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Bachelors Thesis

Abnormal stock performance induced by the establishing of Russian operations:

An event study on a portfolio of Finnish companies

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1. Introduction

During the recent years, the investment activity of Finnish companies to Russia has literally taken off. Various Finnish companies have established Russian operations, namely acquisitions and mergers, to enter the Russian Federation in search for early stage markets with high profits. Lately, establishing of Russian operations has become a trend among the Finnish companies, though the current challenging economic situation seems to have reduced this trend. Some Finnish companies have started operating in Russia already in the early 80s and are still expanding their operations in the Russian markets. These companies have introduced an innovative method of managing their business and operating in the markets, when compared to the counterparts at the Russian markets. This has given the companies competitive advantage in their businesses.

A number of papers, thesis and literature have studied the effects of firm specific information announcements to the performance of the stock of the company (see, eg., Krauss and Stoll (1972), Grier and Albin (1973) and Dodd and Ruback (1977)). Similarly, Firth (1975) studied the efficient market hypothesis, i.e. whether the markets incorporate information efficiently in the markets of the United Kingdom.

However, most of the previous studies have been carried out in the international markets, to be exact, on the US markets. Therefore, it is reasonable to study the effect of company specific information announcements in the Finnish markets. As more and more companies consider extending their businesses to the eastern neighbour of Finland, information of how the stock price adjusts in the presence of this announcement is crucial for those with interest in the company performance. Namely, these are institutional and private investors, market analysts and financial researchers. The remarkable international interest in the Russian economy is also a key motivator for conducting a study involving Russian market sphere. When taking into consideration the geographic location of Finland, it is even more crucial to maintain knowledge related to our eastern neighbour, mother Russia.

The purpose of this bachelor’s thesis is to determine how establishing of Russian operations, such as acquisitions and mergers, influence the stock performance of the company. This paper provides an event study on a sample of companies, which have established operations in

Russia, and examines whether there is distinguishable abnormal performance, when these operations are introduced to the markets. The test was done on a portfolio of Finnish public limited companies (PLC), which have announced to start operations in the Russian Federation.

The actual test was divided into various stages, out of which, the most important task was to define the appropriate events for the study and search for information about the companies. Ultimately, this process led to the actual test, in which the abnormal performance of the companies stocks was under study.

1.1. Russia as an investment destination

The effect of the global financial crisis can be seen also in the ratios of Russian economy. It is considered that the level of investments is the main point in whether and how Russia succeeds in the long run. The aging of capital stock and possible shortages might result a significant decline in the long run annual economic growth rate of Russia (Bofit forecast for Russia, 2/2009.)

During the time period from January 2002 to the last quarter of 2007, the GDP growth rate of Russia remained at a high level, when compared internationally. The growth rate shot up from the less than four percents of the first quarter of 2002, to the incomprehensible nine percents in the last quarter of 2007, as illustrated in Chart One. This economic growth caused a peak in the prices of real estates. According to the news provider Bloomberg, the output of Russia has bottomed out recently and is already on a path to growth. (See Appendix Three) This economic downturn has caused the prices of real estate’s to plummet (Tekniikka & talous, 21.8.2009).

Chart 1. Russia GDP growth rate from January 2002 to December 2008

2. Literature review

Current literature and articles of the field of study provide little knowledge on the information effects of acquisitions and mergers related to Russian operations. However, an ample number of similar studies have been introduced in contact with other market areas. For instance, Firth (1975) studied the effect of acquisitions of more than ten percent to the company stock price. The study was conducted in the markets of the United Kingdom. With this research Firth tested the efficient market hypothesis, i.e. whether the markets incorporate information efficiently. Comparable studies have been managed by Krauss and Stoll (1972), Grier and Albin (1973), and Dodd and Ruback (1977). Previous examinations studied whether a securities sale or purchase announcement had an impact on the markets, specifically, whether the markets were efficient (Elton et al. 2007.) This thesis will provide a similar test of the market efficiency in contact to Russia.

The event study-methodology is rather commonly used among financial studies. It was first introduced by Michael C. Jensen et al. (FFJR) in the article “The Adjustment Of Stock Prices To New Information” in 1969 and has hitherto been utilized in multiple studies. Some have said that the article presents still the state of the art in financial studies, and has had a deep impact on the field of statistical studies (Binder 1998). John J. Binder has written a useful article “The Event Study Methodology Since 1969”, which was published in 1998. In this

paper Binder talks about the event study methodology from its early stage to modern days. He demonstrates specific features of the method in an exoteric manner, introducing useful examples and solutions for encountering statistical problems.

A paper by Simon-Erik Ollus and Heli Simola, “Russia in the Finnish Economy” (2005) provides in depth knowledge for the Russia endeavor of this thesis. One of the topics of the article is “Finnish-Russian investment relations and their effect on the Finnish economy”. The article claims that the primary reason for Finnish companies to invest in Russia is the local market potential, rather than cheap labor and cost effective production. The key point of the article is that it presents the added competitive edge which companies get from Russian operations. The Finnish investments have managed to receive good profits even though they are mostly made to sectors which are not being considered as strategic among Russian companies (Ollus et al. 2006.)

According to a study by Laakkonen, Tiusanen and Jumpponen (2005), another reason to invest in the Russian Federation is the close location to Finland. However, the market potential is seen as the most important factor when choosing the location for the investment. The study also suggests that the amount of investments made by Finnish companies to Russia is still rather small (Laakkonen et al. 2005.)

The doctoral thesis, “Essays on pricing of risk and international linkage of Russian stock market”, written by Kashif Saleem (2009) points out the fact that the remarkably high profits of various Russian companies during the twentieth decade has been notified among international investors, resulting substantial growth in the amount of foreign ownership among Russian companies. Contemporaneously with this process the authorities have started to lessen the power of investment barriers, and as a consequence of these factors the level of foreign investments to Russia has increased. This is generally seen to result a higher valuation for the affected securities (Saleem 2009.)

There are various studies and reports concerning business surroundings in Russia, or the influence of Russia for Finnish economy, published by such organizations as The Bank of Finland Institute for Economies in Transition (BOFIT) and The Finnish Innovation Fund (SITRA).

2.1.Literature

The book written by Michael J. Seiler (2004), “Performing Financial Studies: A methodological Cookbook”, provides the tools for the financial analysis. The book includes down-to-earth instructions for performing event studies with Microsoft Office Excel. Another useful book is written by Edwin J. Elton et al. (2007), ”Modern Portfolio Theory and Investment Analysis”. The book includes a general introduction to analysis of individual securities, as well as the theory of combining securities into portfolios. Similarly, the book “Rahoitusalan sovellukset ja Excel” (Financial applications and excel), written by Mika Vaihekoski (2004), is useful as a basic guide to Microsoft Office Excel when concerning financial studies. The book is written in Finnish, and therefore it is useful for those who prefer Finnish literature.

The book published by the Ministry of Employment and the Economy (until 31 December 2007, Ministry of Trade and Industry) (2005), “Investoinnit ja investointiedellytykset Venäjälle” (Investments and investment conditions in Russia) provides accurate information of foreign direct investments to Russia.

3. Data

3.1.Descriptions of data sources

The stock exchange data was collected through Thomson One Banker and Datastream. For using Datastream through Microsoft Excel, an add-in was installed to access the data directly from Excel. Thomson Financial provides data from sources such as SDC Platinum, Edgar filings, I/B/E/S and Worldscope. The market data of Datastream is updated daily to match with stock splits. When concerning the effect of mergers and acquisitions, the surviving issue is carried forward and the history data is not adjusted.

Detailed information regarding the firm specific news was obtained from the homepages of the companies. For easy access to the information, the Amadeus database was utilized as the main source for gathering information about the companies. To define the possible events that have taken place during the reference period, all the companies press and stock releases have been taken into account. From those events was chosen the ones to be taken under examination.

3.2. Data outlining

This study concentrates on the period post the Russian economic crisis, which took place in the year 1998. The period of time under examination in this study ranges from 1 January 2002 to 1 November 2009. However, the crisis can be seen to have flared a beginning of a new era in the Russian economy (Saleem 2009). Various Finnish companies, which are not included in the test, have been operating in the Russian Federation long before it even existed. These companies, such as Lemminkäinen Oyj, have started their Russia operations during the Soviet Union, and have gained in depth know-how of managing projects in Finland’s eastern neighbour. Nevertheless, some of these companies are dismissed because they have not established the type of information, which is examined in this study, during the period of time under inspection in this research.

4. Methodology

4.1. Theory of an event study

According to the article “The Adjustment Of Stock Prices To New Information”, originally introduced by Fama, Fisher, Jensen and Roll (FFJR, 1969), event study methodology is a commonly used statistical method to define how new firm specific, or market-wide information effects to the performance indicators of the firm. It is used especially in accounting, economics and finance related studies (Binder 1998). Firm specific news might be radical innovations (Xin et al. 2008) or stock splits (Jensen et al. 1969), whereas the market wide changes could be a change in market regulations or European Central Bank (ECB) interest rate raising (or lowering).

However, originally the reason for the use of the event study method was to study how quickly new information could be seen to have incorporated in the stock price, and this way examine whether markets were efficient (Elton et al. 2007.)

This thesis examines how new firm specific information about establishing Russia operations affects the stock price of the company. Particularly, this study will not attempt to determine the effect of news bulletin for the stock price of individual companies. Instead, this study is more concerned of the aggregate effect in the sample of firms, and the generalization of this result. The underlying reasons for this study are to test 1) whether markets incorporate information efficiently and 2) to determine the impact of an event to the shareholder value of the company.

4.1.1. Leakage

In the case of perfectly efficient markets, the effect of the new information can instantly be seen in the stock price. In some cases the markets get to know the news earlier than the official public announcement. The “leakage” produces market imperfections, and as a consequence it might take a while for the markets to fully interpret the news. Leakage is an incident that may result as corruption of the data, and the end result of the study may vary accordingly. Leakage results as the counterparts (personnel) in question use the information for their own purposes. This may result in a bull effect in the stock rate (Seiler.)

In Finland, Security Markets Act restricts the use of insider information for illegal purposes. The term “insider information” means firm specific information which is related to publicly available shares, or shares subject of multilateral trade. The information can be either unpublished, or information which could substantially affect the share price. (The Security Markets Act 26.5.1989/495).

The abuse prohibition of insider information applies to all persons who have insider information, regardless of the fact where and how the information is acquired. To manage the insider information, there are two registers into which details about the insider will be recorded. Public insider register contains information, for instance, on the family relations of the insider and ownership of shares. This public register is maintained by the Financial Inspection of Finland. The employees who by virtue of their positions or tasks have access to insider information will be listed in another, company-specific inside information register (OMX Nordic Exchange Helsinki, 2008.)

4.2. Hypothesis development

Presumption for the study is that the markets incorporate information efficiently. In terms of statistics, the null hypothesis of this study states that the publishing of the news has no effect to the stock price of the company.

H0. Establishing of firm specific information related to Russian operations does not induce abnormal stock performance.

Consequently, if the stock price changes statistically reliably, the alternative hypothesis comes effective.

H1. Publishing of firm specific information related to Russian operations affects to the stock price of the company on the announcement date.

When taking into account the cumulative data, we can examine the total effect of the announcement during the event window.

H2. Publishing of firm specific information related to Russian operations can be seen to affect stock price of the company during the event period.

4.3. Stages of an event study

Stages of an event study are rather commonly known, and have only little differences depending on the exact method of implementation.

1) The first task is to identify the accurate announcement date (event date).
2) The next task is to define the period of time to be studied, i.e. the event window and the estimation period.
3) Selecting a sample of firms that have a surprise announcement.
4) Calculate the normal returns (nonevent) that would have occurred in the absence of the event.
5) Subsequently, to calculate the abnormal returns (ARs) for the days of the event window.
6) Calculate the cumulative returns (CARs) for the test statistics.
7) Determine the statistical significance of the ARs and CARs.
8) Finally, interpret these results and take them under discussion

(Elton et al. 2007; Seiler 2004.)

5. Data analysis

5.1. Event definition

To get started, the first issue is to identify the event date, which is to be used as a distributor between the prior-event and post-event performance. This is the date on which the market first time learns about the relevant new information. It has been shown that due to discrepancies and reporting delays among the news providers, in some occasions, identifying the exact moment of announcement is difficult (Seiler 2004.)

In this study the event date is the date on which the press release or other relevant bulletin has been published. The information might be in relation to singing a pre-contract, a subsidiary opening or joint-venture, merger and acquisition announcements, just to mention some examples. Appendix one is a press release of Solteq Oyj, “Solteq expands business operations to St. Petersburg”, published on the sixteenth of January 2008. With this press release, the firm announced to open a sales office in St. Petersburg by establishing the company “OOO Solteq Russia”. The main task of the new company was said to “boost the company’s maintenance business”.

If available, it is recommended to use daily data instead of monthly or intraday data, i.e. data which has various updates during a day. Daily data is frequent enough to isolate the event from the prior- and post-event period. In a normal case, when the event cannot be associated with an exact time of day, usage of intraday data does not provide any surplus for the researcher. It can even lessen the power of the test, if the researcher is incapable to identify the exact time of the event (Seiler 2004). For the means of this thesis, daily data provides the appropriate statistical accuracy.

5.2. Event window

An event window defines how many trading periods (days) preceding and following are to be included in the study. The event window should be defined as exact as possible to reach the best match according to the event. This way the test is measuring what it is supposed to and irrelevant information, i.e. noise, will not affect the result of the test. When concerning abrupt events, the event window can be minimized to cover as small number as ten prior and ten post

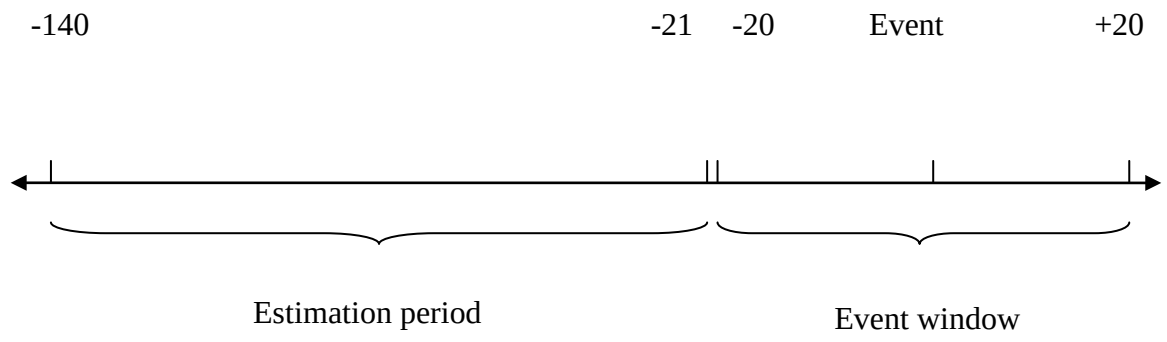
event trading periods. Some events can be seen to be gradual and therefore the event window should be relatively long, up to plus and minus thirty trading periods (Seiler 2004.)

This study uses a mediocre length event window which takes into consideration twenty days before through another twenty days after the event. The event window covers forty-one trading periods in total. This period of time can be considered long enough to examine the effect of possible leakage prior to the event date, as well as to find out how long it takes for the markets to fully incorporate the new information. In a case of a merger, the stock price may rise well before actual announcement.

5.3. Definition of the estimation period

Next to be defined is an estimation period for establishing how the returns on the stock should behave in the absence of the event. In this study the estimation period is before the prior-event period, even though it can be also after the event window, and in some occasions during the event window. The goal here is to achieve an unbiased estimate of the firm performance, when the event is not present. However, if there are no other options for calculating an unbiased estimate of the firm return than using the event window, then the researchers are forced to use the information which is available. For instance, in the case of initial public offerings, it is not possible to have an estimation period prior to the event window. The length of this period can be chosen relatively freely, even though an estimation period and prior-event periods are not meant to be situated one upon another (overlap), to prevent contamination of the data (Seiler 2004.)

This thesis utilizes a four month (a quarter) long estimation period which precedes the event window. A quarter can be considered to be a long enough period of time to define the relation between the markets and the firm. Because the number of trading periods in a month differs, this study will use a 120 day estimation period. The estimation period will run ranging from 140 preceding the event window through twenty one days before the event window. On the whole test covers 162 trading periods. Picture one illustrates the relation of the estimation period and the event window.



Picture 1. Timeline of estimation period and event window.

5.4. Selection criteria for the Russia portfolio

The firms in the sample of this study are listed in OMX Helsinki, and the sample covers various industries. On the whole, the Russia portfolio includes mainly large public limited liability companies, even though some of the events in the sample were published by the subsidiary of the case company. For instance, Aurinkomatkat Oy is a subsidiary of Finnair Oyj and similarly Metsä-Botnia Oy is a subsidiary of M-Real Oyj and UPM-Kymmene Oyj. The registered office of Elcoteq SE is in the Luxembourg, though the company stock is listed in OMX Helsinki.

The time series of the companies are often incomplete, due to days on which the exchange has been closed. These days constitute most commonly of midweek holidays and religious feasts. Another reason might be that there has not been trading on the stock on that day. For instance, in the case of Nurminen Logistics Oyj the stock close ratings were rare and randomly dispersed after the initial public offering to OMX Helsinki. As the IPO took place on the first of January 2008, the volume of trades was still moderate (or non-existent) for more than a year from the transaction. To achieve continual time series, the missing stock close prices were replaced in Excel by the mean of the adjacent exchange rates.

To achieve statistically significant results, enough observations should be included in the sample. According to Vaihekoski (2005), the correct amount depends on the situation and the circumstances, however as a minimum amount of observations can be considered thirty

companies. This thesis uses a thirty-two observation sample which encompasses only one case per company (except UPM-Kymmene Oyj). The total number of announcements considered while selecting the cases was notably higher.

5.4.1. Contagion effect

Due to contagion effect, i.e. an effect that distorts the course reactions within the event window, various cases had to be left un-examined. This was due to another event that placed near or during the event window. Contagion effect results as choosing another possible announcement date or ultimately removal out of the portfolio (Seiler 2004.)

In some cases during the event window there was another announcement which distorted the company performance from its normal level. In the case of Nokian Tyres Oyj, there was a clear outlier among the returns of the original event window. This was due to financial performance of the company; the result of financial year 2002 did not fulfill the market expectations. On the result announcement day, the stock price of Nokian Tyres Oyj plummeted more than sixteen percents. As the result was published during the original event window, the statistics of the whole test were skewed. By replacing the original announcement (18 February 2002) with one which occurred over two years later (31 May 2004), the test statistics were more accurate.

5.4.2. Test sample

Due to the fact that Russia is often seen promoting protectionism in its policy, the level of foreign investments is still rather minimal. Several studies carried hitherto claim that the economy of Russia has potential for more foreign investments. A vast majority of foreign investments bear to the industrial sector, while second largest sector of the economy to receive investments, has been retail and wholesale trade sector. The industrial sector gathers investments to serve the expansive local demand. (Ollus 2005.) This can be seen also among the companies of this thesis; close to half of the companies in the test sample operate in the industrial sector. Chart One visualizes the distribution of the sample companies among different sectors.

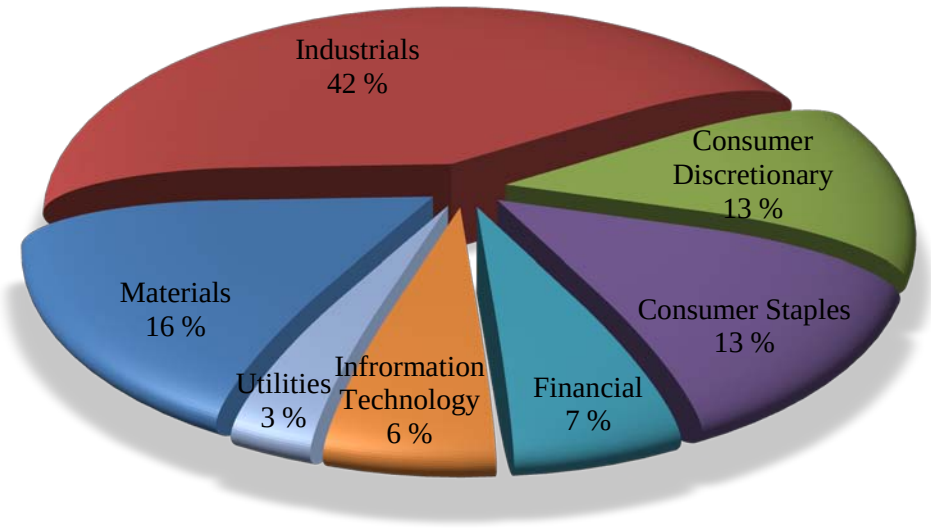


Chart 2. Distribution of companies in the sample among sectors.

Table one shows the sample of firms examined in the thesis. In the columns are the company sector, number of the company, name of the company, their ticker symbols and announcement dates of the events. Notice, that the first companies to start operations in the Russian markets from this portfolio, are Stockmann (1989, first store in Moscow) and YIT (1988, ZAO YIT Lentek).

Table 1. List of companies, their ticker symbols and announcement dates.

Sector	Number	Firm name	Ticker	Announcement date
Materials	1	Rautaruukki Oyj	RTRKS-HE	31.3.2006
	2	UPM-Kymmene Oyj	UPM1V-HE	19.12.2007
	3	Ahlstrom Oyj	AHL1V-HE	3.6.2008
	4	Kemira Oyj	KRA1V-HE	21.11.2005
	5	Metsä-Botnia Oy*	-	17.9.2003
Industrials	6	YIT Oyj	YTY1V-HE	27.10.2006
	7	Lassila & Tikanoja Oyj	LAT1V-HE	9.2.2005
	8	PKC Group Oyj	PKC1V-HE	20.11.2002
	9	Ponsse Oyj	PON1V-HE	21.12.2004
	10	Kone Oyj	KNEBV-HE	5.9.2007
	11	Finnair Oyj	FIA1S-HE	24.10.2007
	12	SRV Oyj	SRV1V-HE	4.6.2009
	13	Kesla Oyj	KELAS-HE	4.4.2006
	14	Nurminen Logistics Oyj	NLG1V-HE	14.1.2009
	15	Ruukki Group Oyj	RUG1V-HE	22.12.2006
	16	Aspo Oyj	ASU1V-HE	4.10.2005
	17	Pöyry Oyj	POY1V-HE	3.4.2007
	18	Cramo Oyj	CRA1V-HE	30.8.2007
Consumer Discretionary	19	Nokian Tyres Oyj	NRE1V-HE	31.5.2004
	20	Stockmann Oyj	STCBE-HE	26.10.2004
	21	Sanoma Oyj	SAA1V-HE	19.1.2005
	22	Tiimari Oyj	TII1V-HE	25.2.2008
Consumer Staples	23	Atria Oyj	ATRAV-HE	16.6.2005
	24	Kesko Oyj	KESBV-HE	30.7.2004
	25	Raisio Oyj	RAIVV-HE	22.4.2003
	26	Lännen tehtaat Oyj	LTE1S-HE	4.5.2005
Financial	27	Sponda Oyj	SDA1V-HE	30.6.2006
	28	Capman Oyj	CPMBV-HE	26.5.2008
Infrormation Technology	29	Elcoteq SE	ELQAV-HE	28.6.2004
	30	Solteq Oyj	STQ1V-HE	16.4.2008
Utilities	31	Fortum Oyj	FUM1V-HE	28.2.2008

*Owners: M-Real Oyj & UPM-Kymmene Oyj

5.5. Calculations of stock performance

The returns of the stocks in the portfolio will be calculated subsequently. This thesis calculates the returns as logarithmic returns, i.e. the returns are calculated taking into account the compound interest.

$$R_{jt} = \ln \frac{P_t}{P_{t-1}}$$

Equation 1) Logarithmic return

In which, R_{jt}= return for firm *j* at time *t*

P_t = present day's close price

P_{t-1} = previous day's close.

(Seiler 2004.)

5.5.1. Expected returns

The expected returns (normal, or nonevent returns) can be calculated on four different methods; mean return, market return, proxy portfolio return and risk-adjusted return (Seiler 2004).

The mean return method is the most simple out of these four. The expected return $E(R_{it})$ is calculated as the mean of the firm returns during the estimation period. The average return is the difference when comparing the firm return and the mean of firm returns. As simple as the method is, it has been found to be relatively effective when compared to the other advanced methods. The method might cause problems in the presence of event clustering, i.e. the events are situated close to one another. One should also take into account that market trends may corrupt the results. For instance, during bull markets, i.e. the stock markets are in an upward trend, the expected returns are higher than normally. The same can be reversed to match the bear markets, i.e. the markets are in a downward trend (Seiler 2004.)

In the market return method the expected return for the stock corresponds to the market performance of the day in question. Therefore, in this method there is no actual estimation period at all, the expected returns are taken from the period of event window. The market performance is normally S&P 500 or other equivalent stock exchange index (OMX Helsinki). Similarly as mean return method, market return method is sensitive to the effect of event clustering and events close to one another may result biased estimates (Seiler 2004.)

As known, industry and firm specific characteristics affect on the risk and return of a stock. Proxy portfolio return is designed to take these matters into account when defining the expected return for the company. The expected return is derived from a specific industry return. If possible, one should take into account the effect of firm size to the company performance. Even though, it is fairly rare to find an index, which separates companies both according to the industry they are operating in, and the firm size. The ideology of portfolio returns is based on the assumption of risk-return tradeoff, i.e. the higher the risk, the higher the return should be. In other words, risk and return are depend on one another. Similarly, as market return method, portfolio return does not need an estimation period. The expected returns are from the days in the event window. As a method it is also prone to the effects of event clustering. (Seiler 2004.)

In the risk-adjusted return method the expected returns for each day are predicted from the statistics of the estimation period using a regression. Though the regression can be defined with more than one variable, studies have proven that a single-index model works with satisfying success. Likewise, as in the previous three methods, the abnormal returns are then calculated as the difference between the expected return and the actual return. Those in favor of capital asset pricing model (CAPM) prefer the usage of excess returns when defining the regression. Nevertheless, most studies use regular (nominal) returns. (Seiler 2004.)

This thesis utilizes the most commonly used, risk-adjusted method for determining the abnormal returns. What comes to some potential statistical problems, cross-sectional dependence does not form a problem because the announcement days are not “clustered”. That is, the event windows are “randomly dispersed through calendar time” (Binder et al. 1998) and so there forms cross-sectional independence among the events.

Finally, the abnormal returns will be calculated by taking the actual return from the sample stock and deduct the predicted normal return for the days in the event window (Seiler 2004.)

This same method is used in all of the previous methods. This thesis utilizes a rather common Standardized Abnormal Return (SAR) test for standardizing the abnormal returns.

5.5.2. Standardized abnormal return model (SAR)

The exact model to be calculated during this thesis is divided into separate modules to manage the data successfully. Finally, the actual standardized abnormal returns are to be calculated for each of the firms in the sample for every day during the event window. Equation Two presents this formula.

$$SAR_{jt} = \frac{AR_{jt}}{\sqrt{S^2_{AR_{jt}}}}$$

Equation 2) Standardized abnormal return

In which SAR_{jt} = standardized abnormal returns for firm *j* at time *t*

AR_{jt}= abnormal return for firm *j* at time *t*

$\sqrt{S^2_{AR_{jt}}} = S_{AR_{jt}}$= square root of the variance of the abnormal returns for firm *j* at time *t*, which is the same as standard deviation of the abnormal returns for firm *j* at time *t*.

The previous equation can be divided into two separate stages. First, equation for calculating the numerator, i.e. the abnormal return, is illustrated in Equation Three.

$$AR_{jt} = R_{jt} - E(R_{jt})$$

Equation 3) Abnormal return is calculated as the difference between the actual return and the expected return.

In which AR_{jt}= the abnormal return for firm *j* at time *t*

R_{jt} = actual return for firm *j* at time *t*

$E(R_{jt})$ = expected return for firm *j* at time *t*

The second part of the standardized abnormal return equation, denominator in the first equation, stands for standard deviation of the abnormal returns.

$$\sqrt{S^2_{AR_{jt}}} = \left[\frac{\sum_{t=-140}^{-21}\left(AR_{jt(est.period)} - \overline{AR}_{jt(est.period)}\right)^2}{D_j - 2}\right] *$$

$$\left[1 + \frac{1}{D_j} + \frac{\left(R_{mt(event\ window)} - \bar{R}_{m(est.period)}\right)^2}{\sum_{t=-140}^{-21}\left(R_{mt(est.period)} - \bar{R}_{m(est.period)}\right)^2}\right]$$

Equation 4) Standard deviation.

In which

$S^2_{AR_{jt}}$ = variance of the abnormal return for firm *j* at time *t*

$AR_{jt(est.period)}$ = abnormal return for firm *j* at time *t*

$\overline{AR}_{jt(est.period)}$ = mean abnormal return for firm *j* at time *t*

D_j = number of observed trading day returns for firm j over the estimation period

$R_{mt(event\ window)}$ = return on the market (OMX Helsinki) at time *t* over the event window

$\bar{R}_{m(est.period)}$ = mean return on the market (OMX Helsinki) at time *t* over the estimation period

$R_{mt(est.period)}$ = return on the market (OMX Helsinki) at time *t* over the estimation period.

(Seiler 2004.)

6. Results and discussion

Testing of hypotheses was performed by examining whether the stock price adjusted in the presence of the event. In the following Table Two are the results from the test. The first column, “Time relative to the event date”, contains those twenty days prior and twenty days post event examined in the test. The event date, i.e. the announcement date, is the date zero. The subsequent columns consist of the results of daily data, following the results of cumulative statistics

In addition to the daily total standardized abnormal returns, this thesis studies also the cumulative statistics. To determine statistical significance of both daily and cumulative results, p-value will be applied.

6.1.Daily statistics

The next three columns consist of the results of the daily data ranging from twenty days before to twenty days after event date. The second column embodies the values of the total standardized abnormal returns, i.e. TSARs. These have been calculated as a sum of companies standardized abnormal returns for each day. The third column contains the values of tsar Z-statistics and the fourth column equivalent tsar p-values. The p-values are used to measure the significance of the test.

The total standardized abnormal return for the event date got the value of 14.880. This leads to the value of 2.608 in the Z-statistic, which is statistically significant at risk level of five percent (even at the risk level of one percent it is still significant). On the whole, if we apply the risk level of five percent, there are four statistically significant dates among the forty one dates of the event window. Dates eighteen and thirteen before the event date embody statistically significant values. Nevertheless, the value of day eighteen before the event stands the lowest total standardized abnormal return value of the whole test. On the day thirteen before the event, there is a relatively high value of total standardized abnormal return. Likewise, day twenty after the event date includes statistically significant value.

From these results we can conclude that markets seem to get knowledge concerning the event well in advance the actual announcement date is present. As it can be seen from the daily statistics, during the days thirteen to eleven prior the event date the total standardized abnormal returns improve notably. What are the reasons for this leakage remain unanswered for the time being. However, the rise in the abnormal returns may be a consequence of insider trading. On the other hand, it seems to take a while for the markets to fully interpret the news. From the day ten to fifteen after the event date the daily statistics show an clear improvement in the total standardized abnormal returns. On the basis of these results we can conclude that on the event date the effect of news has a significant positive effect on the stock price. That is, the announcement of firm specific information related to Russian operations result a positive abnormal return on the announcement date. This result proves that the markets are efficient and the alternative hypothesis one comes into effect.

6.2. Cumulative statistics

While the daily results show clear statistical significance on the event date, cumulative statistics claim the opposite. Basis of cumulative statistics, the event date receives a cumulative standardized abnormal return of 5.182 and as a consequence the cumulative standardized abnormal return z-statistic receives the value of 0.201. However, the cumulative consideration does not result significant p-values. Range from day seventeen prior to day fifteen prior the event date contains values which are closest to reach statistical significance (on the risk level of ten percent these values are statistically significant). Finally, the cumulative value of total standardized abnormal return settles to 9.363, causing the value 0.260 for the z-statistic. The day twenty post event date does neither stand for statistically significant values.

When taking into account that there were only four statistically significant days among the daily statistics, it is not a surprise that the cumulative results do not contain statistically reliable values. To conclude, nevertheless that the daily statistics show occasional statistical significance, the cumulative consideration claims that the announcements do not result a statistically significant abnormal return. In other words, the alternative hypothesis two does not become effective.

Time relative to the event date	Daily statistics TSAR*	TSAR Z-Statistic	TSAR p-value	Cumulative statistics TSAR	TSAR Z-statistic	TSAR p-value
-20	-0.973	-0.170	0.865	-0.973	-0.170	0.865
-19	2.809	0.492	0.623	1.836	0.231	0.817
-18	-15.053	-2.638	0.008	-13.217	-1.359	0.174
-17	-7.357	-1.289	0.197	-20.574	-1.832	0.067
-16	-2.748	-0.482	0.630	-23.322	-1.857	0.063
-15	0.039	0.007	0.994	-23.282	-1.693	0.091
-14	1.592	0.279	0.780	-21.690	-1.460	0.144
-13	12.570	2.203	0.028	-9.120	-0.574	0.566
-12	-0.365	-0.064	0.949	-9.485	-0.563	0.573
-11	10.378	1.819	0.069	0.893	0.050	0.960
-10	-5.844	-1.024	0.306	-4.951	-0.266	0.790
-9	3.220	0.564	0.572	-1.730	-0.089	0.929
-8	-1.898	-0.333	0.739	-3.629	-0.179	0.858
-7	-0.865	-0.152	0.880	-4.493	-0.214	0.831
-6	-1.272	-0.223	0.824	-5.765	-0.265	0.791
-5	-2.778	-0.487	0.626	-8.544	-0.380	0.704
-4	6.363	1.115	0.265	-2.181	-0.094	0.925
-3	-5.496	-0.963	0.335	-7.676	-0.322	0.747
-2	-4.219	-0.739	0.460	-11.896	-0.486	0.627
-1	2.197	0.385	0.700	-9.699	-0.386	0.699
0	14.880	2.608	0.009	5.182	0.201	0.840
1	-2.518	-0.441	0.659	2.663	0.101	0.919
2	-0.720	-0.126	0.900	1.943	0.072	0.942
3	-7.224	-1.266	0.205	-5.281	-0.192	0.848
4	-2.964	-0.520	0.603	-8.245	-0.294	0.769
5	8.330	1.460	0.144	0.086	0.003	0.998
6	-5.528	-0.969	0.333	-5.443	-0.187	0.852
7	4.720	0.827	0.408	-0.723	-0.024	0.981
8	2.308	0.405	0.686	1.585	0.052	0.958
9	-2.818	-0.494	0.621	-1.233	-0.040	0.968
10	2.780	0.487	0.626	1.548	0.049	0.961
11	2.611	0.458	0.647	4.158	0.131	0.896
12	5.816	1.019	0.308	9.974	0.309	0.757
13	2.337	0.410	0.682	12.310	0.376	0.707
14	-4.288	-0.752	0.452	8.022	0.241	0.809
15	8.830	1.548	0.122	16.853	0.500	0.617
16	-3.447	-0.604	0.546	13.406	0.392	0.695
17	-5.708	-1.000	0.317	7.698	0.222	0.824
18	-11.116	-1.948	0.051	-3.418	-0.097	0.922
19	-3.766	-0.660	0.509	-7.184	-0.202	0.840
20	16.547	2.900	0.004	9.363	0.260	0.795

*Total Standardized Abnormal Returns

Table 2. Summary test statistics of the event window.

In Figure One we can see how the cumulative total standardized returns builds up gradually, ending finally to the value of 9.36 on day twenty post event date. The global minimum is on the sixteenth day prior the event and global maximum is on the fifteenth day post the event. This Figure illustrates how most of the cumulatively positive values situate after the tenth day in the event window and forms a post-announcement drift. As a conclusion, the significant rise in the stock prices on the announcement date and a slight decline in the beginning of post announcement are constant with the assumption of efficient markets. In the light of these results it seems that the markets are efficient, though this result is not significant when measured with cumulative statistics.

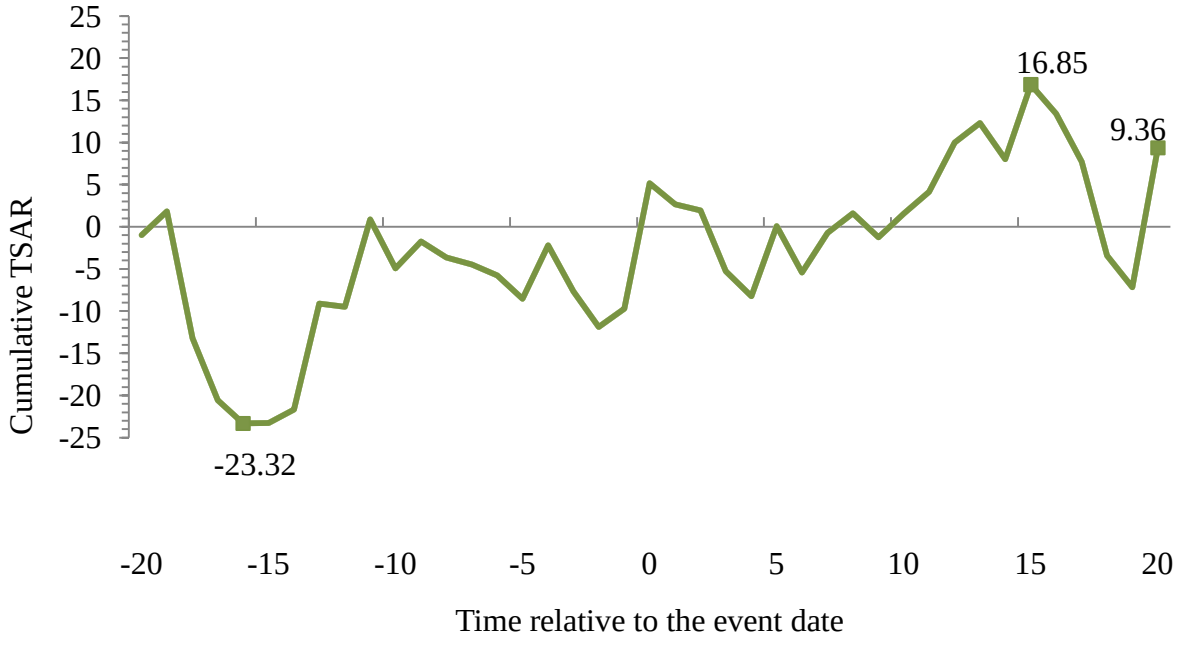


Figure 1. Cumulative total standardized abnormal returns in the event window

7. Summary and conclusions

The purpose of this thesis was to test whether establishing firm specific news of Russian operations affects to the stock price of the company. The test was conducted on a sample of thirty-one Finnish companies (thirty-two observations) which were listed in OMX Helsinki. The sample consisted mainly of large public limited companies, and the companies were operating in seven sectors.

Event study methodology was applied to the actual test. This methodology was originally introduced by Fama, Fisher, Jensen and Roll in 1969 and after forty years from its initial publication it has still been said to present the state-of-the-art in the field of econometric studies. Originally the reason for the use of event study method was to study how quickly new information could be seen to have incorporated in the stock price and this way examine whether markets were efficient. There are various alternations from the test, from which a standardized abnormal results method was utilized in this thesis.

Presumption for the study was that the markets incorporate information efficiently. In other words, the publishing of the firm specific news can instantly be seen in the stock price of the company. As a consequence, the thesis was testing two study questions which were set before the actual test; whether the effect of the announcements is statistically significant on the day of action and whether this effect was statistically significant when taking into account the time period under examination.

The test was done in multiple stages. After identifying the announcement dates, period of time to be studied and the sample of firms to be studied, the actual calculation were carried out. The normal returns were calculated from the market portfolio, which was in this study OMX Helsinki. For the calculation of abnormal returns, the risk adjusted method was applied. Finally the abnormal returns were standardized and cumulative statistics were calculated. Ultimately, the statistical significance of the results was tested.

According to the results found during this thesis, it can be concluded that markets seem to get knowledge concerning the event well in advance the actual announcement date. To find out the reasons for this, a further study should be conducted. It was also noticed that, it seems to take a while for the markets to fully interpret the news. Basis of the results we can conclude that, on the event date the effect of firm specific news has a significant positive effect on the

stock price. In other words, it can be seen that the announcement of firm specific information related to Russian operations results a positive abnormal return on the announcement date. This observation is constant with the efficient market hypothesis.

Due there were only four statistically significant days among the daily statistics, it could be expected that the cumulative results do not contain statistically reliable values. To conclude, nevertheless that the daily statistics claim irregular statistical significance, the cumulative results show that the establishing of firm specific information related to Russian operations do not result a statistically significant abnormal return.

Some further study suggestions might be to examine a wider data while using another method of calculating the normal performance of the companies. Some claim that it might be possible to reach more accurate results while using ordinary least square (OLS) method, which is widely accepted in the field of economic studies, when modeling the regression of normal returns.

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Appendices

1) Descriptive statistics

Firm name	Mean	Standard deviation	Kurtosis	Skewness	Range
Rautaruukki Oyj	0.00285	0.02188	10.16676	-1.54309	0.19484
UPM-Kymmene Oyj	-0.00287	0.01820	3.59101	-1.09617	0.12128
Ahlstrom Oyj	-0.00075	0.01648	7.00206	-0.00382	0.16343
Kemira Oyj	0.00166	0.01355	2.22587	0.66448	0.09068
YIT Oyj	-0.00076	0.02066	2.27671	-0.27793	0.14641
Lassila & Tikanoja Oyj	0.00171	0.00917	2.51048	0.52428	0.06996
PKC Group Oyj	0.00033	0.02839	3.19876	0.68576	0.19892
Ponsse Oyj	0.00218	0.01852	3.41549	0.86524	0.12695
Kone Oyj	0.00085	0.01661	2.31081	-0.36653	0.12808
Nokian Tyres Oyj	0.00167	0.01713	2.62610	-0.12997	0.13431
Stockmann Oyj	0.00123	0.01188	4.33651	-0.44365	0.09176
Sanoma Oyj	0.00187	0.01212	4.02661	-0.74903	0.09447
Atria Oyj	0.00231	0.01240	1.49498	0.12943	0.07595
Kesko Oyj	0.00141	0.01827	45.33296	-4.72304	0.21988
Elcoteq SE	-0.00065	0.08169	64.06249	-0.02788	1.38505
Fortum Oyj	0.00055	0.01730	1.59791	-0.31249	0.12398
M-Real Oy*	0.00092	0.02066	1.03855	-0.47193	0.13728
UPM-Kymmene Oyj*	0.00106	0.02408	1.32161	-0.27418	0.15898
Finnair Oyj	-0.00213	0.01842	3.00047	0.02992	0.13895
SRV Oyj	0.00126	0.03065	3.26835	-0.69906	0.23369
Raisio Oyj	-0.00133	0.01643	2.84336	-0.59901	0.12076
Kesla Oyj	0.00173	0.01980	3.36046	0.48732	0.14158
Nurminen Logistics Oyj	-0.00304	0.02633	43.75702	4.76407	0.30583
Ruukki Group Oyj	0.00446	0.01886	10.71812	2.05594	0.17648
Aspo Oyj	-0.00072	0.01667	12.74032	-2.06451	0.16715
Pöyry Oyj	0.00318	0.02028	2.85921	0.72000	0.15009
Cramo Oyj	0.00115	0.02602	5.15872	-1.05120	0.22195
Tiimari Oyj	-0.00090	0.01600	2.11043	-0.20636	0.11285
Sponda Oyj	0.00059	0.01721	5.77805	-0.43611	0.15142
Capman Oyj	-0.00211	0.02463	0.94541	-0.09525	0.14450
Solteq Oyj	-0.00073	0.01959	1.30394	0.07904	0.13437
Lännen tehtaat Oyj	0.00028	0.01352	2.43549	0.25021	0.09170

*The owners of Metsä-Botnia Oy

The statistics presented here are from the estimation period and event window of the sample companies. Notice the high kurtosis values (the highest with Elcoteq SE) with some of the companies. The values with blue highlighting stand the lowest values and those highlighted with green color stand the highest of the test.

2) An example of a Russian operation related press release.

Solteq expands business operations to St. Petersburg

Solteq Plc Stock Exchange Bulletin on April 16, 2008

Solteq Plc consolidates its business operations by opening a sales office in St. Petersburg. OOO Solteq Russia was entered in the Russian Register of Companies. The objective of the St. Petersburg office is first to boost the Company's maintenance business.

At first, Solteq's services to companies operating in the St. Petersburg area will include maintenance and material management systems and data collection solutions. Existing maintenance clients in Russia include St. Petersburg's water purification plant and Nokian Tyres. Service selection will be expanded to cover data harmonization services and systems for trade and car sales.

Primary target groups in the St. Petersburg area consist of western-owned companies that have recently built production plants or have plans for investing in factories. Primary target industries include process and food industries and energy companies. Other potential clients include public administration organisations investing in utility networks and services.

"We envisage notable potential for maintenance data systems in the St. Petersburg area, and competition appears relatively minor at the moment. Market growth is often accelerated by building of new production plants, which makes companies pay much more attention to maintenance systems. This combined with foreign investments creates interesting opportunities for Solteq. Our objective is to yield a significant part of our turnover in Russia in a couple of years," says Solteq's Managing Director Hannu Ahola.

Solteq's maintenance solutions enable industrial plants to anticipate service needs in their production lines, to monitor fault history, and to manage machinery maintenance material flows from purchase to storage. Maintenance system business is based on Solteq's proprietary software products and comprises one of the Company's primary focus areas. Maintenance experienced the greatest growth in relation to Solteq's other business operations in 2007. Growth is expected to continue in 2008.

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Reference: Solteq Plc company web pages. www.solteq.com

3) News article of the economic situation of Russia

Russian Economic Decline Eased Last Quarter
Published: 11/12/2009 8:38:10 AM By: TradingEconomics.com, Bloomberg

Output of the world's biggest energy exporter shrank 8.9 percent in the third quarter from a year earlier, after contracting a record 10.9 percent in the previous period, the State Statistics Service said in a preliminary estimate on its Web site. From the second quarter, output grew a non- seasonally adjusted 13.9 percent. The office didn't give a breakdown of the figures.

This year's 80 percent rebound in the price of Urals crude, Russia's biggest export, is pushing the country to recovery even as President Dmitry Medvedev called for an end to its "humiliating" reliance on commodities. The economy may grow 3.2 percent in 2010 after slumping 8.7 percent this year, the World Bank said on Nov. 10, marking a bigger turnaround than Russia achieved after its 1998 debt default and devaluation.

Prime Minister Vladimir Putin has pledged 2.5 trillion rubles ($87 billion) in fiscal stimulus to offset the impact of the global recession on the commodity-reliant economy, where energy accounts for 70 percent of export revenue. The central bank has cut the key refinancing rate to a record low 9.5 percent as inflation eased.

The Economy Ministry last month said the decline eased to an annual 9.4 percent. According to the ministry, gross domestic product grew a seasonally adjusted 0.6 percent in the third quarter from the previous three months, and gained a seasonally- adjusted 0.5 percent in September from August.

Oil prices in excess of government estimates will help narrow this year's budget deficit to 7.5 percent of GDP from an earlier forecast of 8.3 percent, Finance Minister Alexei Kudrin said on Oct. 21, enabling the government to maintain the stimulus. Its 2010 budget deficit outlook assumes crude will average $58 a barrel and rise to $60 in 2012.

Rising oil prices have also helped exports recover with sales abroad up 7.6 percent in September from August. From a year earlier, exports are down 33 percent, according to central bank data.

While higher raw material prices have helped commodity exporters and bolstered state finances, companies have lacked funding to invest in continued growth. Rate cuts have so far failed to revive bank lending, hindering companies' efforts to stay afloat.

Lenders' corporate loan books fell 0.7 percent in September from August after staying unchanged the previous month, the central bank estimates. Lending to consumers dropped 1.1 percent for an eighth consecutive monthly decline and delinquent retail loans climbed to 6.4 percent from 6.2 percent.

Reference: Bloomberg. Published 11.12.2009.