Interviews: de Geer (April 11, 2008), Nerep (April 22, 2008), Palmgren (April 10, 2008) and Rydberg (April 11, 2008)

3.2.1. Swedish legislators

There are five main legislators active in the Swedish market and from which our data sample is collected. In order to provide a deeper discussion for the formulation of our hypotheses we provide an overview of these legislators with the type of crimes they investigate and penalize. Interviews with the legal and financial experts at each authority together with information derived from the authorities' websites conduct the basis for this overview.

The Swedish Financial Supervisory Authority (FI) regulates companies active on the financial market and is responsible for ensuring efficiency and stability in the financial system. FI deals with illegalities such as accounting fraud, failure to handle price sensitive information correctly, and failure to disclose accurate or sufficient information to the market. When companies fail to follow the legislation, FI either gives warnings or charge fines depending on the gravity of the crime. Only companies are fined by FI, in cases where an individual has been involved in illegalities, the information is sent to the Swedish National Economic Crimes Bureau (see below) for further investigation. FI does not reveal the identity of the individual; it becomes public first when EBM files a plaint with the District Court (de Geer (April 11, 2008) and Rydberg (April 11, 2008)).

The Swedish stock exchanges[4] have disciplinary committees which monitor violations against the law or their regulations. If a member fails to comply with the legislation or the exchange's regulations, the case is taken to the disciplinary committee where a decision of the company's guilt is made. The disciplinary committees provide warnings or impose fines depending on the violation. For severe violations against the regulations of the OMX Nordic Exchange, the Board of Directors of the Exchange decides whether the violation is of such gravity that the company should be delisted.

The Swedish Competition Authority (KKV) is a state authority which has as main function to safeguard and increase competition in the Swedish market. The legislation constitutes of the Competition Act which serves to make sure that markets are well functioning. In situations where KKV finds that companies are involved in actions that limit the competitive environment, a lawsuit is filed together with a damage claim with the District Court.

The Swedish National Economic Crimes Bureau (EBM) is also a state authority investigating accounting violations, bankruptcy errands, tax frauds, and infringements of the Insider Penal Act. The discovery of a conducted illegality results in a lawsuit filed with the District Court. For our analysis we have focused on crimes related to the Insider Penal Act. Cases covering other violations are largely attributable to

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[4] OMX Nordic Exchange Stockholm, First North Stockholm, Aktietorget

non-public firms and individuals, however, listed firms accused for these violations should be detected through the data set originating from FI.

The Department against Corruption, established in 2003 under the Swedish Prosecution Authority, specializes in investigating all bribe and corruption-related crime. As for KKV and EBM, the department files a lawsuit with the District Court and awaits trial in order to receive a verdict from the court.

3.2.2. Conviction process

As touched upon above, there are two conviction processes for companies alleged with misconduct in Sweden; being fined directly or sued and face trial in court. *Figure 1* provides an overview of these two processes. Attorneys at EBM and the Department of Corruption have indicated the difficulty in suing companies and receiving a verdict of convict in court. It has lead to that crimes committed within a company are often vouched for by individuals at the company, hence the individual is the one being sued and facing trial in court (Palmgren (April 10, 2008) and Rydberg (April 11, 2008)).

Figure 1. Illustration of the conviction process in Sweden applicable to our study
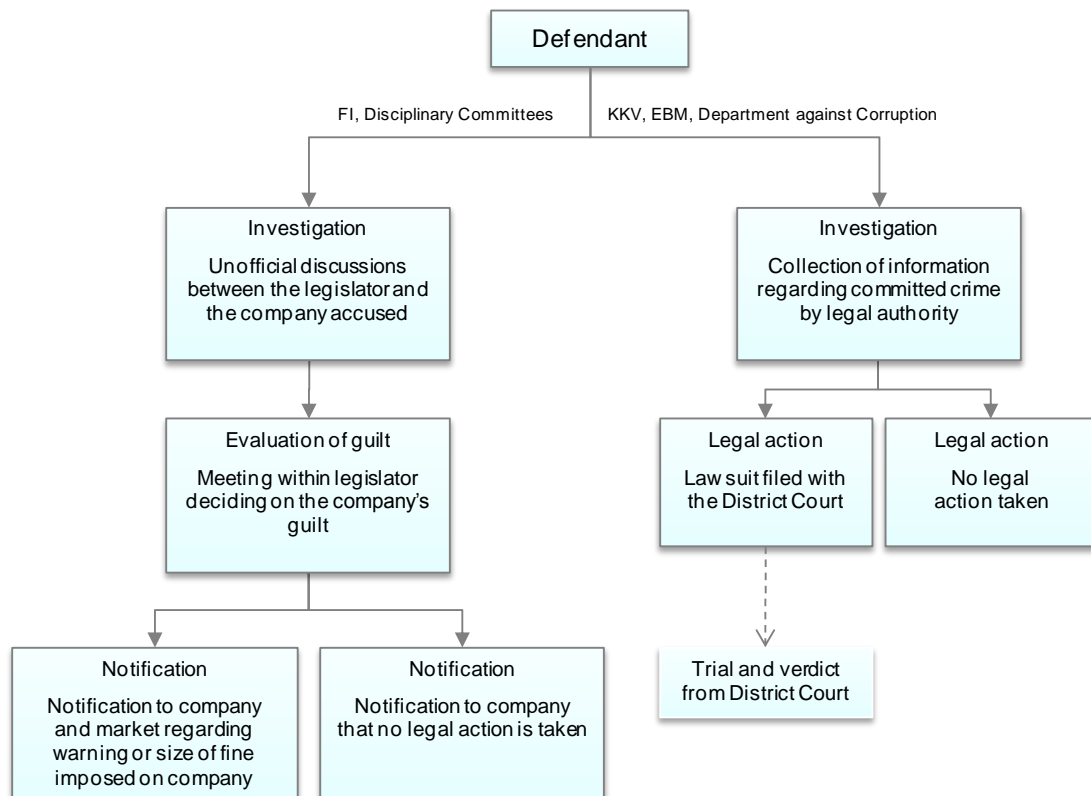
4. Hypotheses

In this section we present the hypotheses tested in our study. Each hypothesis is presented with a discussion regarding our expectations of the outcome which are based on past research, theoretical framework and the legal setting in Sweden.

4.1. Hypothesis 1

The announcement of a committed corporate illegality should impact the value of the company's stock in accordance with valuation theory, as the related cost for the company, let it be a fine or cost associated to the legal battle in court, affects the cash flows. The market should react instantly to the news of the illegality as the EMH implies. In light of Karpoff and Lott's (1993) article regarding the significant loss in reputation when a company is associated with a corporate illegality, the market should react negatively on the news even though costs related to lawsuits and fines imposed are lower in Sweden. We therefore expect to see a negative market reaction to the announcement of corporate illegalities; however, we do not expect to observe as substantial negative results as the U.S. studies present. We formulate the following hypothesis when examining our entire sample:

Hypothesis 1: Announcements of corporate illegalities will, on average, result in negative abnormal stock returns.

4.2. Hypothesis 2

After testing for abnormal returns for our entire sample, we want to test differences in the market reaction if a company is sued and will face trial or if it is fined directly.

If a company is imposed a fine, the payment is definitive and there is no uncertainty regarding the payment or the company's guilt. On the contrary, if a company is sued, there is uncertainty whether the company will be sentenced a verdict of convict or acquittal by the court. The market should however react instantly on the news, judge the company's guilt and adjust its valuation of the company.

When examining the companies being sued in our sample, they all are sued for violations of the Competition Act by KKV which claims significant compensation for the violations in contrast to the fines imposed by the authorities fining companies directly. Being discovered of violating the Competition Act not only results in a lawsuit but also a termination of the company's exploitation of its customers which should result in reduced future income, a reduction in the customer base, as well as badwill for the company.

Given these circumstances we believe that companies being sued for corporate illegalities should experiences greater negative abnormal returns by the time of the announcement than companies being fined. Our hypothesis is:

Hypothesis 2: A company which is sued for corporate illegalities will experience greater negative abnormal stock returns, on average, than if a company is fined directly.

4.3. Hypothesis 3

We further want to test the market reaction when the defendant is an individual. The individual should hold a prominent position within the company such as CEO, vice CEO or be a member of the Board of Directors; people who are highly associated with the company and decide over the company's activities.

The implications of a lawsuit against an individual within a firm should differ from when the company itself is accused as legal costs and potential damage claims are bestowed solely upon the individual itself and not the company. Legal experts assert that when individuals are accused, they usually leave the firm prior to the announcement of the lawsuit which allows the company to distance itself from the illegality. However, Karpoff and Lott (1993) claim that the greatest wealth loss in market value relates to deterioration in the reputation of the firm and since individuals in our sample are strongly associated with the firm; we expect crimes committed by them to impact the firm value negatively. Our hypothesis formulation is:

Hypothesis 3: The announcement of a lawsuit filed against an individual holding a prominent position within a company, will result in negative abnormal stock returns, on average, for that company.

4.4. Hypothesis 4

The fourth hypothesis we test is how the market's reaction to allegations of illegal behavior differ among sectors. Based on the companies in our sample, three sectors are defined; industrial, finance and IT. We expect negative abnormal returns for stocks in all three sectors based on the discussion in *Hypothesis 1*; however, we believe that the amplitude of the market reaction will differ across sectors.

Companies in the finance sector are mainly services companies without a core manufacturing activity and rely heavily on the reputation of the firm when conducting business. As Karpoff and Lott (1993) have shown; loss in reputation accounts for the greatest wealth loss when corporate illegalities are disclosed. The financial legislators should account for the majority of the accusations towards financial firms, as financial institutions may have incentives to manipulate and try to boost profits via their earnings statements and not by trying to control the competitive environment. Past research show that misleading

financial statements result in great negative abnormal returns in the U.S. market. However, the limited size in penalties imposed by financial legislators in the Swedish market should indicate less severe negative abnormal returns in our study.

Companies in the IT sector provide both physical products and services to customers. The sector has shown great uncertainty in the past and according to an article published in The Economist (September 22, 2005), the market will continue to show weak investor confidence and high operational volatility. Investors should already have taken the large uncertainty into account when investing in IT stocks and the negative abnormal stock returns by the announcement of a committed crime should be relatively small.

Industrial companies, on the other hand, have a core manufacturing process and supply customers with physical goods and not services. If we assume that the reason a company engages in illegal behavior is to increase revenues and profits, industrial companies would rather try to increase market shares and revenues from the existing customer base than to manipulate financial statements. Hence, we believe that the authority most likely to accuse industrial companies for illegalities is KKV. The penalty for violations against the Competition Act is significantly higher than the penalty financial legislators impose. Consequently, the market should react more negatively when industrial firms are indicted compared to firms in the other two sectors. For the sector analysis, we thus formulate the following hypothesis:

Hypothesis 4: Companies in the industrial sector will show the largest negative abnormal returns, on average, by the announcement of corporate illegalities, followed by companies in the finance sector. The smallest negative abnormal returns, on average, will be observed for companies in the IT sector.

5. Methodology

A preferred choice of method used to analyze stock price reactions attributable to certain *firm-specific* events is the event study methodology (MacKinlay (1997)). In this section we present an overview of the method and the work of Brown and Warner (1985), MacKinlay (1997), Bhagat and Romano (2002a), and Murphy et al., will serve as the main sources of reference. The method was originally developed to test market efficiency; that publicly available information instantly is incorporated in the stock price so no investor can earn abnormal profits. Since its development, the method has become particularly popular within corporate and securities law studies (Bhagat and Romano (2002a) and (2002b)) as it is able to identify and analyze the effect certain unique events has on the company's stock performance.

Once the event has been indentified, the approach to follow is to first measure the actual performance during the defined event period and to estimate the "normal" performance in absence of the event based on historical information of the company's stock performance. Thereafter, any abnormal returns that might arise due to the event are calculated.

5.1. Measuring event performance

The event window is defined as the day(s) of the announcement. An announcement normally occurs during one day, however, there is a possibility that the announcement was made after the closing of the market, so the event window should also include the day after the announcement to be sure to capture the effects (MacKinlay (1997)). Due to the possibility of market leakages prior to the official announcement (MacKinlay (1997) and Bhagat and Romano (2002a)), and as new information will result in instant adjustments in the stock price, the event window can be defined to be larger so it captures the market's knowledge of the event (MacKinlay (1997) and Murphy et al.).

Based on the procedure used by Murphy et al., the length of the event window will vary in our analysis as it allows us to measure differences in the abnormal returns in various time lengths. The event window lengths for which abnormal returns will be calculated for are 2-day ($\tau = 0$ and $\tau = +1$ relative to the announcement date τ), 3-day ($-1 \leq \tau \leq +1$), 7-day ($-3 \leq \tau \leq +3$), and 21-day ($-10 \leq \tau \leq +10$). After the event and event window have been defined, the stock returns during this time period are examined. Daily closing data is used to capture the effects of the announcement during the day.

5.2. Measuring normal performance

To enable an evaluation of a stock's abnormal performance during the event, the stock's expected "normal" performance *in absence* of the event must be measured. Firstly, an estimation window is

defined to allow for an estimation of the expected normal performance in absence of the event. The estimation window should end prior to the event window to prevent the event from influencing the parameter estimates used to calculate normal performance (MacKinlay (1997)). The length of the estimation window used varies among researchers: MacKinlay (1997) suggests a minimum length of 120 days; Bhagat and Romano (2002a) suggests a window between 100 and 200 days; and Murphy et al. use 250 days in their study. Based on these recommendations and previous studies within the area, the estimation window in our study is set to 180 days, covering the days -190 to -11 relative the announcement date. The length is chosen to enable multiple events within the same company to be included in the study, adding observations which will enhance the power of the tests.

Secondly, the model used to estimate the normal performance needs to be chosen. There are both statistical and economic models to use for measuring the expected normal performance. Statistical models follow statistical assumptions regarding behavior of assets returns and do not depend on any specific economic arguments. Economic models, on the other hand, are based on assumptions regarding investor behavior, where the most well-known models are the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). Statistical models are to prefer for event study analysis (Brown and Warner (1985)) as the economic models add little explanatory power. MacKinlay (1997) suggests the use of the single index market model as it assumes that stock prices vary with a market index which reduces the variance of the overall abnormal returns related to pure market fluctuations.

The OMX Stockholm All Share index will serve as the market index as it corresponds to the different companies included in our sample. The model for estimating the firm-specific parameters used to estimate the normal performance during the event window looks as follows:

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

$$E(e_{it}) = 0 \quad var(e_{it}) = \sigma_{e_i}^2$$

Where;

R_{it} is the return for security *i* at time *t*

a_i is the intercept in our regression analysis, a firm-specific factor

b_i is the amount that the security moves together with market fluctuations, also a firm-specific factor

R_{mt} is the return for the OMX Stockholm All Share Index at time *t*

e_{it} is the error term, which is the difference between the actual value and the models estimated value

$E(e_{it})$ is the expected value of the error term

$var(e_{it})$ is the variance of the error term.

The firm-specific parameters are estimated by running an Ordinary Least Squares (OLS) regression over the estimation window where the company return is regressed against the market return. The linear specification of the model follows from the assumption of normality in stock returns (MacKinlay (1997)).

5.3. Measuring abnormal performance

When the above steps are completed, the abnormal performance is simply measured by subtracting the expected normal performance of the stock *in absence* of the event from the actual performance *during* the event. The abnormal return measures the estimated impact the firm-specific event has on the firm's share value. The abnormal performance for firm *i* on each day *t* in the event window is defined as:

$$AR_{it} = R_{it} - \left(\hat{a}_i + \hat{b}_i R_{mt}\right)$$

Where AR_i is the abnormal return of security *i*, R_{it} is the actual return for firm *i*, $\hat{a}$ and $\hat{b}$ are the estimated firm-specific parameters defined in the previous OLS regression, and R_{mt} is the actual market return in the event window. The abnormal return is the disturbance term of the market model, calculated on an out of sample basis (MacKinlay (1997)).

5.3.1. Calculation of cumulative abnormal return

Since the event windows in our study include multiple days, the abnormal return for each day in the event window needs to be aggregated over time to observe the full effect of the announcement. The aggregation of the abnormal returns provides us with the cumulative abnormal return. The cumulative abnormal return for each firm *i* is calculated as follows:

$$CAR_i = \sum_{t=r}^{s} AR_{it}$$

Where CAR_i is the cumulative abnormal return, and *r* and *s* indicate days relative to the event date which changes depending on the length of the event window. The cumulative abnormal return can intuitively be understood as the wealth change the investor faces by holding a given security over the announcement period, which is over the days included in the defined event window.

The calculated cumulative abnormal return above is aggregated over time only. An average cumulative abnormal return needs to be calculated in order to draw conclusions regarding abnormal returns originating from different events (MacKinlay (1997)). An average cumulative abnormal return allows us to make comparisons across securities in different groups and it is calculated as:

$$Average\ CAR = \frac{1}{N}\sum_{i=1}^{N} CAR_i$$

N is the number of securities in the sample tested and CAR_i is the cumulative abnormal return for a given security. This calculated average cumulative abnormal return will be the indicator of the overall change in the stock price following announcements of a corporate misconduct which results in a fine or lawsuit. We calculate the average cumulative abnormal return by running a regression of each firm-specific cumulative abnormal return, defined CAR_i above, with the assumption that the cumulative abnormal returns are normally distributed in line with the suggestions of Campbell, Lo and MacKinlay (1997). This enables the use of the student's t test when sample sizes are too small to apply the central limit theorem. To prevent heteroscedasticity and autocorrelation in the standard errors to influence the results, we use robust standard errors.

The hypotheses defined in Section 4 will be tested by using the following null and alternative hypotheses:

$$H_0: Average\ CAR = 0$$

$$H_1: Average\ CAR \neq 0$$

In the case where we investigate if there is a difference in the cumulative abnormal returns between the two sub-samples we will further test if this difference is statistically significant. We use the two-sample mean comparison test for independent sample, and compute the test statistic which follows the student's t distribution and is defined as:

$$t_{df} = \frac{(\bar{x}_i - \bar{x}_j) - (\mu_i - \mu_j)}{s_{(\bar{x}_i - \bar{x}_j)}}$$

Where;

t	is the test statistic
df	is the degrees of freedom
$\bar{x}$	is the sample mean for each sub-sample
μ	is the population mean of each sub-sample and

$s_{(\bar{x}_i - \bar{x}_j)}$ is the weighted standard deviation of the sub-sample's standard deviations.

Since the null hypotheses used tests if the average cumulative abnormal return is equal to zero, the last parenthesis in the numerator will be equal to zero.

Due the difference in sample sizes and the variation of the sample mean, we use the Satterthwaite's approximation of the standard deviation which takes into account this difference in sub-sample variances together with different sample sizes.

The null and alternative hypotheses used for testing the sample mean differences are defined:

$$H_0: \mu_i - \mu_j = 0$$

$$H_1: \mu_i - \mu_j \neq 0$$

In addition to testing if the average cumulative abnormal return differs between sub-samples, we further test *how* the average cumulative abnormal returns differ between the sub-samples. The null and alternative hypotheses for this last test are:

$$H_0: \mu_i - \mu_j = 0$$

$$H_1: \mu_i - \mu_j > 0$$

The null hypothesis will be rejected based on the test statistic's significance at the 5% level for all tests conducted, which is the significance level most commonly used.

6. Data characteristics

This section will provide an overview of the characteristics of our data set and how we have selected the observations from the legislators and authorities in Sweden (see *Table A* in *Appendix I* for all data sources).

6.1.   Selection criteria

We have chosen a set of criterion for our data set in order to get an appropriate sample of observations. Below is a presentation of selection criteria for our data set together with an explanation for the reason they have been chosen.

  i. The company should be listed on a major Swedish stock exchange; OMX Nordic Exchange Stockholm, First North Stockholm or Aktietorget

  ii. A company or individual should be the defendant party

  iii. The individual has to hold a prominent position within the company: CEO, vice CEO, or a member of the Board of Directors

  iv. If an individual is the defendant, the crime has to be committed within the company where the individual works

The reason for only looking at listed companies in the major Swedish stock exchanges is that stocks are liquid and information flows easily between the market participants. Investigating only defendant parties is a result of penalties being imposed on the defendant party. By looking at individuals with prominent positions conducting illegalities within its own company enables us to select companies that have had its name defamed by figuring in a crime investigation.

Some circumstances have prevented the use of an observation selected from the above criteria:

  i. The illegal action was of such a severe kind which resulted in a delisting of the stock

  ii. The company only received a warning for the behavior

  iii. The company went bankrupt or was delisted in connection with the time of the crime

  iv. The company's stock was not listed during the appropriate time frame to conduct an event study analysis

The trading in a company's stock will cease in case of delisting or bankruptcy, hence the exclusion of these observations. Further, only receiving a warning does not involve a monetary payout and the future cash flows are unaffected. The market may still react to warnings imposed but studying such effects is out of the scope of this thesis.

6.2. Collection of data

The procedure to collect data has differed among the authorities. EBM and the Department against Corruption have no database over investigated allegations of misconduct. We have therefore been required to manually go through each filed lawsuit or verdict from court in order to; firstly, examine the position held by the individual sued; secondly, investigate whether the crime was committed within the own company, and lastly, ensure that the company was listed during the appropriate time frame for us to be able to include the observation. Out of hundreds of lawsuits, seven observations from EBM are included in our sample and four observations from the Department against Corruption.

Compiling data from the other legislators and authorities proved to be easier as the company itself was the defendant and access to databases was provided through their websites. Four observations from FI are included in our data set, 25 from the disciplinary committees including the Board of Directors at the OMX Nordic Exchange, and nine from KKV. In total, our data set comprises of 49 observations and each company's stock return has been collected through DataStream. For a complete list of included observations, see *Appendix II*.

The criticism of inferior sampling techniques and the homogenous approach in selection data, discussed by both Davidson et al (1994) and Griffin et al. (2004) in Section 2, can not be said to be applicable to our data set as we have used multiple sources to compile the set of observations.

6.2.1. Choosing the event date

The vast majority of the studies made in the U.S. which were described in the past research section, have chosen event dates based on the publication in the WSJ. Since Sweden does not have such a reliable media source which covers all companies in our sample, small cap firms rarely make it to the major newspapers, we have chosen to not look at potential rumors in Swedish media. The event dates are instead based on the date of the first press release regarding the accusation and the fine imposed, or the date when the lawsuit was filed with the District Court. These documents constitute the first official records of the accusation.

7. Empirical results

In this section, we present the empirical results obtained from the tests of our hypotheses. A discussion around these results is presented in Section 8.

7.1. Results Hypothesis 1

In *Hypothesis 1* we test the stock price effect that announcements of corporate illegalities have. All 49 observations are included in the sample. The hypothesis is:

Hypothesis 1: Announcements of corporate illegalities will, on average, result in negative abnormal stock returns.

Table 1. Average cumulative abnormal returns for full sample

Event window	2-day		3-day		7-day		21-day		No of obs
	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	
Total sample	0.0049499	0.410	0.0086907	0.213	0.0024669	0.821	0.0252343	0.138	49

Table 1 presents the results for *Hypothesis 1* over all four event windows, providing the average cumulative abnormal returns and the associated probability value of the test. The observed abnormal returns are all positive, ranging between 0.25% and 0.87% over the event windows, with the highest stock price reactions observed over the 3-day event window and smallest reactions over the 7-day and 21-day event windows. None of the coefficients are statistically significant; hence, we cannot reject the null hypothesis that the cumulative abnormal returns are different from zero.

Graph 1. Aggregated abnormal returns for each day in the event window - total sample
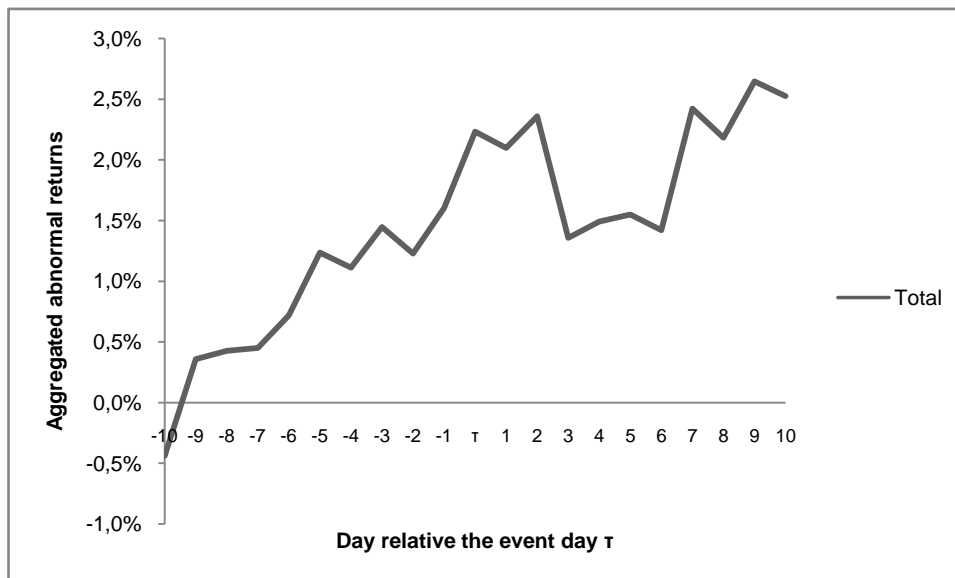
Graph 1 illustrates the aggregated abnormal return over each day in the event window. The graph demonstrates that the abnormal return is actually positive and over the 21-days observed, we only observe a large drop in the share price on the third day following the event. Although this decline implies that the market reacts negatively to the announcement, the cumulative abnormal return remains positive for each day in the event window, which is contradictory to our expectations.

7.2. Results Hypothesis 2

For *Hypothesis 2* we exclude observations relating to allegations against individuals and only examine companies. We test for the market reaction when the company is sued and faces trial and when the company is fined directly. The hypothesis is:

Hypothesis 2: A company which is sued for corporate illegalities will experience greater negative abnormal stock returns, on average, than if a company is fined directly.

Table 2. Average cumulative abnormal returns for sub-samples "Fined" and "Sued"

Event window	2-day		3-day		7-day		21-day		No of obs
	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	
Fined	0.0088032	0.342	0.0154531	0.147	0.0158125	0.357	0.0594487	0.012	29
Sued	-0.0139127	0.020	-0.0186732	0.081	-0.0184071	0.132	-0.0276722	0.310	9

Table 2 presents the results from testing *Hypothesis 2*. We observe positive abnormal returns for companies being fined across all event windows. Results are statistically significant at the 5% level only for the 21-day event window, where the average cumulative abnormal return is 5.94%, the highest value observed across the event windows. For the 21-day event window we can reject the null hypothesis of average cumulative abnormal returns equal to zero. Results differ considerably for companies being sued and facing trial in court; all coefficients show negative abnormal returns, statistically significant at the 5% level for the 2-day event window (-1.39%). We thus have enough evidence to reject the null hypothesis that the average cumulative abnormal return is zero over the 2-day event window.

Graph 2. Aggregated abnormal returns for each day in the event window – samples for "Sued" and "Fined"
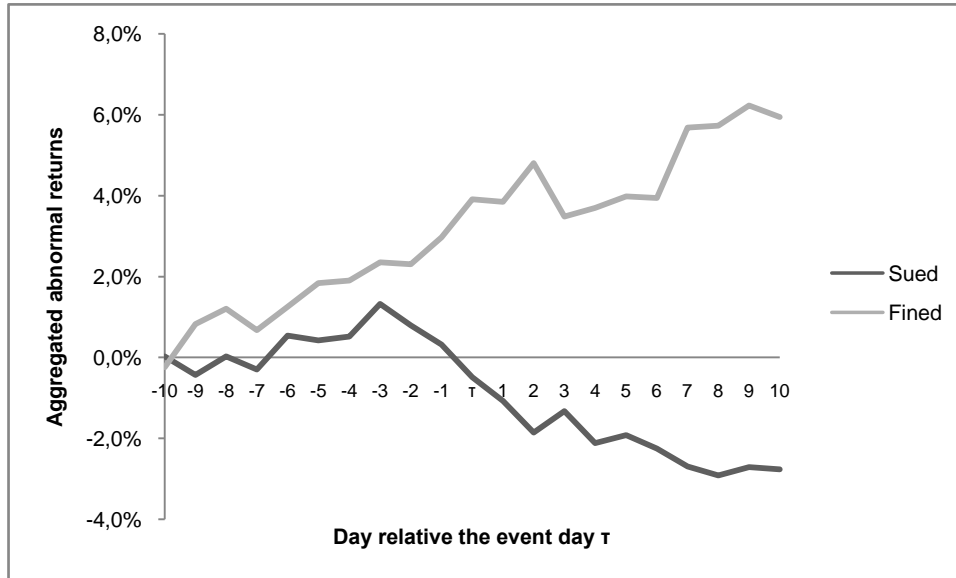
Graph 2 illustrates the aggregated abnormal return for companies being sued and fined, respectively. The graphs clearly explain the difference in market reactions depending on the conviction process faced by the company being alleged with corporate misconduct. For companies facing a lawsuit, the abnormal return is continuously negative from the third day before the announcement and the aggregated abnormal return remains negative after the announcement of the illegality. The aggregated abnormal return for companies being fined directly has the opposite appearance, the aggregated abnormal return is positive throughout the 21-day event window. Only a small drop is observed in the third day following the announcement, indicating a minor market reaction.

These results above indicate that the market reacts differently to allegations depending on the conviction process; positively for the companies being fined and negatively for firms being sued. We further test the difference between the two sub-samples in order to see if the difference in the average cumulative abnormal returns is statistically significant.

Table 3 presents the results from the two-sample mean test for the fined and sued samples. It illustrates the means and standard deviations for each sub-sample, the combined sample as well as the difference between the samples. The probability values are presented for the tests of sample means being different from zero as well as the probability of the mean for the Fined sample being larger than the Sued sample. The result for there being a difference between the means in the two samples is statistically significant at the 5% level across all event windows except for the 7-day window. Results are significant enough for us

to reject the null hypothesis of average cumulative abnormal returns equal to zero and there is evidence for a difference in the means between the samples.

Table 3. Two-sample mean comparison test for the independent samples "Fined" and "Sued"

Event window	2-day		3-day		7-day		21-day		No of obs
	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev	
Fined	0.00880	0.04814	0.01545	0.05488	0.01581	0.01658	0.05945	0.02181	29
Sued	-0.01391	0.01362	-0.01867	0.02642	-0.01841	0.01034	-0.02767	0.02405	9
Combined	0.00342	0.00705	0.00737	0.00835	0.00771	0.01303	0.03881	0.01848	38
Difference (F-S)	0.02272	0.01003	0.03413	0.01347	0.03422	0.01954	0.08712	0.03247	
Pr(|T| > |t|)	0.0296		0.0170		0.0885		0.0135		
Pr(T > t)	0.0148		0.0085		0.0443		0.0067		

The results for the test of a positive difference between the Fined and Sued samples are statistically significant at the 1% level for the 3-day and 21-day event windows, and at the 5% level for the other two event windows. Hence, we can reject the null hypothesis of a difference in average cumulative abnormal returns equal to zero. The significance in the results supports the argument that investors reacts more negatively to announcements of corporate misconduct when the company faces a lawsuit than being imposed a fine, which is in line with our expectations. We could however, as stated above, not conclude that the market reaction was negative for firms being imposed a fine.

7.3.   Results Hypothesis 3

As opposed to *Hypothesis 2*, we further aim to test the market reaction of lawsuits against individuals. Our hypothesis is:

Hypothesis 3: The announcement of a lawsuit filed against an individual holding a prominent position within a company, will result in negative abnormal stock returns, on average, for that company.

Table 4. Average cumulative abnormal returns for sub-sample "Individual"

Event window	2-day		3-day		7-day		21-day		No of obs
	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	
Individual	0.010224	0.321	0.0132514	0.187	-0.0156383	0.315	-0.0216805	0.540	11

The results of *Hypothesis 3* are presented in *Table 4*. Positive average cumulative abnormal returns are observed for the 2-day and 3-day event windows and negative average cumulative abnormal returns are observed for the two longer event windows. None of the results are statistically significant; we can thus conclude that the null hypothesis of average cumulative abnormal returns equal to zero cannot be rejected for individuals facing lawsuits. Due to the presence of both positive and negative abnormal returns, it is

difficult to interpret what the results might indicate regarding the market's reactions to the news of a lawsuit against an individual who holds a prominent position within the company.

Graph 3. Aggregated abnormal returns for each day in the event window – "Individuals" sample
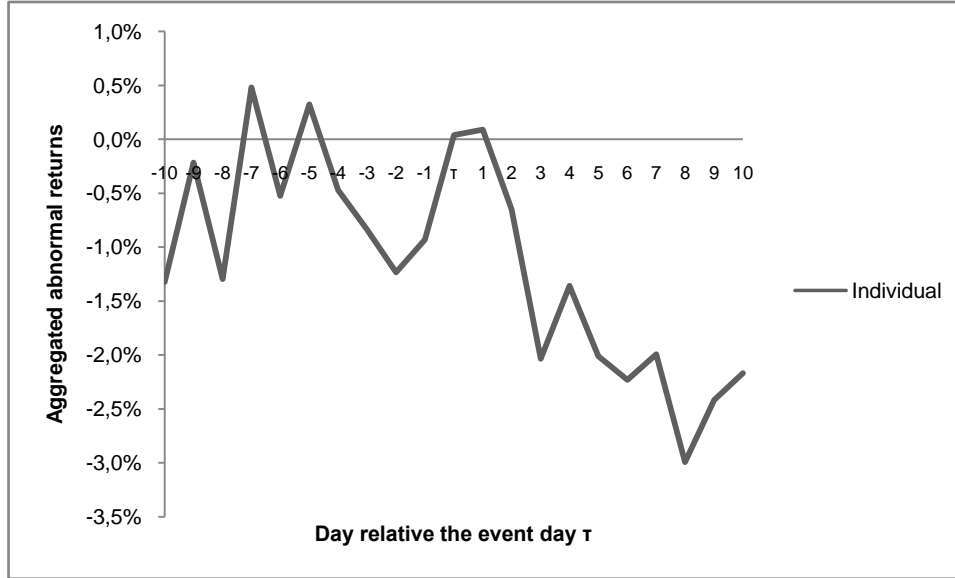
The aggregated abnormal return in the 21-day event window, presented in *Graph 3*, provides evidence for consecutive negative abnormal returns in the days following the announcement of a corporate illegality. The shorter event windows are too small to capture this negative abnormal return; hence, we can conclude that the market does not seem to react instantly to news of a lawsuit against an individual.

7.4. Results Hypothesis 4

Hypothesis 4 tests the market's reaction to allegations within different sectors namely industrials, finance, and IT. The hypothesis is:

Hypothesis 4: Companies in the industrial sector will show the largest negative abnormal returns by the announcement of corporate illegalities, followed by companies in the finance sector. The smallest negative abnormal returns will be observed for companies in the IT sector.

Table 5. Average cumulative abnormal returns for sector sub-samples

Event window	2-day		3-day		7-day		21-day		No of obs
	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	Avg CAR	p-value	
Industrials	-0.0071135	0.205	-0.004327	0.563	-0.0063384	0.520	0.02006	0.299	16
Finance	0.002785	0.821	0.0035293	0.774	0.0077249	0.662	-0.0079243	0.722	11
IT	0.0079506	0.583	0.0118616	0.504	0.0273957	0.371	0.0966882	0.107	9

Table 5 presents the results of testing *Hypothesis 4*. We observe negative average cumulative abnormal returns for the industrials sector, however not statistically significant at any level. With the exception of the negative average cumulative abnormal return for the finance sector in the 21-day event window, all coefficients for both the finance and IT sectors demonstrate positive abnormal returns; however, they are not statistically significant at any level. Given the absence of statistically significant results, we cannot reject the null hypothesis that the average cumulative abnormal returns are different from zero for any of the sectors.

Graph 4. Aggregated abnormal returns for each day in the event window – sector sample
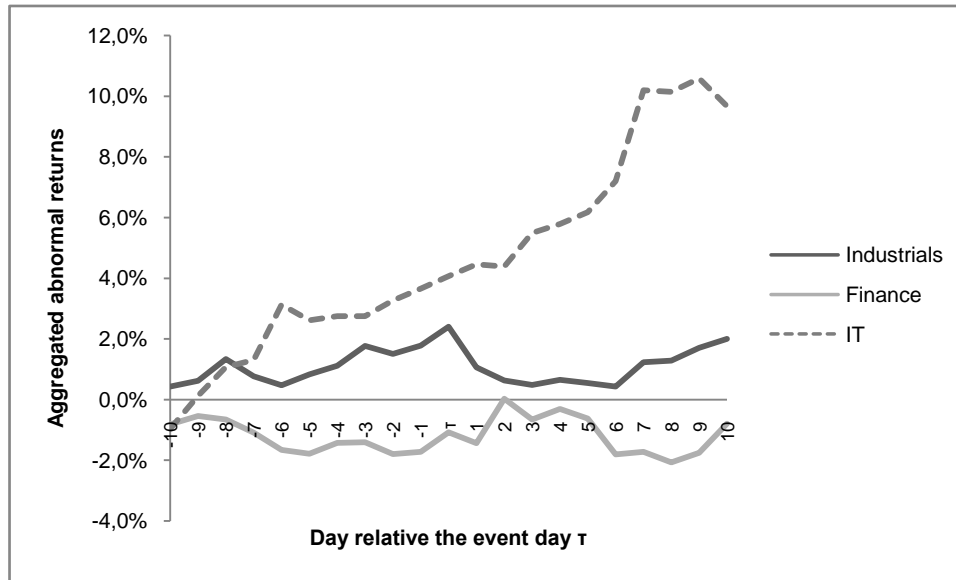
Graph 4 illustrates the aggregated abnormal returns for the industrials, finance, and IT sector. For the industrials sector it can be observed that there is a large drop in stock returns in the initial days following the announcement; however, abnormal stock returns tend to be positive from the sixth day following the announcement. In the finance sector the abnormal return is positive in the initial days following the event day. A drop in stock returns is only observed during the end of the 21-day event window which is long enough to capture the effects of the event, hence the negative average cumulative abnormal return for the test over the longest event window. We expected a lower effect on stock returns for companies in the IT sector and the graph illustrates that there are no large negative abnormal returns for any day in the event window. The aggregated abnormal returns increase continuously for each day in the event window and there is no evidence that the market reacts negatively to allegations of corporate misconduct in the IT sector.

8. Discussion

In this section we discuss the outcome of our results, their statistical validity and economical importance. We will firstly discuss the results from each hypothesis individually, and thereafter provide probable reasons for this outcome based on past research and the interviews we have conducted. At an initial overview, it is evident that the results for 3 of our 4 hypotheses turn out to be statistically insignificant, supporting the argument that announcements of corporate illegalities have little impact on the Swedish stock market, contradicting both our expectations and results from previous studies within the field.

In *Hypothesis 2* we receive results in line with our expectations. We observe that following a lawsuit by KKV, companies experience a negative return in their stock across all event windows, statistically significant over the 2-day event window. We believe the two main reasons behind this observation are:

i. The company will face reduced future cash flows due to costs associated with the legal dispute, legal advisors and high damages claims, and

ii. Future earnings will be lower since; (a) increased competition will bring prices and therefore revenues down, and (b) existing customers may switch to suppliers not involved in an illegality which will reduce the customer base

The negative abnormal returns indicate that lawsuits based on violations against the Competition Act are considered severe and that the market believes that KKV has enough resources to receive a convicting verdict in court along with sizeable damages claims. The results are in line with the findings of Bhagat et al. (1998) who find that government entities have greater resources for legal disputes which increases the effect of the stock market's reactions. There is an additional aspect to consider when interpreting the results from this test; the sample contains three firms involved in the "asphalt cartel" which had a record-breaking damages claim of SEK 1.2 billion. As the total number of observations amounts to nine firms in this test, the presence of the "asphalt cartel" firms may account for a large portion of this negative market reaction. However, since we receive statistically significant results it implies that the reaction is valid for the entire population of lawsuits against firms.

When testing the second part of *Hypothesis 2*; how the market reacts to announcements of corporate misconduct where companies are fined, we observed positive abnormal stock returns which were contradictory to our expectations. The results are insignificant in the shorter event windows; however for the 21-day event window we observe an average cumulative abnormal return of 5.94%, statistically significant at the 5% level. This is the largest abnormal return observed from all tests and it indicates along with the other positive abnormal returns across the event windows that the market does not react

negatively to announcements of corporate misconduct when fines are imposed. One of the reasons for the absence of a negative market reaction can be that fines imposed by the financial legislators normally are very low relative firms' market values. Fines often amount to less than SEK 1 million, which are low in comparison to damages claims for violations against the Competition Act which often exceed SEK 100 million. Given the small fines imposed, investors do not see any dramatic changes in the company's cash flows.

The implication of observing positive abnormal returns for fined companies suggests that FI and the disciplinary boards do not have the ability to affect companies economically by imposing fines. The positive abnormal returns can also be a result of a lower fine being imposed than what investors initially had expected, given that news of the illegality was spread in the market prior to the official disclosure. The reaction to the surprisingly lenient ruling consequently becomes positive as the market by the time of the knowledge of the illegality had degraded its value on the company. A deeper discussion on the implications of small fines is given below where comparisons to the U.S. market also are drawn.

In *Hypothesis 2* we also test for the difference in market reaction between companies being fined or sued. This last test provides us with statistically significant results supporting the statement that there is a difference in market reaction. We believe the reason for this difference in market reaction is that the consequences following a lawsuit go beyond the monetary penalty and impact the company's reputation and relationships with business partners. Karpoff and Lott (1993) discuss this particular aspect and conclude that the deterioration of reputation accounts for a majority of the wealth loss.

Hypothesis 3 tests the market reaction of allegations against individuals and the results gave both positive and negative outcomes. Since the results are insignificant and differ in sign, it indicates that the market does not react consistently to lawsuits against individuals. The company itself faces no costs related to a trial as costs for legal advisors and the potential damages claim are imposed on the individual. The company may back the individual in court; however, since the individual has likely left the company by the time of the lawsuit and consequently the trial, it would be surprising if the company paid for these costs. The costs imposed on the company would therefore be indirect by experiencing deterioration in reputation. Due to the insignificant results from this test, it is questionable how well the Swedish legislation tackles illegal behavior conducted within a firm when the defendant is an individual. As our legal experts have indicated, it is extremely difficult to receive a conviction when suing companies involved in economic- or corruption-related crime, hence the large amount of prosecutions against individuals. As the conviction of individuals does not affect the firm directly, no incentives are provided for the companies to always comply with the law.

In *Hypothesis 4* we compare market reactions between sectors and we observed differing results, however statistically insignificant. We note that abnormal returns in the industrials sector proved to be negative across all event windows which were in line with our expectations implying that the market reacts negatively to the announcement of corporate misconduct for industrial companies. Nine out of the 16 companies in this sector have been sued by KKV and as discussed above, lawsuits filed by KKV generated negative abnormal returns. Since there are a large number of lawsuits against the industrial companies, as expected, it explains the negative results obtained from the sector test. However, for the finance and IT sectors, we note slightly positive but statistically insignificant abnormal returns indicating that the market does not react negatively to announcements of illegalities in these sectors. The graph over the aggregated abnormal returns in the sector analysis (see *Graph 4* in the previous section) shows that the IT sector consistently experiences positive abnormal returns and the reason might be that investors already have taken much of the uncertainty into account when considering investing in the stock, and do not react negatively to announcements of the illegalities.

The mainly insignificant and positive results observed from the tests discussed above, consistent with the results observed when testing the whole sample in *Hypothesis 1*, indicate that there, on average, is a positive or nonexistent market reaction to announcements of corporate misconduct in Sweden. This is in line with findings from Davidson and Worrell (1988) and Davidson et al. (1994). However, since the majority of previous research observes negative market reactions by announcements of corporate illegalities, some questions arise regarding possible factors that can explain our differing results. Since the fundamental theories regarding stock valuation and the EMH apply to companies in both countries, we believe that the differing results primarily lie in distinctions in the legal frameworks and their application when companies are accused and fined for misconduct in comparison to the U.S.

We believe that the *size of fines* imposed by legislators constitutes the main reason for the different stock market reactions in Sweden in comparison with U.S. studies. Legislation in the U.S. allows for fines to triple in size based on the judge's fairness evaluation of a company's intentions when committing the crime and the lack of upper limits on fines offers greater investor protection. Swedish legislators, on the other hand, have upper limits on the fines they can impose but since this upper limit is very low relative firms' market values, the effect of imposing the fine is reduced. Only once has FI imposed the maximum fine amounting to SEK 50 million on a company, otherwise fines mostly amount to less than SEK 1 million. Given the almost non-existent market reaction in Sweden, it implies that penalties imposed do not make up for the potential profits the company earned by initially committing the crime.

Another reason for why our results differ is the *legal costs* associated with a future trial in court. U.S. companies experiences higher costs related to legal advisors, potential damages claims as well as the settlement. A clear example of this is the USD 1.2 billion settlement costs that Microsoft had to pay in the early 2000s. In Sweden, the defendant does not always face as high expenses for legal advisors or settlements; hence, this supports the reason to why we did not observe a noteworthy reaction when the defendant is an individual. Moreover, there is a structural change taking place in the application of the legislation where authorities will aim to be tougher on corporations involved in illegalities by directly filing a lawsuit against a company instead of its individuals. Furthermore, EBM and the Department of Corruption aim to increase the size of the damages claims imposed on companies convicted in court.

Another factor contributing to the differing results between the two markets are the *size of the companies* and the *power of the media*. Firms are smaller in our sample in comparison to firms used in U.S. studies which are mainly on the Forbes 500 list. Allegations against larger firms will result in greater media coverage over allegations and that news may transfer faster. The presence of several small cap firms in our sample may signify a slower information transfer and that news of allegations against the firm may not be covered in the media and reach out to investors as easily. For this reason there can be a post announcement drift in the stock returns where only some investors acquire the information, as the CIT implies, and that we have been unable to detect any abnormal returns during the event windows.

Finally, we believe that the *event date* chosen for our study also provides an explanation for the insignificance in the results. The majority of the research conducted in the U.S. uses the WSJ to track when the public first became aware of the allegation and use this as the event date. The lack of a reliable Swedish media source serving the "watchdog" role as defined by Miller (2006) complicates the identification of the specific date when rumors of the illegality reached the market. In addition to this, the poor documentation and availability of data in Swedish media consequently obliged us to go through the legal documents archived at each authority. These two factors made it difficult to track the exact date, on a consistent basis, of when the market became aware of the allegation prior to the official announcement through some form of information leakage. This is an important difference to U.S. studies which should be considered when evaluation the results. U.S. media provide more easily accessible information regarding allegations against firms and the date of the announcement can more easily be detected. However, since the WSJ only covers news regarding the large corporations, results are more exposed to potential biases, as Griffin et al. (2004) discussed. This bias is not present in our sample.

9. Conclusion

We have examined the market reactions to announcements of allegations of corporate misconduct in Swedish firms. Previous researches in the area find that companies in general experience a wealth loss when announcements of fraudulent activities within a company are publicized. We observe evidence supporting previous findings when firms are sued by KKV; the only legal authority that penalizes firms with substantial damage claims when companies violate the Competition Act. The impact that verdicts from KKV have on the company's overall wealth and reputation is definitely a force to consider before companies overstep their legal rights.

However, our other results advocate for a general trend of nonexistent market reactions in Sweden. From research and interviews, we conclude that the reasons for this observation is due to the fundamental structure of the legal system in Sweden where authorities primarily target individuals involved in the crime and not the companies directly. In the cases where a fine is imposed on the company itself, the size of the penalty is usually trivial in comparison to the market value of the firm. This is an indication to legislators that the implementation of their laws is weak and essentially ineffective. The poor market reaction also argues for the passivity of investors as their holdings in accused firms are generally unaffected and there is no genuine risk in maintaining the investment position.

Finally, we acknowledge that difficulties in identifying the exact event date when the announcement of misconduct is made public, in combination with collecting the data and the limited observations available for Sweden, restrict our study to a small sample of 49 observations which could possibly account for the insignificance in our results.

9.1. Further research

A structural change is currently taking place in the Swedish legal system which aims to enhance the implementation of the law. A greater amount of lawsuits should be filed against companies instead of individuals connected to the company, and the size of damages claims should increase. This would yield larger samples for future studies in the area and enable a more detailed analysis. A larger sample size would further provide the possibility to breakdown the sample even further and allow for comparisons of different crimes.

Moreover, society today focuses to a large extent on tackling some of the global environmental issues; thus, a study including environmental crimes would be of great interest for many institutions and individuals. Another possible research area is to extend the study to include observations from the Scandinavian countries as they are all based on a separate group of the civil law legislation and

conclusions can be drawn regarding differences in the implementation of the respective countries' laws and regulations. On a larger scope, one can look at legal disputes covered at the European Union level as cases ending up for trial there tend to generate great market interest and media coverage, but above all it exposes companies to immense costs associated to the legal dispute.

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Yngve Rydberg, prosecutor, Swedish National Economic Crimes Bureau (April 11, 2008)

Gerard de Geer, financial expert, Swedish National Economic Crimes Bureau (April 11, 2008)

Malin Palmgren, prosecutor, Swedish Competition Authority (April 10, 2008)

Erik Nerep, professor in law, Stockholm School of Economics (April 22, 2008)

Appendices

Appendix I

Data sources

Board of Directors of the OMX Nordic Exchange Stockholm

<http://omxnordicexchange.com/companiesandissuers/surveillance/surveillancestockholm/determinations/?contentId=12095>

[Date accessed: April 30, 2008]

First North Stockholm Disciplinary Committee

<http://omxnordicexchange.com/firstnorth/company_issuers_area/surveillance_sanctions/>

[Date accessed: April 30, 2008]

OMX Nordic Exchange Stockholm's Disciplinary Committee

<http://omxnordicexchange.com/companiesandissuers/surveillance/surveillancestockholm/determinations>

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Swedish Financial Supervisory Authority

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[Date accessed: April 30, 2008]

Swedish National Economic Crimes Bureau

Visit April 9, 2008 and April 11, 2008

Swedish Competition Authority, Department against Corruption

Visit April 10, 2008

Appendix II

Table A. List of selected observations for study

Company	Event date	Conviction Process	Defendant	Sector	Legislator
Finnveden Invest AB	1990-06-07	Fined	Company	Industrials	OMX Board of Directors
H&M AB	1994-10-05	Fined	Company	Other	OMX Disciplinary Committee
VBG Produkter AB	1995-03-07	Sued	Individual	Industrials	EBM
SEB AB	1996-01-16	Fined	Company	Finance	OMX Disciplinary Committee
Getinge Industrier AB	1996-07-11	Fined	Company	Other	OMX Disciplinary Committee
IRO AB	1996-07-11	Fined	Company	Industrials	OMX Disciplinary Committee
SAS AB	1996-10-30	Sued	Company	Industrials	KKV
Elekta AB	1999-04-12	Sued	Individual	Other	EBM
AGA Gas AB	1999-04-21	Sued	Company	Industrials	KKV
SAS AB	1999-11-12	Sued	Company	Industrials	KKV
Åhus Glass AB	2000-05-26	Sued	Individual	Other	EBM
Wilhelm Sonesson AB	2001-05-16	Fined	Company	Other	OMX Disciplinary Committee
FastPartner AB	2001-07-04	Fined	Company	Finance	OMX Disciplinary Committee
SAS AB	2002-02-21	Fined	Company	Industrials	OMX Disciplinary Committee
BioPhausiaAB	2002-07-02	Fined	Company	Other	OMX Disciplinary Committee
Enea Data AB	2002-07-02	Fined	Company	IT	OMX Disciplinary Committee
Feelgood Svenska AB	2002-07-02	Fined	Company	Other	OMX Disciplinary Committee
Elekta AB	2003-03-04	Fined	Company	Other	OMX Disciplinary Committee
NCC AB	2003-03-21	Sued	Company	Industrials	KKV
Peab AB	2003-03-21	Sued	Company	Industrials	KKV
Skanska Sverige AB	2003-03-21	Sued	Company	Industrials	KKV
Intellecta AB	2003-06-16	Fined	Company	Industrials	OMX Disciplinary Committee

Table A. List of selected observations for study continued

Company	Event date	Conviction Process	Defendant	Sector	Legislator
Bure Equity AB	2004-03-11	Sued	Individual	Finance	EBM
Bilia Personbilar AB	2004-03-16	Sued	Company	Other	KKV
Lundin Petroleum AB	2004-03-19	Fined	Company	Other	OMX Disciplinary Committee
Skandia AB	2004-09-02	Fined	Company	Finance	OMX Disciplinary Committee
Pricer AB	2004-10-29	Fined	Company	IT	OMX Disciplinary Committee
Handelsbanken AB	2004-11-15	Fined	Company	Finance	FI
SEB AB	2004-11-15	Fined	Company	Finance	FI
TeliaSonera AB	2004-12-21	Sued	Company	IT	KKV
Intentia AB	2005-02-17	Fined	Company	IT	OMX Disciplinary Committee
Karolin Machine Tool AB	2005-02-17	Fined	Company	Industrials	OMX Disciplinary Committee
Skandia AB	2005-09-06	Sued	Individual	Finance	Department against Corruption
TeliaSonera AB	2005-10-28	Sued	Company	IT	KKV
Feelgood Svenska AB	2005-11-01	Sued	Individual	Other	EBM
Fastighets AB Balder AB	2005-12-05	Fined	Company	Finance	OMX Disciplinary Committee
Note AB	2005-12-05	Fined	Company	IT	OMX Disciplinary Committee
Sigma AB	2006-04-07	Sued	Individual	IT	Department against Corruption
Wedins Skor AB	2006-05-17	Fined	Company	Other	OMX Disciplinary Committee
TeliaSonera AB	2006-05-31	Sued	Individual	IT	Department against Corruption
Skandia AB	2006-06-15	Sued	Individual	Finance	Department against Corruption
Studsvik AB	2006-12-14	Sued	Individual	Industrials	EBM
Handelsbanken AB	2007-02-01	Fined	Company	Finance	OMX Disciplinary Committee
Transcom AB	2007-05-22	Fined	Company	Industrials	FI
CTT AB	2007-07-11	Sued	Individual	Industrials	EBM
Carnegie A/S	2007-09-28	Fined	Company	Finance	FI
Midelfart Sonesson AB	2008-01-09	Fined	Company	Other	OMX Disciplinary Committee
SSAB Svenskt Stål AB	2008-01-09	Fined	Company	Industrials	OMX Disciplinary Committee
Digital Vision AB	2008-04-01	Fined	Company	IT	OMX Disciplinary Committee