Regulatory sanctions and their effects on the stock market

An analysis of the effects of Finansinspektionens sanctions on the sanctioned firms' stock price.

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Stockholm Business School
Bachelor's Degree Thesis 15 HE Credits
Subject: Business Administration
Fall semester 2021
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Acknowledgments:

I would like to express my gratitude towards Abalfazl Fareei as well as my opponents Andreas Törnblom and Simon Ramnö for their valuable feedback. I would also like to thank Clara Andrae and Linnea Tilly for helping me review my work. Finally, a special thanks to Morteza Ashouri at KPMGs' Risk and Compliance department for guidance and support during this project.

Abstract

This paper examines the effects of *Finansinspektions'* sanctions on the sanctioned companies' stock price.

Previous research shows significant abnormal returns in companies' stock prices when negative news are announced. In several studies, an overreaction is found, meaning a reaction larger than the monetary sanction imposed on the company. This is called a reputational loss, implying that a company's reputation worsens when it is sanctioned, leading to a loss of trust from the investors, and therefore a drop in the stock price. The previous research mostly concentrates on the announcement of criminal activity. This thesis focuses on the effects of the regulatory sanctions given out by *Finansinspektionen*, Sweden's main regulatory institution on the financial markets. The analysis is done on Nordic companies.

The method used is an event study to reveal abnormal returns after a sanction is announced and a regression analysis to analyse which factors affect these abnormal returns.

The analysis reveals significant abnormal returns for all the studied samples. For the total sample and companies sanctioned for market information deficiencies, the abnormal returns are limited to the day of the announcement and the next few days after. Financial companies sanctioned for not respecting the capital market regulations show stronger abnormal returns than the rest of the sample for up to a month after the announcement of the sanction.

The study finds a statistically significant overreaction for financial companies on the day of the announcement. This analysis indicates that larger fines lead to significantly stronger negative market reactions. Companies that have previously been sanctioned also elicit significantly larger stock market reactions.

This shows that companies can benefit their shareholders by implementing compliance programs to reduce the likelihood of sanctions.

1. Introduction

On the 19th of March 2020, *Finansinspektionen* sanctioned one of Sweden's largest banks, Swedbank, for insufficient money laundering prevention measures. The company was fined four billion SEK, the largest fine ever given out by the institution. This is a prime example of the cost that may occur when regulations are not followed adequately.

An increasing number of companies are implementing regulatory compliance programs. The objective is to avoid situations such as Swedbank, by staying up to date with the rules and regulations (Martinez, 2018). These programs can especially be important for companies in the financial industry, where the regulations have been getting increasingly more complex in the past years (Prasanna Gai, 2019).

In Sweden, the main regulatory institution is *Finansinspektionen*. *Finansinspektionen* gives out warnings and fines to companies that break the financial rules. They can even revoke the right of companies to provide financial services on the Swedish market. *Finansinspektionen* does not only investigate companies that commit crimes against their customers or investors, it is also in a continuous dialogue with different financial actors as a preventative measure. The institution's goal on the Swedish market is to ensure that the market participants work to prevent money laundering, terrorism financing, and promote financial stability. *Finansinspektionen* can sanction companies that do not adequately follow the rules in these regards. In these situations, *Finansinspektionen* announces the sanction publicly by publishing it on its website (Wendschlag, 2016).

Previous studies have shown that imposed sanctions for criminal behaviour can impact the stock price of a company (Liang-Mui Tay, 2016). This effect has at times been larger than what can be explained by the size of the fine and the legal fees (Jonathan M. Karpoff and John R. Lott, 1993). It has also been shown that regulatory sanctions can affect stock prices negatively, with the caveat that these effects were limited to cases where investors or customers were harmed (Armour, 2017).

The efficient market hypothesis states that the market takes all the available information into account when pricing an asset. If regulatory sanctions are deemed bad by the market, we should be able to observe an unexpected reaction in the company's stock price. By comparing the size of the reaction to the amount of the fine, we can examine whether the market places any extra negative on the sanction, beyond the size of the fine. This study aims to find out whether regulatory sanctions from *Finansinspektionen* impact a company's stock price negatively. Additionally, different variables are studied to determine if any predictors of the size of the market reaction can be found.

The examined data consists of the financial companies listed on the Nordic stock market (Sweden, Denmark, Finland, and Norway), that have received sanctions between 1999, when the first sanctions were given out by *Finansinspektionen*, and 2021.

An event study methodology is used to analyse the data, calculating abnormal returns for a period of thirty days after the sanction was announced, with the help of the market model.

Regression analysis is then performed to analyse which factors can be found to have an impact on the size of the market reaction. Finally, the difference between the size of the market reaction and the size of the fine (the "overreaction") is measured and tested for significance.

The analysis reveals significant Cumulative Average Abnormal Returns (CAARs) for all the studied samples. For the total sample and companies sanctioned for market information misbehaviour, the abnormal returns are limited to the day of the announcement and the day after. Financial companies sanctioned for not respecting the financial regulations show larger CAARs for up to a month after the announcement of the sanction.

The study finds a significant overreaction for financial companies, on the day of the announcement. The analysis also indicates that larger fines, as well as recidivism, lead to significantly stronger negative market reactions.

2. Literature review

Since Fama's article on the capital markets in 1970, the stock market is seen as efficient by most researchers. This means that all available information is more or less immediately reflected in the price of any given stock (Fama, 1970). This has led researchers to investigate the impact of the announcement of crimes and regulatory sanctions on the stock market.

2.1 Theoretical framework

2.1.1 The Efficient Market Hypothesis

The efficient market hypothesis states that stock prices always reflect all the information available. A price not in agreement with the available information would give rise to arbitrage opportunities, which, if exploited, would push the asset towards a price point where these opportunities would not exist. There are several different versions of the efficient market hypothesis. The weak version states that new information that is not publicly available is not reflected in stock prices. The semi-strong version states that the markets adjust immediately to any newly published information. Lastly, the strong version states that the stock prices always reflect all public and private information (Fama, 1970). Fama estimated that changes in a company should be reflected in the stock price by the end of the month after the event (Eugene F. Fama, 1969).

2.1.2 The Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) is used to identify asset returns. The model defines the correlation between an asset and the market as beta (β). The alpha of an asset (α) is the excess rate of return relative to the market rate of return (R_M) (Sharpe, 1964).

2.1.3 Event study

The CAPM model can be used to evaluate whether any specific event has an impact on the stock of a company. This is done by calculating the alpha and beta of the stock relative to the relevant market index, during a specific period before the studied event. This model can then be used to compute expected returns relative to that same index for a period after the event. The expected returns can then be compared to the observed returns after the event (MacKinlay, 1997). If there is a large discrepancy, we can possibly determine that the event had a significant effect on the stock price. The assumptions are that the market is efficient, that the event was unanticipated, and that no confounding effects took place during the event window (Brown, 1968). This model, called the market model, has been shown to work best for event studies (Thomas Dyckman, 1984). Event studies have been shown to work well even on small markets, with around 25 data points being considered a good minimum for the results to be considered significant (Jan Bartholdy, 2011).

2.2 Literature survey

Regulatory complexity has greatly increased in the past years, especially when it comes to the regulations governing financial markets (Prasanna Gai, 2019). The Nordic markets are some of the most regulated, with even stricter national rules than required by international agreements such as the Basel Accords (Review, 2020).

This has led to an increase in regulatory alerts in the past few years (Cowan, 2021). Regulatory alerts can come with a cost, in terms of fines, and sometimes legal fees, but how do investors react to this type of announcement? The market can overreact to an event and incur a "reputational loss" on the company if it believes that the company's future cash-flows could be harmed by the change in reputation. Sturm summarizes the reasons for this in a study from 2013. Investors, managers, or employees may switch to a competitor, the relationship between the company and business partners might worsen, or the reputational loss could trigger other costly events, such as management reorganization, regulatory investigations, and lawsuits (Sturm, 2013).

2.2.1 The stock market reaction to negative news

It has already been shown that the stock market reacts negatively to negative news, as the Efficient Market Hypothesis predicts. For example, a study on the effects of Environmental Social and Corporate Governance (ESG) news showed that the market has a negative reaction to negative ESG news, whereas it does not seem to react positively to positive ESG news (Gunther Capelle-Blancard, 2017).

Several studies have been made on how markets react to announcements of criminal activity or sanctions. These studies have been done in different markets, and investigate the effect of different types of announcements, by different institutions. The results have differed.

"Overreaction" to a negative event has been shown in several cases. This is defined as a stock market reaction larger than the financial cost of the sanction. In the case of fraudulent financial reporting, the market reaction was shown to be three to four times superior to the estimated losses due to the event (Jonathan M. Karpoff, 2008). Overreaction to operational losses has been shown, especially if these losses were caused by fraud (Roland Gillet, 2010). An English study found significant negative abnormal returns following the announcement of a sanction. These abnormal returns were not in line with the size of the fine, with a reaction estimated to be nine times larger than the fines, which the authors explained was due to reputational damage. Specifically, these reputational losses were confined to crimes against customers or investors (Armour, 2017). In the case of corporate fraud announcements, large reputational losses could be observed, where only 6,5% of the loss could be attributed to penalties and legal fees. This was especially severe when it came to fraud concerning stakeholders, government agencies, and investors. The observed reputational losses were negligible when it came to frauds involving regulatory violations (Jonathan M. Karpoff and John R. Lott, 1993). These losses were larger for bigger and more profitable banks (Franco Fiordelisi, 2013).

On the other hand, some studies do not indicate as strong of an effect. Two studies of the French market showed significant abnormal returns following the announcement of a sanction, but the size of the reaction was rather moderate. The author interpreted this as showing that the market took the sanction into account, but that the companies incurred no significant reputational loss (Batz, 2018). The size of the cash fine did not seem to significantly influence the market reaction (Batz, 2018 and Kirat, u.d.). Larger companies seemed to have lower losses (Batz, 2018). A study of the English market showed that reports on a company by the Financial Reporting Review Panel, which has no powers of enforcement, had no significant effects (Tony Hines, 1999).

2.2.2 Finansinspektionen

Finansinspektionen was created in 1991 as an integrated supervision system on the Swedish financial markets. The institution is placed under the jurisdiction of the Ministry of Finance. *Finansinspektionens'* primary role is to monitor the stability of companies offering financial services. It is in charge of authorizing companies offering financial services on the Swedish market. *Finansinspektionen* has at its disposal a wide array of regulatory sanctions and weapons, such as fees, fines, and, as a last resort, withdrawal of the license to provide financial services on the Swedish market (*Finansinspektionen*, 2020). A large part of the institution's process is screening and supervising, with a focus on prevention and compliance rather than a focus on punishment (Kranke, 2005).

Looking at sanctions given out by *Finansinspektionen*, two categories stand out in number: sanctions specific to financial companies, and sanctions concerning market information. *Finansinspektionen* gives out sanctions specifically to companies that fail to put programs in place against money laundering, companies that don't respect the capital requirements, or companies that fail to inform customers regarding its fees. These sanctions are categorized on *Finansinspektionens'* website as sanctions against "Financial Companies". Market information sanctions are given to companies that fail to inform *Finansinspektionen* of certain market positions, for example, short positions or large stakes in a company, or fail to give out information regarding changes in their leadership positions (*Finansinspektionen*, 2021).

Finansinspektionen has several levels of sanctions. The first level is a remark, which represents a sanction for something considered serious, but not serious enough for the company to lose its license. The second level is a warning, which is serious enough for the company to eventually lose its license. Both types of sanctions can be accompanied by a financial penalty, which is determined individually, depending on the severity of the offense, how long the offense has been going on, as well as the financials of the company. The monetary sanctions have an upper limit of 10% of the sanctioned company's revenue. The rule is that the fine should not threaten the solidity of the company. The sanctions had an upper limit of 50 million SEK, which was removed in 2014. Several sanctions much larger than that previous limit have been given out since then (Wendschlag, 2016).

The previous research shows that the announcement of negative news usually elicits a negative stock market reaction. In some cases, a reaction larger than the imposed penalty can be observed. This is called an "overreaction" and leads to the theory that companies suffer reputational losses from sanctions. Larger market reactions have been shown when big banks were sanctioned, as well as when larger fines were given. *Finansinspektionen* supervises the Swedish financial markets and regularly gives out fines to misbehaving companies. The two major categories of sanctions are Market Information Sanctions and Financial Sanctions.

3. Research design

3.1 Problem, purpose, and contribution

As seen in the literature review, several studies have been done using data from other markets, showing that companies being sanctioned for crimes elicit a negative market reaction. This study seeks to test for abnormal returns after the announcement of a sanction by *Finansinspektionen*. It also seeks to study which factors have an impact on the size of the market reaction. Finally, the overreaction hypothesis is tested. The motivation here is to find out whether regulatory sanctions have significant effects on a company's stock price. If there are any noticeable negative effects, it would give companies an additional reason to implement compliance programs, to prevent shareholder dissatisfaction. One of *Finansinspektionens'* goals is to promote financial stability. Therefore it can be assumed that it would be of interest to study how their sanctions affect the stock market.

3.2 Method

3.2.1 Event study

An event study methodology is used to analyse the data. This study focuses on sanctions given out for not following the financial market regulations and the sanctions given out for not following market information regulations. The names of the companies sanctioned by *Finansinspektionen* are manually retrieved. The alpha and the beta of each stock are estimated within a period of 30 days before the announcement of the sanction. This is done by examining the relation between the stock returns and the relevant market index. For companies listed on the Swedish stock market, the OMX30 is selected, and the OMXC20 for companies listed on the Danish stock market. No companies listed on the Norwegian or Finnish stock market were found in the sample. The company's closing stock prices and market indexes are retrieved with Eikon software.

Expected returns are estimated using the previously estimated alpha and beta for ten days following the announcement of the sanction. The market returns (R_M) are calculated for the relevant market index for 30 days after the announcement of the sanction. The formula used is

$$\alpha + \beta RM.$$

The expected returns are then compared to the observed returns to reveal if any abnormal returns can be observed. The formula is

$$AR = OR - ER$$

where AR is the abnormal return, OR is the observed return and ER is the expected return.

Abnormal returns are averaged across companies to calculate Average Abnormal Returns (AAR) and aggregated across days determine whether any significant Cumulative Average Abnormal Returns can be found (CAARs).

The formula is

$CAAR = \sum_{t=t1}^{t2} AARt.$

The residuals found between the expected returns and the observed returns 30 days before the event are used to calculate the variance. These residuals are used to calculate the standard deviations and the t-values of the abnormal returns and CAARs. Outliers are removed from the residuals for the samples larger than 50, by using the 1.5 IQR rule. This method will be performed for the following samples.

• A sample of 25 companies sanctioned for failing to comply with the financial regulations.

• A sample of 70 companies sanctioned for failing to comply with the market information regulations.

• A sample of the 50 companies that have been sanctioned more than once by *Finansinspektionen*.

• The total sample of 95 companies.

3.2.2 Regression analysis

A dummy variable is created to represent companies that have previously been sanctioned by *Finansinspektionen*. A second dummy variable is used to identify the four major Swedish banks: SEB, Handelsbanken, Swedbank, and Nordea. The market capitalizations of the companies and the amount of the fines given out are each defined as a variable. Several regression analyses with the CAARs as a dependent variable and the previously mentioned variables as independent variables are performed. The regression equation is

$Y = a + Bx$

where Y is the dependant variable, a is the y-intercept, x is the independent variable, and B is the coefficient. The results are tested for significance to determine whether any of these variables influence the size of the market's reaction. The chosen significance level is 95%.

3.2.3 Overreaction

To test for the overreaction, the difference between the size of the abnormal returns and the size of the fine is calculated to test if the stock market's reaction is proportional to the amount of the fine. The size of the abnormal returns is the CAARs (in %) multiplied by the market capitalization of the company. The difference between the fine and the CAARs is tested for significance.

3.3 Hypotheses

H_0 is defined as the hypothesis that sanctions do not have a significant effect on the stock price of our sample.

H_1 is defined as the hypothesis that sanctions do have a significant effect on the stock market.

H_2 is the hypothesis that the stock market has a stronger reaction when larger fines are given.

H_3 is the hypothesis that the stock market has a stronger reaction for repeat offenders.

H_4 is the hypothesis that the stock market has a stronger reaction when larger companies are sanctioned.

H_5 is the hypothesis that the stock market has a stronger reaction when the four large Swedish banks are sanctioned.

H_6 is the hypothesis that the markets have a reaction larger than the fine.

3.4 Data

The total data is divided into three subsets. These subsets are “financial sanctions”, “market information sanctions” and “repeat offenders”. Important to note is that the subset “market information sanctions” contains financial companies, for example, banks, but it does not contain financial companies that have been sanctioned for financial reasons. The “market information sanctions” sample also contains non-financial companies that are listed on the stock market. The subsets “financial sanctions” and “market information sanctions” do not overlap, but these two subsets overlap with the sample “repeat offenders”.

The total amount of sanctions given out to companies listed on the Nordic stock markets in the two categories is 95. The earliest sanction was given out to Nordbanken (now Nordea) in 1999. The largest fine was given out with a financial sanction to Swedbank in 2020, 4 billion SEK. The average fine given out is 60 million SEK, while the median is 200 000 SEK. The most sanctioned company is SEB, sanctioned 14 times, followed by Nordea, sanctioned 11 times, and Swedbank and Handelsbanken, each sanctioned 8 times.

The sample “financial sanctions” contains 25 companies. The average fine given out in this category is 234 million SEK, while the median is 6 million SEK.

The sample “market information sanctions” contains 70 companies. The average fine given out in this category is 337 000 SEK, while the median is 60 000 SEK.

The sample “repeat offenders” contains 50 companies. The average fine given out in this category is 110 million SEK, while the median is 400 000 SEK.

3.5 Source critical consideration

Since sanctions are announced to the public on *Finansinspektionens*' website, the announcement date is assumed to be correct. This gives good reason to believe that the event study methodology is not biased in that way.

We use the OMX30 index and the OMXC20 for Swedish and Danish companies since these will capture most of the movements on the broad Swedish and Danish markets. This will not necessarily capture the specific movements that might affect a specific stock and could bias the results.

4. Analysis and findings

4.1 Event study

Table 1: CAARS

Table 1.	Cumulative Aggregated Abnormal Returns	
Panel A		
Time periods	Total CAARs	T-statistic (absolute)
(0)	-0,24%	2,72*
(1)	-0,16%	2,50*
(0,1)	-0,84%	3,70***
(0,3)	-0,94%	2,91**
(0,5)	-0,88%	2,24*
Panel B		
Time periods	CAARs financial companies	T-statistic (absolute)
(0)	-1,10%	3,64*
(0,1)	-1,52%	3,56*
(0,5)	-2,70%	3,64*
(0,10)	-3,32%	3,31*
(0,30)	-5,63%	3,35*
Panel C		
Time periods	CAARs Market Information	T-statistic (absolute)
(0)	-0,19%	1,00
(1)	-0,42%	2,18*
(0,1)	-0,61%	2,26*
Panel D		
Time periods	CAARs Recidivism	T-statistic (absolute)
(0,1)	-0,17%	0,61
(0,30)	-2,45%	2,19*

*Table 1 shows the results of the 30-day event study done on the total sample, as well as on the three different samples: financial sanctions, market information sanctions, and repeat offenders. * represents a significance level of 95%, ** represent 99%, and *** represent 99,9%.*

4.1.1 Total

As seen in Panel A, Table 1, for the total sample of 95 companies, significant negative abnormal returns are found for day 0 and day 1. Significant CAARs of -0,82%, -0,91% and -0,83% are found, respectively for the period of (0,1), (0,3) and (0,5).

H_0 is rejected for this sample at the 95% level for the time periods: 0, 1, (0,1), (0,3) and (0,5).

4.1.2 Financial companies

As seen in Panel B, Table 1, stronger effects were found when the sample of 25 companies sanctioned for financial reasons was observed.

Table 2: CAARs over time for financial companies

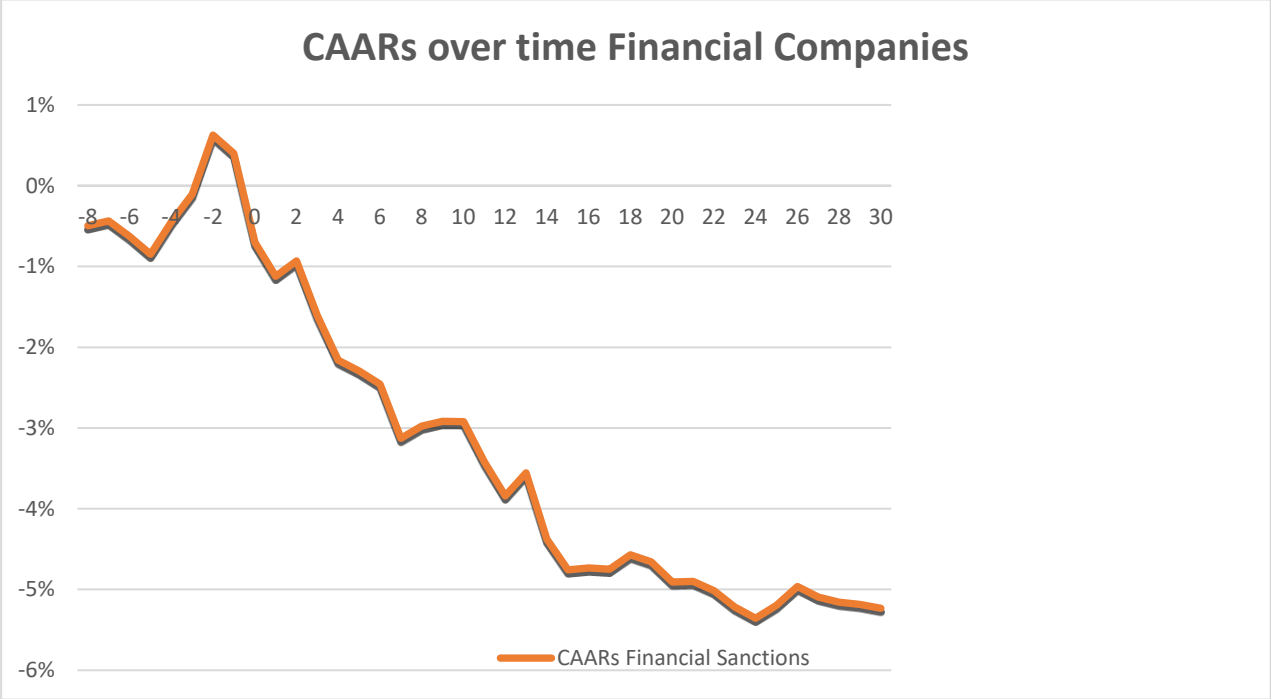

Table 2 shows the CAARs over the estimation period for the financial sanctions sample (30 days after the announcement of a sanction on a financial company by Finansinspektionen).

As can be seen on the chart, significant CAARs were found in the entire 30-day period after the announcement of the sanction.

H_0 is rejected for this sample at the 95% level for the time periods: 0, (0,1), (0,5), (0,10) and (0,30).

4.1.3 Market information

As seen in Panel C, Table 1, for the sample of 70 sanctions for breaches against the regulation concerning market information, significant abnormal returns were found on the day of the announcement and the day after the announcement.

H_0 is rejected for this sample at the 95% level for the periods: 1 and (0,1).

4.1.4 Recidivism

Table 3: CAARs over time for repeat offender companies

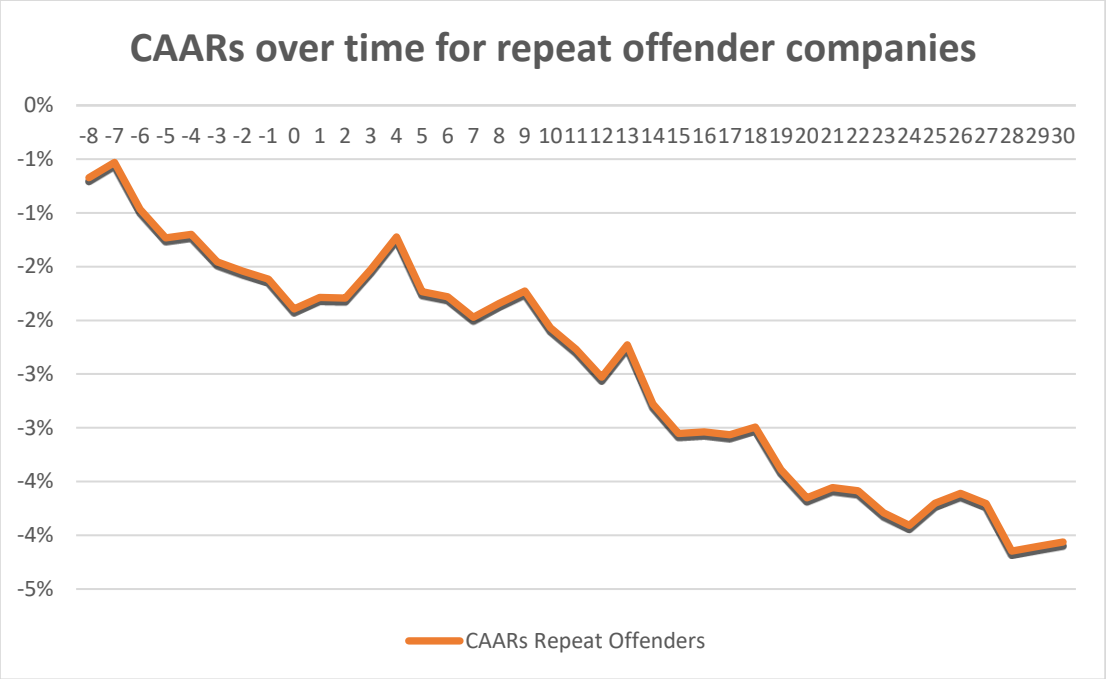

Table 2 shows the CAARs over the estimation period for the repeat offender sample (30 days after the announcement of a sanction on a company by Finansinspektionen).

As seen in Panel D, Table 1, the sample of repeat offender companies does not show any significant CAARs in the short term, but we can observe significant negative CAARs in the long term. Hypothesis 0 is rejected for this sample at the 95% level for the period (0,30).

4.2 Regressions

Table 4: Regression results

Panel A					
Regression of the (0,1) CAARs on the fine amount (in billions)	*Coefficients*	*t Stat*	*Regression of the (0,30) CAARs on the fine amount (in billions)*	*Coefficients*	*t Stat*
Intercept	-0,01	-1,69	Intercept	0,01	0,81
Fine (in billions of SEK)	-0,01	-0,67	Fine (in billions of SEK)	-0,11	-2,80**
Panel B					
Regression of the (0,1) CAARs on the Repeat Offender Dummy	*Coefficients*	*t Stat*	*Regression of the (0,30) CAARs on the Repeat Offender Dummy*	*Coefficients*	*t Stat*
Intercept	-0,01	-2,30	Intercept	0,04	1,74
Repeat offender	0,01	1,45	Repeat offender	-0,07	-1,99*
Panel C					
Regression of the (0,1) CAARs on the market capitalization (in millions)	*Coefficients*	*t Stat*	*Regression of the (0,30) CAARs on the market capitalization (in millions)*	*Coefficients*	*t Stat*
Intercept	-0,01	-1,91	Intercept	0,02	1,16
Market cap (in millions of SEK)	0,03	0,79	Market cap (in millions of SEK)	-0,20	-1,35
Panel D					
Regression of the (0,1) CAARs on the Major Bank Dummy	*Coefficients*	*t Stat*	*Regression of the (0,30) CAARs on the Major Bank Dummy*	*Coefficients*	*t Stat*
Intercept	-0,01	-2,24	Intercept	0,03	1,13
Major Bank	0,01	1,33	Major Bank	-0,04	-1,25

*Table 4 shows the results of the regression of the (0,1) and the (0,30) CAARs on the fine amount variable, the repeat offender dummy variable, the market capitalization variable, and the major bank dummy variable. * represents a significance level of 95%, ** represent 99%, and *** represent 99,9%.*

4.2.1 Fine amounts

As can be seen from Panel A, Table 4, a significant relationship is found between the abnormal return and the amount of the fine in the long term. The fine amounts show no evidence of having an impact on the abnormal returns in the short term.

H_2 is rejected in the (0,1) time period at the 95% level, but it cannot be rejected in the (0,30) time period at the 95% level.

4.2.2 Repeat offenders

As can be seen in Panel B, Table 4, recidivism is shown to have a significantly negative effect in the long run (0,30). However, the effect was not shown to be significant in the short run.

H_3 is rejected in the (0,1) time period at the 95% level, but it cannot be rejected in the (0,30) time period at the 95% level.

4.2.3 Market capitalization

As can be seen in Panel C, Table 4, no significant relationship is shown between the stock market reaction and the market capitalization of the company, neither in the short run nor the long run.
H_4 is rejected at the 95% level.

4.2.4 Major bank

As can be seen in Panel D, Table 4, whether the company was one of the four major Swedish banks was not shown to have an effect at the 95% significance level, neither in the short run nor the long run.

H_5 is rejected at the 95% level.

4.3 Overreaction hypothesis

Table 5: Average market reactions compared to the average fines given out

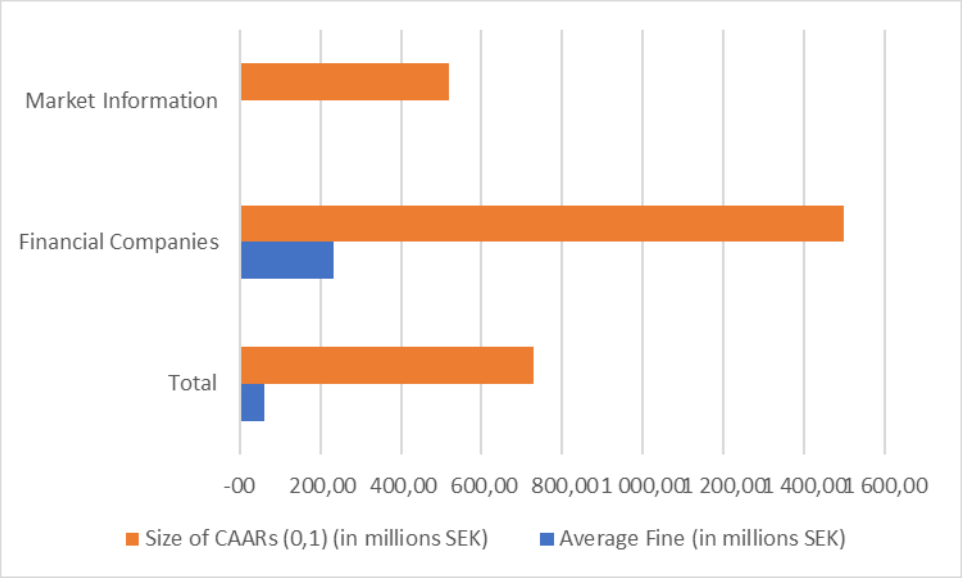

Table 5 shows the average stock market reactions (in millions of SEK) after the announcement of a sanction in the (0,1) time period, and the average amount of the fines given out to these companies, in the (0,1) and (0,30) time periods.

Table 6: Average difference between the fine amount and the CAARs in SEK

Overreaction residuals	Financial Companies		Market Information		Total	
Time periods	Average Residuals	T-stat	Average Residuals	T-stat	Average Residuals	T-stat
(0)	-816 910 479	-2,67*	-165 638 952	-0,57	-337 814 183	-1,47
(0,30)	-4 035 117 449	-1,30	-1 396 059 519	-0,78	-2 093 741 500	-1,36

*Table 6 shows the average difference between the amount of the fine given out to each company and the day 0 and (0,30) CAARs in SEK. * represents a significance level of 95%, ** represent 99%, and *** represent 99,9%.*

As can be seen in the table and the graph, the size of the CAARs in SEK is larger than the amount of the fines.

The averages of the difference between the market reaction and the fine were all negative, for all the periods tested, but when tested for significance, only the financial companies showed overreactions significant at the 95% level (on the day the sanction was announced and over the period of the first two days). H_6 is not rejected at the 95% for financial companies on the day the sanction is announced.

5. Discussion and critical reflection

The results show that we can observe significant negative abnormal returns after the announcement of sanctions by *Finansinspektionen*. The companies sanctioned for not respecting market information regulations showed much smaller negative abnormal returns than the companies sanctioned for not respecting the financial regulations. This is not surprising, since the "market information sanctions" usually come with much lower fines than the financial sanctions, often almost completely insignificant when compared to the company's market capitalization and size (more than half of these fines were smaller than 100 000 SEK). The fact that the market still reacts to these sanctions shows that companies might receive some reputational damage from the sanctions. The observed reactions for "market information sanctions" were limited to the day of and the day after the announcement.

When it comes to financial sanctions, much larger significant reactions from the market can be seen. This may partly be due to the size of the fines. However, the comparison between the size of the reaction and the fine shows that a significant overreaction can be seen. The market seems to have a negative view of the sanctions and punishes companies after the announcement of these sanctions. Compared to the market information sample, the effects of the financial sanctions can also be seen in the long run. This may indicate that the market does not just react negatively to the news but changes its opinions on the companies in the longer run. Financial sanctions can be seen by investors as proof that a company has failed to comply with regulations that are at the heart of its activities. Beyond the fines, these failures could represent a previously unknown risk in the company. Market information sanctions, on the other hand, can be seen as failures to report certain activities. Unless the market regards these activities as dangerous or dishonest in and of themselves, market information sanctions may in some cases only be seen as showing a failure to keep up with administrative requirements.

The regressions point to a few factors that seem to influence the size of the market reaction when sanctions are announced. In accordance with some previous studies, the size of the fine is shown to influence the market reaction in the long run, with larger sanctions leading to a more severe reaction. However, this relationship does not hold in the short run. This could indicate that the market reacts negatively to the fact that a sanction is announced on the day of the announcement but only really takes the size of the fine into account in the long run. The

size of the fine may be one of the first things seen in the case of a sanction, but the reason why the sanction was given might be more important in the long run. The fine may not necessarily be seen by investors as proportional to the severity of the company's failure. *Finansinspektionen* and investors could have different opinions on which type of regulatory failures are the most risky or dangerous for the health of the company. *Finansinspektionen's* goal is to assure the stability of the financial markets, whereas investors are mainly concerned about the company's financial health. A behaviour that *Finansinspektionen* deems severe because it threatens market stability may not be seen as something as bad by investors if it does not hurt the company itself.

The regression analysis on the total sample and the event study on the "repeat offenders" sample show that markets seem to react more strongly to the announcement of sanctions when it concerns companies that have previously been sanctioned by *Finansinspektionen*. The fact that this is also only significant in the long run shows that markets take different factors into account in the long run than they do in the short run. Another possible alternative explanation is that the market overreacts more to the specific companies that are often sanctioned by *Finansinspektionen*, which are primarily large banks.

However, the analysis shows that we cannot conclude with 95% confidence that the market reacts more negatively when the four largest Swedish banks are sanctioned. There does seem to be a negative effect, but the "repeat offender" category has a higher predictive power. The fact that market capitalization does not have a significant impact on the size of the abnormal returns is also an indication that the market does not simply react to the banks more strongly just because they are banks. Three of the major Swedish banks, Swedbank, Nordea, and Handelsbanken had the highest average market capitalizations of all the companies in the total sample. This seems to indicate that the market has a negative view of companies that have repeatedly been sanctioned. This could be because markets try to price in future sanctions when a company has been sanctioned repeatedly, or because repeated sanctions show undesirable behaviour in itself. That undesirable behaviour could be the failure to comply with regulations, which can show flaws in the company management, or the failures leading to the sanctions themselves.

When comparing the size of the fines to the market capitalization, we see that the average market reaction is much larger than the amount of the fine given out with the sanction. This was significant for financial companies in the short run. What should be noted is that positive CAARs were included in the analysis, which could have biased the study towards giving less significant results. It is unlikely that markets would react positively to the announcement of sanctions, so these positive abnormal returns are most likely caused by randomness. In that case, it seems worth noting that 90% of significant overreactions were found in the long run for financial companies. This confirms the overreaction hypothesis and indicates that

sanctions given out to a company carry an additional cost. The stock price reflects the investors' view of a company. If a sanction influences investors negatively to the point of reducing the sanctioned company's stock market value, this negative view may also exist amongst other stakeholders such as customers or business partners.

This indicates that publicly listed companies that want to keep their investors safe and happy should engage in pre-emptive compliance, to avoid these kinds of sanctions and the negative market reactions that come with them.

6. Conclusion

In sum, the study shows that *Finansinspektionens'* sanctions have a significant impact on the sanctioned company's stock value.

The analysis reveals significant CAARs for all the studied samples. For the total sample and companies sanctioned for market information deficiencies, the abnormal returns were limited to the day of the announcement and the next few days after. Financial companies sanctioned for not respecting the financial regulations showed stronger CAARs of up to -5,65%, for periods of up to a month after the announcement of the sanction.

The study finds a significant overreaction for financial companies, on the day of the announcement. Less significant overreactions are found in the longer run for financial companies, and the total sample in the short run. Our analysis indicates that larger fines lead to significantly stronger negative market reactions. Repeat offender companies are also sanctioned significantly more by the market.

Neither large Swedish banks nor larger companies are found to elicit significantly more negative reactions.

This shows that companies can benefit their shareholders by implementing compliance programs if these reduce the likelihood of the company being sanctioned.

7. Limitations of research and future research

This study had to exclude some companies not listed on the Nordic stock markets from the analysis. The study assumes that the market model captures the effect of the sanction on the stock price, while other unrelated events could have an effect that affects the analysis.

Future research should focus on studying the effects of *Finansinspektionens'* sanctions on private funds. These are the largest group of companies sanctioned by *Finansinspektionen* but are not publicly listed on the stock market.

Future research could also focus on studying whether any other effects can be seen on the sanctioned companies. These effects could be effects on reputation or relationships with business partners.

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Appendix

Company Name	Sanction Announcement Date	Fine Amount	Category	Reason for the Sanction
Danske Bank	2021-10-20	-00	Financial Sanction	AML
Opticept	2021-10-14	1 400 000	Market Information Sanction	Market abuse
Nanexa	2021-10-06	1 000 000	Market Information Sanction	Market abuse
Nordnet	2021-08-09	250 000	Market Information Sanction	Non reporting of information
Maiden life	2021-06-23	5 500 000	Financial Sanction	Administrative deficiencies
Nasdaq	2021-01-27	300 000 000	Financial Sanction	Risky financial behavior
Anoto Group	2020-12-04	200 000	Market Information Sanction	Non reporting of information
SEB	2020-06-25	1 000 000 000	Financial Sanction	AML
SEB	2020-06-17	150 000	Market Information Sanction	Non reporting of information
Swedbank	2020-03-19	4 000 000 000	Financial Sanction	AML
SEB	2020-03-13	65 000	Market Information Sanction	Non reporting of information
Nordea	2020-03-09	60 000	Market Information Sanction	Non reporting of information
Ayima	2019-12-06	400 000	Market Information Sanction	Non reporting of information
Athanase	2019-11-20	50 000	Market Information Sanction	Inaccuracies in declaration
Avanza	2019-02-20	35 000 000	Financial Sanction	Risky financial behavior
Catella	2018-08-10	54 000	Market Information Sanction	Non reporting of information
Swedbank	2018-06-20	1 340 000	Market Information Sanction	Non reporting of information
Nordea	2018-03-02	375 000	Market Information Sanction	Non reporting of information
Catella	2018-02-08	25 000	Market Information Sanction	Non reporting of information
Handelsbanken	2017-10-30	40 000	Market Information Sanction	Non reporting of information
Medcap	2017-07-07	100 000	Market Information Sanction	Late application
SEB	2017-06-20	12 000 000	Financial Sanction	Deficiencies in internal control
Danske Bank	2017-06-01	2 500 000	Market Information Sanction	Late application
Hexatronic	2017-05-24	20 000	Market Information Sanction	Non reporting of information
Dometic	2017-04-07	15 000	Market Information Sanction	Non reporting of information
Beijer	2017-03-30	15 000	Market Information Sanction	Non reporting of information
Nordea	2017-03-28	450 000	Market Information Sanction	Non reporting of information
Swedbank	2017-01-11	40 000	Market Information Sanction	Non reporting of information
Nasdaq	2016-12-13	55 000 000	Financial Sanction	Bad cyber risk prevention
Danske Bank	2016-11-22	1 300 000	Market Information Sanction	Non reporting of information
Bong	2016-11-16	15 000	Market Information Sanction	Non reporting of information
Resurs bank	2016-09-13	35 000 000	Financial Sanction	Risky financial behavior
Scandi Strd	2016-06-30	15 000	Market Information Sanction	Non reporting of information
Oscar Properties	2016-05-25	60 000	Market Information Sanction	Non reporting of information
Stockwik	2016-05-18	50 000	Market Information Sanction	Non reporting of information
Swedish Orphan	2016-05-09	1 500 000	Market Information Sanction	Non reporting of information regarding insider information
Swedbank	2016-05-09	3 000 000	Market Information Sanction	Non reporting of information regarding insider information
Etrion	2016-04-28	15 000	Market Information Sanction	Non reporting of information
Troax	2016-04-11	15 000	Market Information Sanction	Non reporting of information
Nordea	2016-03-22	250 000	Market Information Sanction	Non reporting of information
Danske Bank	2016-03-10	100 000	Market Information Sanction	Non reporting of information
Eltel	2016-02-10	15 000	Market Information Sanction	Non reporting of information
TradeDoubler	2016-02-01	30 000	Market Information Sanction	Non reporting of information
Electrolux	2016-01-12	15 000	Market Information Sanction	Non reporting of information
Avanza	2015-11-10	150 000	Market Information Sanction	Non reporting of information
Swedbank	2015-09-01	30 000	Market Information Sanction	Non reporting of information
SEB	2015-06-03	600 000	Market Information Sanction	Non reporting of information
Precise Biometrics	2015-05-26	15 000	Market Information Sanction	Non reporting of information
Handelsbanken	2015-05-19	35 000 000	Financial Sanction	AML
Nordea	2015-05-19	50 000 000	Financial Sanction	AML
Fingerprint	2015-02-27	180 000	Market Information Sanction	Non reporting of information
Danske Bank	2015-01-21	25 000	Market Information Sanction	Non reporting of information
BTS Group	2015-01-16	500 000	Market Information Sanction	Non reporting of information
Fjällförsäkringar	2014-10-07	750 000	Financial Sanction	Risky financial behavior
Electra	2014-09-29	15 000	Market Information Sanction	Non reporting of information
Handelsbanken	2014-08-28	25 000	Market Information Sanction	Non reporting of information
Catella	2014-07-25	300 000	Market Information Sanction	Non reporting of information
I.A.R systems	2014-06-04	200 000	Market Information Sanction	Non reporting of information
SEB	2014-05-23	525 000	Market Information Sanction	Non reporting of information
Handelsbanken	2014-05-16	25 000	Market Information Sanction	Non reporting of information
Ework	2014-05-08	300 000	Market Information Sanction	Non reporting of information
Danske Bank	2014-04-22	60 000	Market Information Sanction	Non reporting of information
Kinnevik	2014-03-03	75 000	Market Information Sanction	Non reporting of information
Mangold	2013-11-13	6 000 000	Financial Sanction	Conflict of interests
ICA Banken	2013-06-26	-00	Financial Sanction	Bad reporting to FI

Handelsbanken	2013-05-02	25 000	Market Information Sanction	Non reporting of information
Nordea	2013-04-16	30 000 000	Financial Sanction	Deficiencies in internal control
NAXS	2012-04-13	10 000	Market Information Sanction	Forbidden transactions
Rottneros	2012-04-13	200 000	Market Information Sanction	Non reporting of information
Confidence International	2012-01-31	50 000	Market Information Sanction	Non reporting of information
SEB	2011-12-14	50 000	Market Information Sanction	Non reporting of information
Nordea	2011-12-07	6 000 000	Financial Sanction	Compensation breaches
SEB	2011-10-19	20 000	Market Information Sanction	Non reporting of information
SEB	2011-05-20	2 000 000	Financial Sanction	Risky financial behavior
Industrivärden	2011-05-17	2 000 000	Market Information Sanction	Forbidden transactions
Nordea	2011-04-06	500 000	Market Information Sanction	Non reporting of information
Avanza	2011-02-24	50 000	Market Information Sanction	Non reporting of information
Swedbank	2011-02-24	25 000	Market Information Sanction	Non reporting of information
Industrivärden	2011-02-18	40 000	Market Information Sanction	Non reporting of information
Swedbank	2011-01-20	2 500 000	Financial Sanction	Deficiencies in internal control
Handelsbanken	2011-01-20	3 500 000	Financial Sanction	Deficiencies in internal control
SEB	2010-05-25	2 500 000	Financial Sanction	Deficiencies in internal control
Swedbank	2010-03-26	120 000	Market Information Sanction	Non reporting of information
SEB	2009-11-04	50 000	Market Information Sanction	Non reporting of information
SEB	2009-09-24	1 500 000	Market Information Sanction	Non reporting of information
Nordea	2009-09-15	500 000	Market Information Sanction	Non reporting of information
Avanza	2009-06-05	200 000	Market Information Sanction	Non reporting of information
Trygg-Hansa	2009-05-27	5 000 000	Financial Sanction	Deficiencies in internal control
Handelsbanken	2009-02-04	50 000	Market Information Sanction	Non reporting of information
Avanza	2009-02-04	200 000	Market Information Sanction	Non reporting of information
Nordea	2008-09-23	50 000	Market Information Sanction	Non reporting of information
SEB	2008-06-03	30 000 000	Financial Sanction	Deficiencies in internal control
Handelsbanken	2004-11-15	1 000 000	Financial Sanction	Hidden costs
SEB	2004-11-15	1 000 000	Financial Sanction	Hidden costs
Nordbanken (Nordea)	1999-08-13	-00	Financial Sanction	Deficiencies in internal control