UNIVERSITY OF VAASA

FACULTY OF BUSINESS STUDIES

DEPARTMENT OF ACCOUNTING AND FINANCE

Veera Vänskä

STOCK MARKET REACTIONS TO LAYOFF ANNOUNCEMENTS: OWNERSHIP STRUCTURE

Master's Thesis in
Accounting and Finance
Finance

VAASA 2016

TABLE OF CONTENTS **page**

1. INTRODUCTION 11
1.1. Previous studies 13
1.2. Purpose & research hypotheses 15
1.3. Data and methodology 17
1.4. Contribution of the study 18
1.5. Structure of the study 18
2. LITERATURE REVIEW 19
2.1. Layoff announcements and stock returns 19
2.1.1. Negative market reactions 19
2.1.2. Positive and negative market reactions 24
2.1.3. Effects of the business cycle on the stock market reactions to layoff announcements 26
2.2. Ownership structure and firm value 26
3.1. Common stock valuation models 32
4. MARKET EFFICIENCY 34
4.1. Efficient market hypothesis 34
4.2. Three forms of market efficiency 36
4.2.1. Criticism about the semi-strong market efficiency 37
4.3. Information asymmetries and agency theory 38
5. DATA & METHODOLOGY 40
5.1. Data 40
5.1.1. Economic growth periods 42
5.1.2. Research limitations 43
5.2. Event study methodology 43
5.2.1. Structure 44
5.2.2 The significance tests for abnormal returns 48
5.2.3. Problems associated with event studies 48
6. EMPIRICAL FINDINGS 50
6.1. Results for the whole sample 50
6.2. Concentrated and widely held companies 52
6.3. Results for the state ownership firms 54

6.4. Foreign ownership subsample 56
6.5. Results for family/person subsample 58
6.6. Results for institutional ownership subsample 59
6.7. Layoff reason 61
6.8. Growth periods 63
6.9. OLS Regression results 65
7. CONCLUSIONS 70
REFERENCES 74

LIST OF FIGURES **page**

Figure 1: The efficient market reaction versus the slow reaction 35
Figure 2: The three stages of market efficiency 37
Figure 3: Changes in volume of gross domestic product by quarter in Finland 43
Figure 4: Basic structure of an event study 44
Figure 5: Time line of the event study 45
Figure 6: Average abnormal returns and average cumulative abnormal returns for the whole sample 51
Figure 7: Average abnormal and cumulative average abnormal returns for the concentrated ownership subsample 52
Figure 8: Average and cumulative average abnormal returns for the diffused ownership structure firms 53
Figure 9: Average and cumulative average abnormal returns for state ownership subsample 55
Figure 10: Average and cumulative average abnormal returns for the foreign ownership category 56
Figure 11: Average and cumulative average abnormal returns for family/person ownership subsample 58
Figure 12: Average and cumulative average abnormal returns for the institutional ownership subsample 60
Figure 13: Average and average cumulative abnormal returns for reactive layoff announcements 62

LIST OF TABLES **page**

Table 1: Number of layoff announcements in different categories 42
Table 2: Average abnormal returns and average cumulative abnormal returns for the whole sample 51
Table 3: Results for the concentrated ownership subsample 53
Table 4: Results for the diffused ownership firms 54
Table 5: Average abnormal and cumulative average abnormal returns for the state ownership firms 56
Table 6: Results for the foreign ownership firms 57
Table 7: Average abnormal and cumulative average abnormal returns for the family/person ownership firms 59
Table 8: Average abnormal and cumulative average abnormal returns for the institutional ownership firms 60
Table 9: Results for reactive layoff announcement groups 62
Table 10: Results for the proactive layoff announcement subsample 63
Table 11: Results for recession period 64
Table 12: Results for the non-recession period 65
Table 13: Descriptive statistics for CAAR [-1, +5] and for the layoff ratio and its components 66
Table 14: OLS regression results for cumulative abnormal returns 67
Table 15: Interaction term OLS regression results 69

UNIVERSITY OF VAASA

Faculty of Business Studies
Author: Veera Vänskä
Topic of the Thesis: Stock Market Reactions to Layoff Announcements: Ownership Structure
Name of the Supervisor: Janne Äijö
Degree: Master of Science in Economics and Business Administration
Department: Department of Accounting and Finance
Master's Programme: Master's Degree Programme in Finance
Year of Entering the University: 2011
Year of Completing the Thesis: 2016 **Pages:** 78

ABSTRACT

Earlier studies have shown that layoff announcements cause negative and significant stock price reactions. However, some studies have also found that investors react positively to corporate layoff announcements. Thus, the results have been mixed. The research has also shown that the ownership structure of firms is affecting firm values and performance. Therefore, the purpose of this study is to examine the stock market reactions to layoff announcements in Finland and does the reaction diverge between firms with different ownership structures. The sample firms are divided into six different ownership structure groups: state, family/person, foreign, institutional and concentrated or diffused ownership firms. In addition, the effect of business cycle, the reason for layoff and the size of the layoff are examined. The theoretical framework of this study includes market efficiency and stock valuation.

The sample of this study includes 186 layoff announcements during the research period 2007–2014. Event study methodology is used to study the stock market reactions. The event window is 11 days, starting five days prior the announcement and ending five days after the announcement. Furthermore, the cumulative abnormal returns are tested with two OLS regression models, which include dummy variables for different ownership groups, layoff reason and business cycle, a control variable for layoff size and layoff reason interaction term.

The results indicate that layoff announcements cause negative and statistically significant stock market reaction. The regression results show that the state ownership dummy is positive and significant. Thus, state ownership has a positive impact on the stock market reaction to layoff announcements. Therefore, the hypothesis that layoff announcements effects diverge between different ownership structure firms can be accepted. Furthermore, interaction term regression results show that concentrated ownership firms which announce reactive layoff reason have negative and significant effect on the stock price response.

KEYWORDS: Layoff announcement, Abnormal return, Ownership structure, Event study

1. INTRODUCTION

Layoffs are common especially in western, developed countries, where the wages and producing costs are high. Normally layoffs become more popular during recessions or for example financial crisis. However, companies reduce their staff also during the upswings or when the economy is growing steadily. Behind these layoffs is usually the shareholder value - way of thinking, which states that the only purpose for the company is to maximize market value. Nevertheless, often layoffs are necessary for companies to continue operations. For instance, Chen, Mehrotra, Sivakumar and Yu (2001) state that employee redundancies are reasonable and enable firms to survive.

During the years 2006–2014 total of 95 861 persons were laid off in Finland. The biggest amount (19 658) was reduced in 2009. (SAK 2015.) That was most likely due to the financial crisis and bad condition of the economy. In the fast growth period 2007 only 4 373 employees lost their jobs in Finland (SAK 2015). It's only a fraction of the 2009 amount. In the recent years the situation hasn't been much better than during the financial crisis. Layoff announcements continue to appear in the everyday news probably in the future as well.

Companies make redundancies due to many reasons. Layoffs can be for example reaction to changes in the demand or in the competitive situation of the company. In addition, firms may experience financial distress and due to that, they have to reduce their costs. However, pure strategic reasons, restructuring and downsizing are usually common reasons for layoffs. (Lee 1997.) One perspective is that managers see future costs more predictable than future profits and cutting costs by reducing workforce is an easy alternative to improve efficiency (Cascio 1993). Moreover, companies may need to reduce their staff due to new capital or technology changes in the production, which decrease the demand for workers. Despite the announced reasons media reviews layoffs with suspicion. (Chen et al. 2001.) Thus, the media might have an effect on investors' responses.

When layoffs are announced, the stock price is expected to move in either positive or negative direction. Often the reasons behind the layoff affect to the course of the reaction. Earlier studies have mostly focused on examining how the announced reasons for the layoff and the financial condition of the firm influence the stock price reaction. For example, the direction can depend on if the layoffs are proactive or reactive (Kashefi & McKee 2002). The proactivity means here that layoffs are defined as a part of the strat-

egy and reactive instead react to financial distress (Kashefi & McKee 2002). In addition, the positivity or negativity of the reaction can depend on the magnitude of the layoff (Lee 1997).

This study is bringing new perspective to the field and studies whether there is a difference in the reactions due to the ownership structure of the firms. The stock price response on layoff announcements might differ depending on who owns the shares of the lay offing company. For example, the effects can be different due to the psychological feelings of the investors. For instance, for family firms the stock market reaction to layoff announcements can be more negative than for other ownership firms because according to Dyer and Whetten (2006) family firms are regarded to act in a socially responsible way towards their employees and are more concerned about the reputation of the firm. Thus, if a family firm reduces its workforce it might be seen as a negative action by the investors.

Traditionally in European firms the management has been powerful and the shareholders in a relatively weak position. In recent years this setting has begun to change and the position of owners has become stronger. In northern American companies, on the other hand, the ownership has traditionally been broadly diversified and the investments' return has been the main objective for the firms. In contrary, in Europe and, for example, in Japan the ownership structure has been significantly more concentrated. (Knüpfer & Puttonen 2014: 17.). In addition, globalization has increased foreign ownership in Finnish companies. At the same time the pension and insurance institutions have increased their ownership stake and become significant owners. (Jakobsson & Korkeamäki 2014.)

Moreover, in Finland the state owns large portion of shares in big companies. The magnitude of state ownership and the role of the cooperative companies are features that separate Finland from other western countries. In academic research the state ownership has proven to have adverse effects. State owned companies are often criticized about inefficient use of workforce. They concentrate more on preserving the employment rather than financial efficiency. (Jakobsson & Korkeamäki 2014.) Thus, the investors can react more positively to the layoff announcements made by the firms that have state as a largest owner because the layoffs are therefore improving the efficiency of possibly inefficient firm. Furthermore, the state as a shareholder might not react to the layoff announcements and thus, will not sell the shares as for example some individual investors might do. That might lead to a smaller stock price reaction for state ownership firms.

As shareholders, the institutional investors have very different goals than the state. The main goal for institutional owners is to maximize the risk-adjusted returns. Institutional ownership is complicated due to problems with insider trading. Direct participation to the management of companies restricts the possibilities of an investor to trade with the firms' shares. If the institutional investors would actively participate in the management, they couldn't pursue their normal strategy which requires active management of the holdings. Thus, institutional investors have very few incentives to act as the controlling owner. Moreover, research has shown that institutional investors rather vote with their legs than start acting as the controlling owners. (Jakobsson & Korkeamäki 2014.) Therefore, if the institutional owners see the layoffs as a negative thing they might just sell the shares and this could lead to more negative and bigger stock price reaction than for example for state ownership firms.

In simplicity, publicly traded companies can be divided into two different categories: diffusely owned companies where the company management has the authority in decision making and companies which have major shareholders that have power to control the company. (Jakobsson & Korkeamäki 2014.) Studies have found that, for example, large outside owners affect firm valuation positively. Thus, large outside shareholders may act as good monitors for the management. (Bennett 2010.)

1.1. Previous studies

According to the previous studies, the layoff announcements have often had a significant impact on stock prices (see e.g. Palmon, Sun & Tang 1997, Kashefi & McKee 2002). However, the results have been quite mixed. Overall, in most studies the effect has been negative. The studies have mostly sorted the announcements by the reason of the layoff. This chapter presents few of the famous papers studying the effects of layoff announcements on stock valuation. Moreover, some findings about the effects of ownership structure on firm value are discussed in brief.

The effects of layoffs have been studied already since the 1980's, but the most advanced studies were published in 1990's. For example, Worrell, Davidson and Sharma's (1991) study was among the first ones that reviewed economical perspective of layoff announcements. They find negative stock price reaction during the layoff announcements. On the other hand, Palmon, Sun and Tang (1997), for example, find positive effects

when the layoff reason is efficiency enhancing. Kashefi and McKee (2002) and Hahn and Reyes (2004) also find positive changes in the stock prices. In their studies the reasons for the layoffs that cause positive returns are proactivity and restructuring.

According to the earlier studies, layoffs made due to reactivity cause negative stock returns. (see e.g. Lee 1997, Kashefi & McKee 2002, Hillier, Marshall, McClogan & Werema 2007). For example, if the reason is low or decreased demand the reaction has been negative (Chen et al. 2001, Palmon et al. 1997). In addition, Ursel and Armstrong-Stassen (1995) find that investors react more negatively to the first layoff announcement than the later announcements and the reaction is also more negative if the layoff is affecting large percentage of the employees than only a small fraction.

Some studies have tried to find out if there is a difference in the reactions between different cultures. For instance, Lee (1997) studies the differences in stock market reactions to layoff announcements between USA and Japan. The results show that in the U.S. the reaction is more negative than in Japan. This difference indicates that the culture and different ways of employing layoffs might affect to investors reactions. Lee (1997) also argues that large cross-holdings of especially in Japanese companies may affect the market's response.

Even though the prior studies have not taken into consideration the overall ownership structure of the layoffs announcing firm, Filbeck and Webb (2001), however, among other things study the effects of insider ownership. They also control for the level of institutional ownerships in the sample firms. Their results show that the stock price reaction to layoff announcements is negative. They also find that firm size is a good proxy for information asymmetries. The stock price reaction was more negative in small firms than in large firms. This finding indicates that the layoff announcements of small firms contain more new information than the announcements for large firms. However, they find no significant relation between insider ownership and the price response to layoff announcements.

The effect of ownership structure to firm performance has been examined in many earlier studies. However, the impact of ownership structure on stock prices has not been studied too much. Researchers have found that different ownership structures affect firm performance differently. For example, Thomsen and Pedersen (2000) find that institutional investors or banks as owners affect positively to firms' market-to-book values. In addition, they find that family, government and corporate owners affect negatively to

the firm value. On the other hand, in contrast to previous findings Anderson and Reeb (2003) and Villalonga and Amit (2002) discover that founding-family ownership firms perform better than non-family firms.

In addition, Hirschey and Zaima (1989) suggest that ownership structure and insider trading activity are seen as useful information by the market when evaluating corporate sell-off decisions. Their findings prove that the market reaction to firms' sell-off decisions is most positive for closely held firms that have experienced insider net-buying six months preceding the sell-off announcement. Furthermore, Cohen, Gompers and Vuolteenaho (2005) study the reactions of institutional and individual investors to cash flow news. They find that individual investors underreact to the cash flow news and institutional investors take an advantage of it by buying stocks from individuals when positive cash flow news occur. Thus, according to the results of Cohen et al. (2005) institutional ownership and stock returns seem to correlate.

Moreover, research has shown that large outside shareholders have an impact on firm valuation. Bennett (2010) studies how the ownership structure affects the firm valuation in case of asset sale announcements. The results show that stock market reaction to corporate sale announcement is significantly positive and bigger for companies that have large outside owners than for other studied ownership categories.

1.2. Purpose & research hypotheses

The main purpose of this study is to examine, does the stock price reaction to layoff announcements differ due to different ownership structures of the firms. The focus is on those layoff announcements in which the firm first releases the information to the market, i.e. when the firm announces that co-determination negotiations are going to start. The study is done in the Finnish stock market. Moreover, other interesting aspects are studied. For instance, the different growth periods of the economy are taking into consideration when studying the effects. The research questions are:

1. Do the layoff announcements cause abnormal returns in the Finnish stock market?

2. Is there a difference in the stock market reaction to layoff announcements when taking into consideration the firms' ownership structure?

In addition to research questions, there are five hypotheses for this study. The first hypothesis is that:

H_1: Overall the stock price reaction to layoff announcements is negative in Finland.

The background for hypothesis one is in the findings of previous literature. Most of the earlier studies have found negative abnormal returns caused by layoff announcements (e.g. Worrell et al. 1991, Lee 1997, Filbeck & Webb 2001, Hillier et al. 2007). The previous studies are discussed in more detail in the chapter two. Moreover, studies about ownership structure and firm value have found that ownership structure affects firm valuation (e.g. Thomsen & Pedersen 2000, Bennett 2010). In addition, Bennett (2010) finds that ownership structure has an impact in firm valuation in corporate asset sale announcements. Thus, considering the purpose of the study the second hypothesis is:

H_2: The stock price reaction to layoff announcements diverges between different ownership structure firms.

The firms are classified in different categories based on the ownership structure. A firm's ownership structure is determined in the basis of who is the largest shareholder(s) in the company measured by shares and/or votes. The ownership categories are: state ownership companies, where the state owns significant amount of the shares, family/person owned companies, where the family or person is the largest shareholder, diffusely owned companies where there is no substantial shareholder, concentrated ownership, where significant amount of shares and votes are concentrated to one owner, foreign ownership companies and finally institutional ownership companies where an institution such as pension fund or insurance company is the largest owner .

The research period, 2007–2014, includes different growth phases in the Finnish economy. The period includes e.g. growth phase 2007, financial crisis 2008 and Euro crisis 2011–2013 as well as low growth phase 2013–2014. The variability of the growth periods makes the research period very interesting. Previous studies considering the effect of business cycle on market reaction to layoff announcements have found that the reaction is more negative during contraction period than during upturn in the economy (see

Elayan, Swales, Maris & Scott 1998, Marshall et al. 2012). Based on earlier findings the third hypothesis is:

H_3: *Layoff announcements that are made during recession period affect more negatively to the returns than those made in upturn period.*

This study also considers if the size of the layoff has an effect to the abnormal returns. Previous studies have found that the magnitude of the layoff is related to the magnitude of the stock market reaction: larger layoffs cause more negative stock market reaction than smaller ones (see e.g. Worrell et al. 1991, Palmon et al. 1997). Earlier studies have also proven that the announced reason for layoff is affecting the stock market reaction significantly (e.g. Palmon et al. 1997, Kashefi & McKee 2001). Thus, in this study the layoff announcements are also divided into two subsamples to those that are reactive (e.g. declining demand) and to those that are proactive (e.g. efficiency enhancing or restructuring). Therefore, two additional hypotheses are formed based on earlier findings:

H_4: *The larger the percentage of firm's employees under the co-determination negotiations the more negative the stock market reaction is*.

H_5: *Reactive layoff announcements cause more negative stock market reaction than proactive.*

1.3. Data and methodology

The data for this study contains Finnish firms' layoff announcements during the years 2007–2014. In addition, the ownership structures of the downsizing firms are needed in order to categorize the firms into different ownership subsamples. Moreover, stock prices are used to calculate the returns and abnormal returns that are caused by the layoff announcements. This study also considers if the how the layoff reason and the magnitude of the layoff is affecting the abnormal returns. Therefore, the announced layoff reasons and the amount of employees under the co-determination negotiations are collected from the companies' announcements.

The event study methodology is used in this study to calculate the abnormal returns surrounding the layoff announcements. Many previous studies have used the event study procedure in order to find how the stock market reacts to layoff announcements (e.g. Worrrell et al.1991, Palmon et al. 1997). In addition, the abnormal returns are tested with ordinary least squares (OLS) regression procedure.

1.4. Contribution of the study

This study is examining the effects of layoff announcements form a new perspective and trying to find out if the stock price reaction differs between different ownership structures in the redundancies announcing firms. Previous event studies have not taken into account different ownership structures in firms that announce layoffs. Moreover, the research is done in the Finnish markets whereas most of the previous studies are made in United States or in British markets. Furthermore, the research period contains many different growth periods in the Finnish economy which makes it possible to study the effect of the business cycle.

1.5. Structure of the study

The structure of the study is as follows. After the introduction, the previous literature is reviewed in more detail. Third section is the first part of the theoretical background and it discusses the stock valuation. The theory part also includes efficient market theory and agency problem which are discussed in the section four. The fifth part presents the data and methodology used in this study. In the sixth part, the empirical results are presented. Finally, the last part discusses the conclusions of the study.

2. LITERATURE REVIEW

Although stock price reactions to layoff announcements have been studied quite a bit before, still today we can't say clearly how the market is going to react. This section provides deeper look in to the previous studies about layoff announcements effects on stock valuation. Furthermore, studies about ownership structure effects on firm performance and value are presented in this part.

2.1. Layoff announcements and stock returns

The first part of this chapter presents studies that have found negative reactions to layoff announcements. Then the second part presents positive findings. In addition, different aspects that previous research has studied that might effect to the reactions are presented.

2.1.1. Negative market reactions

Worrell et al. (1991) were the first ones to actually study the investors' reaction to layoff announcements. Earlier researchers have ignored strategic effects of layoffs. The studies had examined the effects of layoffs to the workers or the backgrounds of the layoffs. Worrell et al. (1991) underline that stock returns reflect information about layoff announcements and that companies should see them as strategic events in the market. (Worrell et al. 1991.)

Worrell et al. (1991) study 194 layoff announcements over nine years period (1979–1987) in the US market. They study only the layoff announcements' effects not the actual layoffs'. Their research questions are:

1. Do the layoff announcements cause abnormal returns?
2. Does the stock market reaction differ due to different announced reason in the layoff announcement?
3. Does different sized layoffs cause different kind of stock market reactions?
4. Does the expected duration of the layoff affect the stock market reaction?
5. Does the stock market react differently if there has been leakage of the information or not before the layoff announcement? (Worrell et al. 1991.)

Worrell et al. (1991) calculate mean cumulative prediction errors (MCPEs) for different time intervals surrounding the announcement. MCPEs measure the abnormal stock returns. The market model is used to calculate the normal returns. Moreover, they divide the layoff announcements into two different categories based on the stated reason of the layoff. The categories are financial distress and restructuring or consolidation.

The results show that for the financial distress category companies the stock price reaction to layoff announcement is negative and significant. According to the results, in the 11 days' ([-5, +5]) period the stock prices decrease 2,5%. In turn, if the layoff reason is restructuring the reaction is not significantly negative. The results indicate that market reacts differently depending on the stated reason of the layoff. In addition, the findings show that bigger magnitude layoffs cause more negative abnormal returns than smaller size layoffs. Moreover, the reaction is more negative if the layoff is permanent than for only temporary layoffs. (Worrell et al. 1991.)

In part of the study's layoff announcements the information had been leaked in to the market before the announcement. Worrell et al. (1991) find weak evidence that the market reacts differently if the information has been leaked before the announcement. They find marginally significant negative MCPEs also before the announcement if the information has leaked. For those firms which have no information leakage the only significant MCPE occurs on the announcement date. Overall Worrell's et al. (1991) findings suggest that layoff announcements are seen as negative information by the investors and negative abnormal returns are expected to occur. (Worrell et al. 1991.)

Ursel and Armstrong-Strassen (1995) study stock market reactions to layoff announcements in Canadian firms. Their sample includes 137 announcements over the years 1989–1992. Ursel and Armstrong-Strassen (1995) also examine how the reaction differs between the first and following layoff announcements. Moreover, they control for other announcements possibly occurring over the two-day period around the layoff announcements.

The results show that the overall reaction to layoff announcements is negative. Ursel and Armstrong-Strassen (1995) also find that larger layoffs cause more negative stock price reaction than smaller ones. These findings are similar to Worrell's et al. (1991). In addition, Ursel and Armstrong-Strassen (1995) find that the reaction is more negative for the first layoff announcement of a firm than for the following ones. This aspect is not considered in Worrell's et al. (1991) study.

Negative market reactions are also found in Lee's (1997) study. Lee (1997) compares the effects of layoff announcements on stock prices between the U.S. and Japan over the years 1990–1994. Lee (1997) categorizes the layoff announcements into two groups: reactive and proactive layoffs. The reactivity means here that the lay offing firm reacts to the worsened stage of the economy by reducing their work force. The proactive layoff announcements in turn are part of the firm's strategy or restructuring. In addition, Lee (1997) studies if size, duration or the amount of layoff announcements have an effect on the reaction. These effects are tested with a multivariate regression model.

An interesting aspect of Lee's (1997) study is the different attitude towards layoffs in the US and Japan. In the U.S. layoffs are important ways for the firms to survive in the economic and strategic environment. In Japan in turn, people are used to lifetime employment which restricts Japanese firms' strategic layoffs. Furthermore, large cross-holdings are common in Japanese firms and they might have an impact on the shareholders' response on layoff announcements. In Japan large part of shares is held by insurance companies or banks who don't trade frequently. In addition, Lee (1997) states that Japanese firms might be owned by long-term investors that simply don't react to the layoff announcements. These kind of shareholdings are seen as patient capital and might lead to rather small stock price impact. (Lee 1997.)

The results show that the market reactions to layoff announcements differ between the two countries. The investors react more negatively to layoff announcements in the U.S. than in Japan. The reaction is negative in both countries. The findings show that the reaction is more negative in the U.S. markets if the layoff is reactive and the bigger the layoffs are. Positive returns are not detected in Lee's (1997) findings.

According to Elayan, Swales, Maris and Scott (1998), the stock price reaction to layoff announcements can depend on the information about the financial performance of the downsizing company. If investors see the layoffs as a way to improve efficiency and competitiveness a positive market reaction would be expected. On the other hand, the reaction can be negative if the firm's future growth and investment opportunities are seen worse than assumed. In addition to market reactions to layoff announcements Elayan et al. (1998) study the effectiveness of layoffs. They also study other layoff characteristics such as layoff size, if the layoff is anticipated or unanticipated and reasons for layoff and how these factors affect the stock price reaction. Their sample includes 646 layoff announcements over the period 1979–1991. (Elayan et al. 1998.)

Despite the hypothesis that positive abnormal returns would be expected in case of efficiency improving layoffs, Elayan et al. (1998) find only significant negative abnormal returns. This finding suggests that layoff announcements give negative information about the downsizing firm and possibly indicating that the firm's investment or growth opportunities or future cash flows have decreased. Elayan et al. (1998) also find that large magnitude layoffs have more negative reaction that small ones. Furthermore, the industry type has a significant effect on the reaction. Companies in which the human capital plays important role are affected more negatively by layoff announcement than firms in which the physical capital is more important. (Elayan et al. 1998.)

Chen, Mehtora, Sivakumar and Yu (2001) study layoff announcements effects on stock prices and on the financial performance after layoffs. Their study examines 349 layoff announcements from 1990 to 1995 in the U.S. markets. The period under investigation starts from recession and ends to upswing in the U.S. economy. The reasons behind studied layoffs vary from declined demand, cost cutting, low profits to restructuring. Chen et al. (2001) run a multiple regression analysis to study the informational content of layoff announcements.

The results show that layoff announcements have significant negative effect on stock returns. The two-day average abnormal return related to layoff announcements is -1,2 %. The reaction is more negative if the layoff reason is declined demand. On the other hand, if the reason is restructuring the abnormal returns are not significant. Moreover, if the layoffs are expected the reaction is weaker. In addition, Chen et al. (2001) find that poor stock price and operating performance precede layoffs. After the layoffs both stock price and operating performance are improved. (Chen et al. 2001.)

Many of the previous papers have suggested that the stated reason for the announced layoffs is influencing the stock price reaction. Filbeck and Webb (2001) instead study how managerial ownership is affecting to the share price response to the layoff announcements. They also control how the magnitude of the layoff, firm size, level of institutional ownership and profitability are affecting to the reaction. The sample includes 366 layoff announcements from the U.S. companies over the years 1990–1997. The first hypothesis of the study is based on the findings of many previous studies. It states that layoff announcements cause negative abnormal returns. In addition, Filbeck and Webb (2001) suggest that higher level of insider ownership has positive effect on the stock price reaction to the layoff announcements. They state that high level of man-

agerial ownership is signaling to shareholders that the announced layoffs are proactive way to increase shareholder value.

Overall, Filbeck and Webb (2001) find significant and negative stock price reaction to layoff announcements. In the time interval from day -1 to 0 the average cumulative abnormal return is -1,15 % with Z-statistic of -3,94 and for the interval of -1 to +1 -1,24 % with Z-statistic of -3,20. Thus, the results support the first hypothesis of the study. Moreover, Filbeck and Webb (2001) run different OLS regression models to detect the impacts of the control variables on abnormal returns. They find that the reaction is more negative the larger the magnitude of the layoff is. The reaction is also found to be dependent on the size firm size. Layoff announcements made by small firms lead to larger and more negative stock price reactions. However, Filbeck and Webb (2001) do not discover significant relationship between insider ownership or institutional ownership and stock price reaction to layoff announcements.

Most of the studies examining layoff announcements effects on stock prices have considered the U.S. market. However, Hillier, Marshall, McColgan and Werema (2007) study layoff announcements effects in UK market. They also study the financial performance of the downsizing firms surrounding permanent layoff announcements. 322 layoff announcements of companies listed in the London Stock Exchange are included in the sample. The study period is 1990–2000. Hillier et al. (2007) calculate the abnormal stock returns with the market-adjusted model.

Hillier et al. (2007) show that employee layoffs are followed by poor stock price and operating performance. This finding is similar to Chen's et al. (2001) findings. The layoffs are found to occur more likely in more diversified and more indebted companies than their industry peers. However, Hillier et al. (2007) don't find improvements in operating performance after the layoffs. Instead, the employee productivity and corporate focus is improved after the layoffs. Furthermore, they find that the stock market response to the layoffs announcements is significantly negative. Especially layoffs that originate from firms' bad financial condition cause negative reaction. The finding is similar as for example in Lee's (1997) study: reactive layoff announcements cause negative stock price reaction and proactive announcements cause only small insignificant reaction. The mean three-day cumulative abnormal return on the announcement date is -081 %. For plant closure layoff announcements, the mean three-day CARs are -2,12 % and for loss making operations announcements -2,34 %.

2.1.2. Positive and negative market reactions

In contrary to previous studies, positive abnormal returns are found in Palmon, Sun and Tang's (1997) study. They study the stated reasons of the layoffs and their relationship with the abnormal returns of the announcement date. Palmon et al. (1997) use same kind of categories as Worrell et al. (1991): bad market condition or decreased demand and efficiency-enhancing. Palmon et al. (1997) state that layoffs are among many other corporate decisions linked to either a decline or an increase in expected future firm value and financial performance. They show that the stated reasons of layoffs are useful signs for investors since they convey information about the future profitability of the lay offing company (Palmon et al. 1997).

Palmon et al. (1997) study 140 layoff announcements published in the Wall Street Journal and New York Times newspapers over the years 1982–1990. The hypotheses of the study are:

> H_1: The abnormal stock returns for firms that state adverse market condition (efficiency enhancing) for the reason of layoffs should be negative (positive).
> H_2: The magnitude of the abnormal returns should be in direct relationship with the magnitude of the layoffs.
> H_3: The future profitability and sales are worse for the firms that announce an adverse market condition as a reason for layoffs than for the firms that declare efficiency enhancing as a layoff reason. (Palmon et al. 1997.)

Palmon et al. (1997) calculate cumulative abnormal returns (CARs) for three different periods around the announcement date. The CARs are calculated with the market model. In addition, Palmon et al. (1997) examine the cumulative abnormal returns with an OLS regression model that controls for firm size and layoff size.

According to the results, the layoff announcements that have declined demand as the reason for layoff lead to negative abnormal returns. Moreover, if the cited reason for layoff is efficiency enhancing, layoffs are seen as an effective cost-cutting method that increases the value of the firm and as a consequence cause positive abnormal returns. Thus, it seems that the cited reason for layoffs affects strongly to the market reaction. These findings support the first hypothesis of the study. According to the findings, also the other two hypotheses are accepted. (Palmon et al. 1997.) The findings are significant

since earlier studies had not found positive abnormal returns related with layoff announcements.

Positive stock market reactions are also found by Kashefi and McKee (2002). Kashefi and McKee (2002) study 174 layoff announcements made by U.S. companies over seven years (1992–1998). The layoff announcements are divided into reactive and proactive. In Kashefi and McKee's (2002) study a layoff announcement is considered as proactive (positive) when it is associated with increasing sales growth and growth of earnings per share (EPS) and reactive (negative) if company has declining sales growth and lower earnings per share. The sample includes 105 proactive announcements and 69 reactive announcements. The hypothesis states that layoff announcements give useful information about future free cash flows and the valuation of companies.

The findings show that proactive announcements cause positive average abnormal return of 0,986 % on the announcement date. Reactive announcements in turn cause negative average abnormal return of -0,683 %. The plot of cumulative average abnormal returns (CAAR) shows that the information is leaked to the market before the announcement. In addition, for the proactive announcement the CAAR continues increasing after the announcement date which suggests that layoff announcements were not fully anticipated. Kashefi and McKee's (2002) results are in line with previous studies although the cumulative average abnormal returns are bigger. (Kashefi & McKee 2002.)

Hahn and Reyes (2004) also find that stock price reaction to layoff announcements depends on the stated reason of the layoff. Their study examines layoff announcements that concern more than 1000 workers over the years 1995–1999 in USA. The final sample consists of 36 firms announcing layoffs due to low demand and 42 firms downsizing because of restructuring. Hahn and Reyes (2004) use different regression models such as ordinary least squares and EGARCH to test the returns. The results show that low demand layoff announcements cause negative abnormal returns. Positive abnormal returns are detected if the layoff reason is restructuring. The cumulative average abnormal return (CAAR) for the restructuring sample is 1,9 % on the announcement date. Moreover, Hahn and Reyes (2004) test information content of the layoff announcements with different control variables e.g. layoff-ratio, layoff reason and industry. However, they find that the layoff reason is only significant factor influencing the market reaction.

2.1.3. Effects of the business cycle on the stock market reactions to layoff announcements

This study takes into consideration the effects of business cycle in market reactions to layoff announcements. Previous studies have shown that the recession the stock market reacts more negatively to announcements of layoffs.

Elayan et al. (1998) study if the business cycle has an effect to the stock price reactions to layoff announcements. They hypothesize that layoff announcements during contraction period of the economy cause more negative reactions than those made during expansion period. Their sample includes 420 layoff announcements made during expansion period and 183 announcements made during contraction. The results are in line with the hypothesis. Announcements during expansion cause cumulative average abnormal returns (CAARs) of -0,476 % and announcements during contraction lead to CAARs of -1,282%. Both of the findings are statistically significant.

Marshall, McColgan and McLeish (2012) study layoff announcements during the global financial crisis 2008 and during rising markets in 2005 and 2006 in UK market. They expect that stock market will react negatively to layoff announcements during crisis period 2008. This expectation comes from earlier studies that have found negative reactions for firm's that downsize due to declining investment opportunities. They also hypothesize that the market reaction is positive during the rising stock market in 2005 and 2006 because the layoffs are probably viewed as efficiency enhancing during stable product markets. The sample includes 67 layoff announcements in upturn period 2005–2006 and 78 announcements during the year 2008. (Marshall et al. 2012.)

According to the results, the market reaction to layoff announcements during upswing market 2005–2006 is positive and significant causing cumulative abnormal returns of 0,51%. As expected, the reaction to layoff announcements made during financial crisis is significantly negative (-1,75%). The reaction is negative in 2008 despite the reason for layoff. (Marshall et al. 2012.)

2.2. Ownership structure and firm value

This section presents studies handling different ownership structures and how they affect to share prices. There are several papers with different perspectives studying the

effects of corporate ownership structure on the performance or value of the firm. The aim is to show that the firm value or performance can differ due to different ownership structures of firms.

Hirschey and Zaima (1989) study whether investors consider the recent insider trading pattern and ownership structure of the firm as useful for evaluating corporate sell-offs. The hypothesis is that closely held firms' corporate sell-off decisions combined with recent net-buying of insiders are followed by positive stock price reaction. And on the contrary the widely held firm's sell-off decisions combined with recent insider net-selling lead to much less positive market reaction. Here closely held firms are defined as firms where insiders own at least five percent of the shares. In addition, a firm is considered as widely held if the insiders own less than five percent of the shares. Hirschey and Zaima (1989) use event study methodology to study the impacts of the sell-off decisions on the valuation. The investigation period starts from 1975 and ends to 1982.

Hirschey and Zaima's (1989) main finding is that investors actually seem to consider insider trading and ownership structure as useful information when evaluating the corporate sell-off decisions. The market reaction to the sell-off decisions is found to be most positive for the closely held firms that have experienced insider net-buying six months preceding the announcement. For the widely held firms the reaction to sell-off announcements combined with insider net-selling activity is neutral. (Hirschey & Zaima 1989.)

Thomsen and Pedersen (2000) study how ownership structure affects firm performance in 435 largest European companies over the years 1990–1995. The ownership structures of the companies are classified based on the largest shareholder of the company. There are five ownership categories in the study: institutional investor, bank, non-financial company, family/person and government. Economic performance is measured with asset returns and the shareholder value is evaluated with market-to-book ratio. Thomsen and Pedersen (2000) also control for industry and nation effects.

Their first hypothesis is that the performance of a company is a bell-shaped (increasing first and then decreasing) function of the ownership stake of the biggest owner. The second hypothesis states that the creation of shareholder value will be greater if the largest owner is a financial institution. Then, the third hypothesis is that if the largest shareholder is an institution, shareholder value increases with the ownership. Finally, the fourth hypothesis says that ceteris paribus, if the largest owner is an institution the

sales growth will be lower than for other ownership classes. (Thomsen & Pedersen 2000.)

According to the results, firms that have bank or institutional investor as a largest owner tend to have higher market-to-book values. Other categories, family, government and corporate ownership have negative influence on the market-to-book value when comparing to the institutional investors. From this finding one can interpret that those owners might have more nonprofit goals than do financial institutions as investors. Thus, if government would privatize and families let go their control shareholder value might be created. The same kind of findings are detected with return on assets (ROA). However, sales growth is found to be the higher for family or another company ownership categories. Thomsen and Pedersen's (2000) results are in line with assumptions such as family owners want to ensure the long-run persistence of their company. Governments as owners instead have different goals. They for example, consider social welfare and employment as important values. Moreover, corporate owners want to achieve corporate growth and transactions. (Thomsen & Pedersen 2000.)

Cohen, Gompers and Vuolteenaho (2005) compare how institutional and independent investors react to cash flow news. The background for this study comes from previous studies that suggest that firm-level stock prices tend to underreact to future cash flow news. Prior literature also shows that stock returns and institutional investors' buying are correlated. The data for the study consists of publicly traded US companies' quarterly reports from 1980 to 1999. Vector autoregression (VAR) model is used to study the differences in investors' behavior. Cohen's et al. (2005) main purpose is to measure the institutional ownership response to cash flow news.

Their main finding is that institutional investors utilize the underreaction and buy (sell) stocks from individual investors when positive (negative) cash flow news occur. The VAR results show that 25 percent cash flow news lead to institutions purchasing two percent of the outstanding shares. They also find that institutional investors don't follow momentum strategy. Instead they follow cash-flow-momentum strategies. In addition, institutions sell 5 % of their stocks to individual investors when the share price rises 25 % without any related cash flow news. (Cohen et al 2005.)

Anderson and Reeb (2003) in turn study the relationship between the founding-family ownership and firm performance in S&P 500 firms in 1992–1999. Founding-family owners differ from other investors due to their poorly diversified portfolios and long-

term investments. Prior literature had mostly found poor performance with family ownership firms. However, concentrated large shareholders might benefit the firm by aiming to different objectives like firm growth, technological innovation or survival of the firm. (Anderson & Reeb 2003.)

Anderson and Reeb (2003) measure the firm performance by ROA, EBITDA and Tobin's q. They use a two-way fixed effects model to measure the relation between the ownership and performance. In addition, firm characteristics and industry are controlled in the regressions.

In contrary to Thomsen and Pedersen (2003) findings about the performance of family firms, Anderson and Reeb's (2003) findings show that founding-family companies perform better than nonfamily ownership companies. The findings are significant both economically and statistically with all of the performance measures. For example, Tobin's q is found to be approximately 10 % higher for family firms than for nonfamily firms. The performance is found to be better if the CEO is a family member than with outsider CEO. All in all, Anderson and Reeb's (2003) results show that in well-regulated and transparent markets the ownership of families reduces agency problems and leads to better firm performance.

Villalonga and Amit (2005) also study how family ownership, control and management affect firm value. Their sample includes 508 firms listed on the Fortune-500 during the years 1994–2000. 37% of the sample firms are family firms. They define the family firms as: "Firm whose founder or a member of the family by either blood or marriage is an officer, a director, or the owner of at least 5% of the firm's equity, individually or as a group". The value of the firms is measured with Tobin's q which is the ratio of firm's market value to total assets. In here Tobin's q is calculated as market-to-book value. (Villalonga & Amit 2005.)

Villalonga and Amit 2005 find similar results as Anderson and Reeb (2003). The results show that the mean Tobin's q for family companies is 2,17 and for non-family firms it is 1,95. Thus, family firms perform better. Villalonga and Amit (2005) also divide the family firms into three different categories based on what kind of family ownership or lead firm has. Type I family firm has CEO from the family (founder or descendant) and control-enhancing mechanisms. Type II family firms don't have family member as a CEO but have control-enhancing mechanisms. Type III family firms have family member as a CEO but don't have control-enhancing mechanisms. Those firms that don't

have either of the mentioned are categorized as nonfamily firms. After the categorization it is found that the family ownership creates value only with certain control of family and management. For example, value is created when the CEO is the founder or the chairman. However, if the CEO is descendant the value is demolished. In addition, the firm value is approximately 25 percent higher for firms that have founder as a CEO and control-enhancing mechanisms than for non-family firms. (Villalonga & Amit 2005.)

Bennett (2010) studies, does corporate ownership structure affect firm valuation in case of asset sale announcements. In his study the sample firms are classified into three different ownership structures: large outside ownership, large insider ownership and widely held firms. The market reaction is examined with event study methodology. Moreover, the cumulative abnormal returns are tested with a dummy variable regression in order to detect the differences between the ownership structure groups.

The main finding of Bennett's (2010) study is that the ownership structure affects the firm performance. The stock market reaction to asset sale announcement is significantly bigger for large outside ownership companies than for other ownership categories. In addition, the reaction is positive and significant for the large outside ownership sample for the both the selling and buying firms. Widely held and large insider ownership samples experience negative market reaction but only for the widely held sample the reaction is significant. For the selling firm the findings are quite similar. One difference is that the stock market reaction for widely held sample is not significant. (Bennett 2010.)

Bennett (2010) also investigates that does the ownership structure of the firm other side of the deal is affecting to the reaction. One finding is that firms that deal with large inside shareholder firms experience lower stock price reaction than dealing with other ownership structure companies. In addition, the effect of the disclosure price to the reaction is studied. In contrary to prior research no effect is found. All in all, Bennet's (2010) findings indicate that large outside owners might have positive effect on the firm performance due to their power of monitoring the management.

3. STOCK VALUATION

When studying some event's or announcement's effects on stock prices the most important and relevant theoretical frameworks are stock price formation and efficient market theory. In this section stock valuation is discussed. Purpose of this section is to explain which factors affect the value of stock and why stock price might change after layoff announcement and how different factors impact on the price. Second part of the chapter presents some common stock valuation models. The presented models are fundamental.

The salaries of employees can be seen as debt or fixed costs because they have to be paid even if the financial condition of a firm is poor. Consequently, when being in a financial distress a high debt company can either reduce their debt or other fixed costs or alternatively cut the salary costs (meaning lay offing) to improve the financial condition. Probably reducing debt or for example closing plants is much harder than cutting employee costs.

The magnitude of debt in a firm affects to the required return of the stock which in turn affects to the price of the security. The more debt firm has the bigger the required rate of return should be (Modigliani & Miller 1958). According to Modigliani and Miller's (1958) theory, the relation of rate of return and debt can be seen in the following equation:

(1) $$E(r_i) = r_0 + (r_0 - r_D)\frac{D}{E}$$, where

$E(r_i)$ = expected return for stock i
r_0 = return for stock of zero debt firm
r_D = return for stock of firm with debt
$\frac{D}{E}$ = debt-to-equity ratio.

When the debt ratio of a firm increases the beta of the firm's stock rises and due to that the expected return increases. The relation of expected return and beta can be seen from the equation of the capital asset pricing model (CAPM) below (Bodie et al. 2014: 297).

(2) $$E(r_i) = r_f + \beta_i[E(r_M) - r_f]$$, where

$E(r_i)$ = expected return for stock i
r_f = risk-free return
β_i = beta for stock i
$E(r_M)$ = expected return for the market portfolio.

Thus, reducing debt should lower the required rate of return of stock. Based on the stock valuation models we can say that the rising of required rate of return affects negatively to the stock price. Consequently, replacing debt reducing with layoffs the required rate of return decreases and thus, the stock price should increase.

Layoffs can also affect to the dividend expectations. When a firm cuts the employee costs more money is left for the distribution of dividends. In that case the dividend expectations are assumed to be increasing. When investors are expecting larger dividends the value of the stock increases. The connection of dividend expectations and required rate of return is described in the dividend based stock valuation models presented in this chapter.

3.1. Common stock valuation models

Valuation of stocks is not simple. Companies have no obligations to pay anything for the investors unlike they have to pay for the creditors. This is causing uncertainty in valuation. In addition, future cash flows are unknown and due to that they need to be somehow estimated and forecasted. (Knüpfer & Puttonen 2014: 93.) Thus, the value of stock is the present value of the future cash flows. It is determined the same way as the value of bonds. However, estimating future cash flows is more difficult for stocks because the revenues are dividends and dividends depend on the future success of the company. Moreover, the maturity of stocks is causing more difficulties in the valuation because it is assumed to be perpetual. Estimating cash flows to perpetuity is not possible in practice. (Nikkinen, Rothovius & Sahlström 2002: 141.) Regardless of the difficulties dividend based models are widely used in valuation. Moreover, they are theoretically best way to value stocks because dividends are only cash flows that investors can receive from companies (Nikkinen et al. 2002: 149–150). Equation 1 presents the basic dividend discount model.

(3) $$P_0 = \frac{D_1}{1+r} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \cdots$$

According to the equation, the present value of the stock P_0 is the sum of future dividends D_t discounted with the required rate of return r. (Nikkinen et al. 2002: 150.) If the future dividends are expected to stay constant the equation becomes:

(4) $$P_0 = \frac{D_1}{r}$$

If the growth speed of the dividends is assumed to be constant the equation is as follows:

(5) $$P_0 = \frac{D_1}{r-g},$$

where g is the growth speed of dividends. Based on the equation we can say that the faster the growth of dividends the higher the present value of the stock is. The equation is called Gordon's growth model (constant growth dividend discount model). (Nikkinen et al. 2002: 150.) The Gordon's growth model has three expectations:

1. The stream of dividends is perpetual.
2. The dividends grow with speed g.
3. The required rate r is bigger than the growth speed g. (Fuller & Farrell 1987: 276–277.)

The value of stock can be also calculated with free cash flow (FCF) model. It is based on calculating the current value of firm's free cash flows. Thus, instead of dividends the free cash flows are discounted to measure the value of stock. Comparing to the dividend based model and other profit based models advantages of using FCF model are that the dividend policy and accounting differences don't affect the value. In practice the model is used similarly as for example the dividend discount model. The equation of FCF model is as follows (Nikkinen et al. 2002: 152–153.):

(6) $$P_0 = \frac{FCF_1}{1+r} + \frac{FCF_2}{(1+r)^2} + \frac{FCF_3}{(1+r)^3} + \cdots$$

4. MARKET EFFICIENCY

Another important theoretical aspect related to the research problem is the efficiency of the financial markets. According to the efficient market hypothesis, stock prices should reflect all relevant information that's available in the market (Fama 1970). Thus, the prices should be correct and investors should immediately react to new information. Announced layoffs tell important information about the present and expected future financial condition of the downsizing firm. From the investors perspective these announcements should be taken into consideration when thinking about the future cash flows and growth opportunities of the firm. Thus, the expected financial condition of the firm is being valued by the market when new information is announced.

This section discusses the idea of efficient markets in Fama's (1970) framework and focuses on the semi-strong form market efficiency. Moreover, the agency problem and information asymmetry are discussed in this section.

4.1. Efficient market hypothesis

The efficient market hypothesis expects that the financial markets are informatively efficient. They reflect all available information in the markets. Moreover, the information should be available for every market participant in all times. In the efficient markets all participants should also react in the same way to the information appearing on the market. Thus, nobody can earn abnormal returns. (Fama 1970.)

According to the hypothesis, stock prices should always change when new relevant information appears. Therefore, when, for example, layoff announcements are published the effects should be immediately seen in the prices. The figure 1 compares the price reaction to positive information in efficient and inefficient markets. The upper line illustrates the efficient reaction and the lower presents the inefficient one. As can be seen the efficient market reaction is instant and the effects of the event are included to the price immediately. In the inefficient reaction it takes time that the stock price reflects the real value of the company.

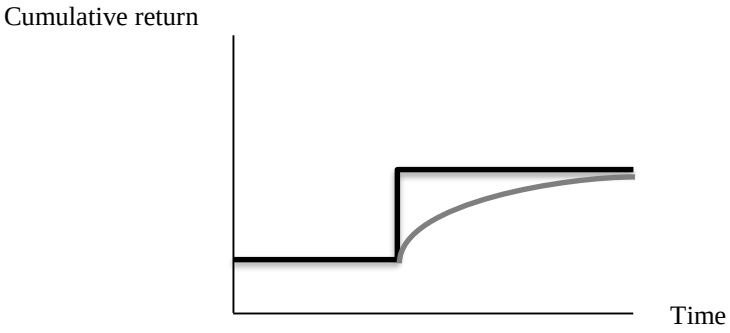

Figure 1. The efficient market reaction versus the slow reaction. (after Knüpfer & Puttonen 2014: 166.)

The reaction can be also biased upwards or downwards if the market is inefficient. Underreaction has been detected for example after earnings announcements (see. Bernard & Thomas 1989). Ball and Brown (1968) note that even after the earnings announcement the cumulative abnormal returns continue to drift. These findings are speaking against the idea of the efficient financial market.

New information is never anticipated. Therefore, stock prices are changing unpredictably. This is called the random walk theory. According to the random walk theory, the price changes are random and can't be predicted. Consequently, in the efficient market yesterday's return doesn't tell anything about today's return. (Nikkinen et al. 2002:82.) Kendall (1953) was the first one to bring up the idea of random walk. He studies stock and commodity prices and find no patterns in the prices. Kendall (1953) notices that the data behaves like a wandering series.

The efficient market hypothesis has been studied since the year 1900. However, the idea of dividing the efficiency in to three forms became popular not until 1950, when the area of study was more developed. (Keane 1983: 11.) In addition to the research of the efficiency, overall the efficiency of financial market has improved significantly over the recent decades, which is mostly due to internet. Nowadays anybody can get information fast and cheap whereas before it was only available for large investors. (Nikkinen et al. 2002: 82.)

4.2. Three forms of market efficiency

Often the market efficiency is classified in to different categories based on what kind of information prices include. Fama (1970) categorized the market efficiency in three forms: weak, semi-strong and strong form market efficiency.

In the weak form efficient market stock prices contain information only about historical prices Fama (1970). Thus, nobody can earn excess returns by looking at yesterday's prices. The weak form market efficiency can be tested with technical analysis. Technical analysis studies realized past prices in order to find price patterns. If the market reacted to new information slowly enough price patterns could be found. However, if the market is efficient in the weak form, technical analysis is useless when making investment decisions. (Nikkinen et al. 2002: 83). Researchers have tested the weak form efficiency by testing if some trading rules are working in the market.

The semi-strong market efficiency means that the stock prices contain all the publicly available information. If the market is semi-strong form efficient no one can earn excess returns using public information. Publicly available information is, for example, annual reports or announcements of companies. (Copeland, Weston & Shastri 2005: 355.) To test the semi-strong form market efficiency researchers have studied how fast the market reacts to different news or public announcements. This can be done by calculating the abnormal returns around the studied event date. (Brealey, Myers & Allen 2014: 318).

The most efficient form, the strong-form efficiency of the market is reached if the prices contain public as well as insider information. Thus, nobody can receive excess returns using any information even insider information. (Copeland et al. 2005: 355.) The strong market efficiency has been studied by testing if professional mutual funds outperform the market (Brealey et al. 2014: 319).

The different market efficiency stages are dependent on each other. If the market is efficient on semi-strong level, it has to be efficient on the weak level too. Thereby also the strong form efficient market has to be efficient on the two lower levels, otherwise the prices wouldn't include all relevant information. (Keane 1983: 11.) The figure 2 demonstrates the relations of market efficiencies.

Many research results show that financial markets would be efficient on the semi-strong level but doesn't fill the strong form efficiency. Thus, according to these results, insid-

ers can earn excess returns. (Copeland et al. 2005: 373, 389.) Not even the U.S. market seem to fill the strong form efficiency although it has been considered the most efficient one in the world (Nikkinen et al. 2002: 86). Fama (1970) suggests that the strong form doesn't necessarily describe the real world but it can be rather used as a help when comparing deviations from the market efficiency.

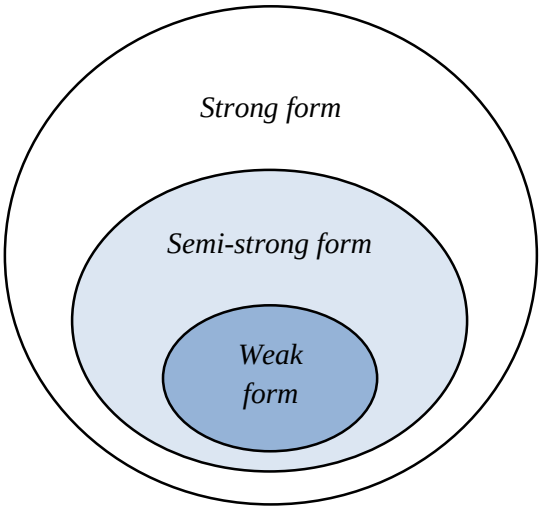

Figure 2. The three market efficiency forms (after Nikkinen et al. 2002: 84).

The most relevant market efficiency form for this thesis is the semi-strong form market efficiency because layoff announcements are both new and publicly available information. The strong form efficiency is not applicable hence we can't assume that everyone has the same amount of information available. Information asymmetry is discussed later in this chapter. The semi-strong efficiency is tested with event study methodology, which is presented in chapter five.

4.2.1. Criticism about the semi-strong market efficiency

A lot of criticism have been presented about the efficient market hypothesis. Many economists have claimed that share prices are at least partly predictable based on past price patterns and some fundamental measures and hence investors can earn excess returns by predicting prices (Malkiel 2003). In addition, researchers have found anomalies that can be utilized to achieve abnormal returns. In finance, anomalies are long-lasting

deviations from the market efficiency. Their existence can't be fully explained. (Knüpfer & Puttonen 2004: 172.)

Most studies testing the semi-strong market efficiency have been studied the speed of stock market participants' reaction to new published information. When studying the particular market efficiency level also the accuracy of the reaction should be taken into account. Empirical findings have often suggested that the reaction to new information is fast but the market doesn't always assimilate new information correctly. (Fuller & Faller 1987: 99.) Based on these findings the prices aren't fully reflecting publicly available information.

4.3. Information asymmetries and agency theory

In a situation where a company lays off their work force, the management of the company is expected to have better knowledge of the motives behind the layoffs than investors. This is called asymmetric information problem. The problem of asymmetric information arises when some have better or more information than others (Copeland et al. 2005: 415).

A good example of information asymmetry is Akerlof's (1970) model about purchasing and selling used cars. In Akerlof's (1970) example there are four types of cars, bad ("lemon") or good ones and new and old ones. The buyers don't know if the cars are good or bad before they have used them for a while. Asymmetric information arises when the owner or seller has more information about the car than the possible buyer. Despite the quality of the car, they are sold in the same price, because the potential buyer can't know if it is a good or bad car. In a result the seller can't receive the true value of the car. Based on this example one can interpret that also the financial market undervalues good opportunities and overvalue bad ones. In addition, management like car sellers clearly have more information about the true value of the firm than the outside equity owners.

In private family owned firms the information asymmetry is small. In contrast, the asymmetry is large in publicly traded diffusely owned companies. In between there are publicly traded concentrated ownership companies in which the asymmetry might also be big. (Knüpfer & Puttonen 2014: 22.)

The management makes the decisions and acts as an agent for the investors which are the principals. The possible differing interests of management and investors may lead to inefficient allocation of recourses in a firm. This is called the agency problem or the principal-agent problem. (Copeland et al. 2005: 415.) When managers (agents) and owners (principals) have different interests and both are maximizing their own utility the problem arises. Principals can limit the actions of agents with incentives and by incurring monitoring costs limiting the unwanted actions of agents. The costs that result from monitoring and divergent interests of principals and agents are called the agency costs. According to Jensen and Meckling (1976), agency cots include monitoring costs by the principals, bonding expenditures by the agent and the residual loss. (Jensen & Meckling 1976.)

The agency problem is important when considering the ownership structure of firms. In diffusely owned companies the separation of the management and control are causing agency problems (Jensen & Meckling 1976). In contrast, in family owned companies where the management is part of the family, the use of power is naturally the easiest because the interests between management and owners are not dissenting (Knüpfer & Puttonen 2014: 21).

5. DATA & METHODOLOGY

This part presents the data and discusses methodology used in this study. First, the data is reviewed in more detail and then the event study methodology is presented.

5.1. Data

As mentioned earlier the needed data components for this study are the layoff announcements, historical stock prices and the ownership structures of the redundancies announcing companies. The returns for the stocks are calculated using the historical prices. The study is done in the Finnish stock market using Nasdaq OMX Helsinki Stock Exchange listed stocks data. The research period is seven years starting from the beginning of January 2007 and ending to December 2014.

The sample includes 186 layoff announcements. The announcements are gathered from Central Organization of Finnish Trade Unions (SAK), Nasdaq Central Storage Facility, Kauppalehti and Talouselämä databases. The sample firms are divided into portfolios by the ownership structure to examine the differences in reactions. There are eight ownership categories used in this study: concentrated, diffused, family/person, state, institutional, foreign and others such as cooperatives and foundations that don't belong in any of the previous categories. Layoff announcing firms are divided into different ownership categories based on the largest shareholder as for example in Thomsen and Pedersen's (2000) study. The ownership data is taken from the annual reports, companies' websites or either from Orbis database depending on the data availability at closest date available to the layoff announcement.

La Porta, Lopez-De-Silanes and Shleifer (1999) determine concentrated ownership as having an ultimate owner who owns at least 20 percent of the voting rights. They argue that the 20 percent is justifiable to use because it is generally enough to achieve effective control of a company. All other firms that don't have an ultimate owner are classified as widely held in La Porta et al. (1999) study. In this study the companies are also classified as concentrated ownership companies if the largest owner owns at least 20% of the shares and/or the votes. Other firms in which the largest owner own less than 20% of the shares are classified as diffusely owned. 103 of the sample observations are categorized as concentrated and 83 as diffused based on the 20% rule.

In addition, the firms are divided into different ownership structure categories based on who is the largest owner in the firm. Thomsen and Pedersen (2000) use similar classification method in their study. A firm that has family or person as a largest shareholder are classified in to the family/person category. 73 of the sample layoff announcements are made by firm that has person or family as a largest shareholder. The shares can be owned directly or indirectly through a firm. Moreover, a firm is considered as a state owned if the state owns significant amount of the shares and as an institutional owned if an institution such as pension funds and insurance companies is the largest shareholder. 28 of the sample layoff announcements are made by companies that have state as a largest owner and 19 announcements made by institutionally owned companies. Furthermore, a firm is categorized as foreign owned if the largest owner is foreign. 20 of the sample firms are made by foreign ownership firms.

In some of the sample companies where the largest owner's ownership stake is not substantial (under 5%). Owner that owns at least five percent is considered as large block shareholder (Financial Times 2016). Therefore, these companies where the largest owner owns under five percent of the shares is not classified into any of the groups other than widely owned companies. There are 25 layoff announcements made by firms in which the largest owner owns under five percent of the shares. In addition, there are 21 layoff announcements made by firms where the largest owner is a co-operative or some other organization that could not be categorized in to family/person, state, foreign or institutional ownership category. These announcements are just classified into concentrated or widely held companies.

The sample layoff announcements are also classified into two different categories based on the layoff reason. The two subsamples are proactive layoff announcements such as efficiency enhancing or restructuring and reactive layoff announcements which are reactions to decreased demand or adverse market conditions. Moreover, in order to study the impact of recession the layoff announcements are divided into two subsamples based on whether they are made during recession or not. The next chapter discusses the economic growth periods in more detail. The table 1 shows how many layoff announcements (LA) are in different ownership categories and how many of them are reactive or proactive and which of them are made during recession.

Table 1. Number of layoff announcements in different categories.

	Concentrated	Diffused	Family/person	State	Foreign	Institutional
Number of LAs	103	83	73	28	20	19
Number of Reactive LAs	53	41	43	17	10	8
Number of Proactive LAs	47	41	30	11	7	10
Number of LAs During Recession	62	48	45	18	12	13

Furthermore, some restrictions have been made to the data. First, the layoff announcements that consider under 50 persons have been left out from the sample in order to ensure that the layoffs are economically significant. Moreover, firms that have made other important announcements such as earnings or dividend announcements surrounding the layoff announcement dates have been restricted from the sample in order to capture particularly the effect of layoffs. In addition, the layoff announcements that consider only temporary layoffs are left out from the sample.

5.1.1. Economic growth periods

In order to study the effects of business cycle to the layoff announcements different economic growth periods need to be determined. A common way to determine recession is that the country is in a recession when the gross domestic product diminishes two subsequent quarters. According to this definition, there are two downturn periods in the research period (2007–2014). The first recession period starts from the fourth quarter of 2008 and ends to fourth quarter of 2009. The second downturn takes place on the second quarter of 2012 and ends to the first quarter of 2014. The upturn or non-recessionary periods occur then from the first quarter of 2007 to the third quarter of 2008 and from the first quarter of 2010 to the first quarter of 2012 and in finally the three last quarters of 2014. By following this definition there are 111 layoff announcements that are made during downturn period and 75 announcements made during non-recessionary period. The figure 3 shows the changes in volume of GDP by quarter in Finland during the research period.

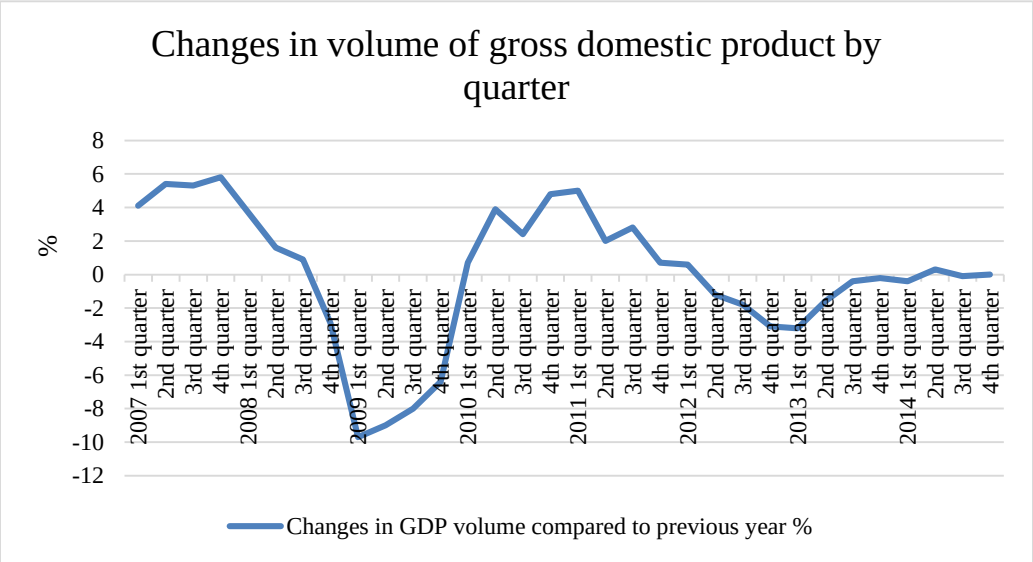

Figure 3. Changes in volume of gross domestic product by quarter in Finland

5.1.2. Research limitations

The use of Finnish data is causing limitations to the research. There are only a few observations in some of the ownership categories. This can be considered as limitation when measuring the impact of ownership structure to the stock price reaction to layoff announcement. Especially the foreign and institutional ownership categories have too little observations.

5.2. Event study methodology

The purpose of event studies in finance is to measure, how some particular event is influencing in the market value of a company. It's supposed to be a useful method because the effects of an event are assumed to be reflected in prices immediately. (MacKinlay 1997.) Thus, the efficiency of the market reactions to new information can be tested with event studies. The event study methodology is assuming that the financial markets are functioning efficiently. In other words, the aim of an event study is to detect the abnormal returns caused by some specific events (Peterson 1989). It is an important methodological technique in market based empirical studies especially in accounting

and finance (Bowman 1983). The event study methodology is often used to detect, for example, the layoff announcements effects on stock prices (see e.g. Palmon et al. 1997).

The background of the present event study methodology is in Fama, Fisher, Jensen and Roll's (1969) and Ball and Brown's (1968) studies. Ball and Brown (1968) study stock price reactions to annual earnings announcements. Fama et al. (1969) in turn, investigate how stock splits effect on stock prices. These studies, using event study methodology, set the base for a significant research area. (Bowman 1983).

The event study methodology has been used for two main reasons: 1) to test whether the prices efficiently reflect the information available in the market and 2) in efficient market conditions, to investigate the influence of some event on the stock prices. (Binder 1998.) Previous studies examining the stock price reactions to corporate downsizing announcements have used the event study methodology. Particular method is also used in this study to detect impact of layoff announcements on companies share prices.

5.2.1. Structure

Many different kinds of techniques are used in event studies. However, the structure of an event study can be described in five steps. The steps are shown in the figure 3 below. The presented structure is concentrating on market efficiency tests. (Bowman 1983.)

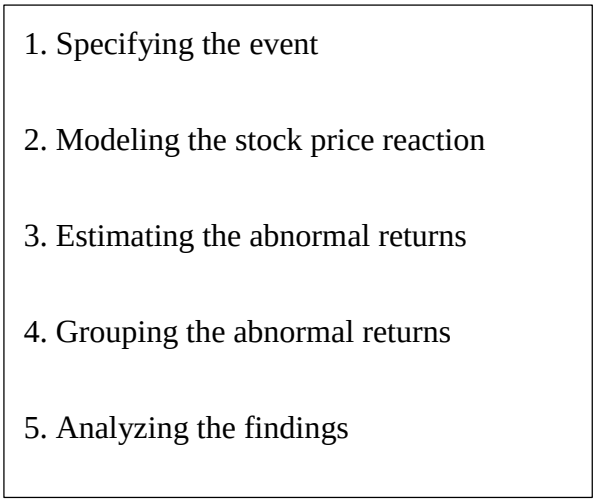

Figure 4. Basic structure of an event study. (Bowman 1983.)

When conducting an event study, the first step is to define the event of interest. This is very important step because it determines the hypotheses that can be tested. Often in an event study the effects of a single event are studied, for example specific annual report. One can also investigate the impact of a type of event. (Bowman 1983.) For instance, layoff announcements made by different companies are an example of type of event.

When studying a type of event more exogenous influences are affecting the results. This difference is due to many different time periods in the observations (Bowman 1983). More problems relating to event studies are discussed later in this section.

In addition, choosing the right timing of event is very important part of identifying step. The event date should be the date when information first becomes available to the market. Nevertheless, it is possible that the information has leaked to the market before the actual announcement. (Bowman 1983.) Also the information may be published through different sources in different times. For example, a company might release information today and the media may report this information tomorrow. Thus it isn't always clear when the information reaches the public. (Peterson 1989.) In this thesis the chosen event date is date in which the layoff announcement is released.

The time period over which the stock prices of the studied firms involved in this specific event is called an event window. Identifying this event window is also a key part of the first step. The event window is often chosen to be a few days surrounding the event date. (MacKinlay 1997.) Normal lengths of event windows are three, five or ten trading days (Benninga 2008: 372). The normal returns are estimated with estimation period before the event. Normal returns are expected returns if there is no event. (Peterson 1989.) The length of the estimation window is usually 252 trading days (Benninga 2008: 373). In this study the chosen estimation window is 200 trading days. The same length of the estimation window is used for example by Worrell et al. (1991). The event window is 11 days, five days prior and after the event date [-5, +5]. The time line of this event study is shown in figure 5.

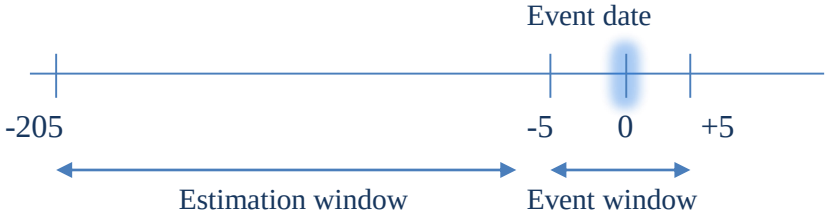

Figure 5. Time line of the event study.

The second step includes the modeling of the share price reaction. In practice it means the predicting of the direction and magnitude of the price reaction for different firms. One can also just hypothesize that the expected price reaction is the same for all the studied firms. Often in event studies the price reaction is expected to vary across firms and to be dependent on the information related to the studied event. (Bowman 1983.)

The third step in the event study procedure is to estimate the abnormal or excess returns. Abnormal return is the actual realized return following the event over the event window minus the normal return of the firm over the event window (MacKinlay 1997). There are several methods for estimating the abnormal returns. Commonly used methods are: unadjusted or mean adjusted returns, risk-adjusted returns and risk controlled portfolio returns. Capital Asset Pricing Model (CAPM) is an example of risk-adjusted method. (Bowman 1983.) Next few models to calculate abnormal and normal returns are presented. The abnormal returns can be calculated using following equation:

(7) $$AR_{it} = R_{it} - E(R_{it}|X_t),$$

Where AR_{it} is the abnormal return, R_{it} is the actual return and $E(R_{it}|X_t)$ is the normal expected return for period t. X_t sets the conditions for the model calculating normal returns. There are two commonly used alternatives for calculating normal returns: 1) the constant mean return model, where the condition X_t is constant and 2) the market model, where the X_t is the market return. The constant mean return model measures the normal returns by the averages of the returns. (MacKinlay 1997.)

(8) $$R_{it} = \mu_i + \delta_{it} \ ,$$
$$E(\delta_{it}) = 0 \quad var(\delta_{it}) = \sigma_{\delta i}^2 \ ,$$

Where R_{it} is the return for stock i in the period t and δ_{it} is the term for disturbance for security i in period t, which has expected value of zero and variance $\sigma_{\delta i}^2$. (MacKinlay 1997.)

The other common method for defining the normal returns is the market model shown in equation 9. Market model is used to calculate the abnormal returns in this study. The market model connects the return of a security and the market portfolio return.

(9) $$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \ ,$$
$$E(\varepsilon_{it}) = 0 \quad var(\varepsilon_{it}) = \sigma_{\varepsilon_{it}}^2 \ ,$$

where R_{it} is the return for stock i in the period t and i R_{mt} is the market portfolio return in the period t. ε_{it} measures the zero mean disturbance term and α_i, β_i and $\sigma^2_{\varepsilon_{it}}$ are the market model parameters. (MacKinlay 1997.) β measures the systematic risk or market risk and α_i measures the return of the security compared to the corresponding market risk. (Bodie et al. 2014: 359). The α_i and β_i can be estimated with ordinary least-square (OLS) regression over the estimation window (Benninga 2008: 373). In this study the market portfolio return is calculated from OMX Helsinki total return index. Calculating the abnormal returns with market model is shown in the equation 10.

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_{mt} \,, \tag{10}$$

where AR_{it} is the abnormal return for stock i in the event date t and R_{it} is the actual return for stock i in the event date t. For a single stock i the average abnormal return $\overline{AR_\iota}$ can be calculated with following equation:

$$\overline{AR_\iota} = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \,, \tag{11}$$

where N is the number of observations and AR_{it} is the abnormal return for stock i in time t. (MacKinlay 1997.)

Next the abnormal returns have to be grouped and organized for the analysis of the findings. In this step the firms can be grouped into different portfolios, for example, based on the expected reaction. (Bowman 1983.) In addition, the abnormal returns are aggregated over the event window. That is done by calculating the cumulative abnormal returns. The cumulative abnormal return CAR is the sum of abnormal returns in the studied period (t_1, t_2). It can be calculated with the equation 12. (MacKinlay 1997.)

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it} \tag{12}$$

The cumulative average abnormal return $\overline{CAR_\iota}(t_1, t_2)$ can be measured by calculating the cumulative abnormal returns for each security and then aggregated over the time. (MacKinlay 1997.)

$$\overline{CAR_\iota}(t_1, t_2) = \frac{1}{N}\sum_{t=t_1}^{t_2} CAR_i\,(t_1, t_2). \tag{13}$$

5.2.2 The significance tests for abnormal returns

When the abnormal returns have been measured, the null hypothesis that the event has no impact to the stock prices must be tested. The simplest test statistic for average abnormal returns is as follows (Vaihekoski 2016):

(14) $$\frac{\sqrt{N}x\ \overline{AR_t}}{\sqrt{\sigma^2(AR_{it})}} \sim t(N)$$

For the cumulative average abnormal returns the test is (Vaihekoski 2016):

(15) $$J_1 = \frac{\overline{CAR_t}(t_1,t_2)}{\sqrt{\sigma^2(t_1,t_2\ )}} \sim N(0,1)$$

$$\sigma^2(t_1,t_2\ ) = \frac{1}{N}\sum_{i=1}^{N}(t_2 - t_1 + 1)\,\sigma^2(t_1,t_2\ )$$
$$= (t_2 - t_1 + 1)\sigma^2(t_1,t_2)$$

When examining the significance of the results the significance level must be determined. The significance level tells how big the risk is that the found difference or dependence is caused by coincident. Commonly used significance levels are 0,05 (5%), 0,01 (1%) and 0,001 (0,1%). (Heikkilä 2014: 184.)

5.2.3. Problems associated with event studies

First of all, the timing of an event studied should be correct. If the timing goes wrong, it's very difficult to detect abnormal stock price movement. (Bowman 1983.) Studies where identifying the exact evet date has been difficult have been less meaningful. For instance, it is difficult to study the effects of regulatory changes to the stock prices with event study methodology because the regulatory changes are publicly discussed for a long time and the effects will slowly incorporate into the share price. (MacKinlay 1997)

Other major problem with event studies are the confounding events. For example, is a firm makes a dividend announcement right after the earnings announcement, the earnings announcement will be a confounding event when studying the effects of dividend announcement. Confounding events can significantly affect to the results in event studies. Especially firm specific announcements are problematic. Therefore, confounding events should be controlled when performing an event study in order to get successful results. (Bowman 1983.) The confounding events such as earnings announcements are taken into consideration in this study. In addition, Brown and Warner (1985) present other possible problems related to event studies such as:

1. Non-normality of returns and abnormal returns
2. Biased OLS estimates of the market model parameters due to non-synchronous trading
3. Estimation of the variance used in hypothesis testing and the issues of autocorrelation in daily abnormal returns.

6. EMPIRICAL FINDINGS

This chapter presents and discusses the empirical findings of the study. First the results for the whole sample are presented. The results for the six ownership subsamples are also discussed in their own paragraphs. The sample is divided into two separate categories based on the layoff reason. Moreover, to take into consideration the business cycle the sample layoff announcements are also categorized in to two subsamples those that are made during recession and to those that are made in non-recessionary periods. In addition, the abnormal returns are tested with OLS regression method at the end of this section.

6.1. Results for the whole sample

According to the results, the stock market reaction to layoff announcements is negative. As can be seen from the table 2 the abnormal return on the event day is -0,58% for the sample firms on average. The t-value is -2,43 which indicates statistical significance at five percent level. The average abnormal returns turn to positive one day after the layoff announcement but then decrease again in the second post event day. As the figure 6 shows the abnormal returns are varying from positive to negative over the event period. However, the average abnormal returns for the whole sample are only statistically significant at the announcement date and the second day after that.

The cumulative average abnormal returns are negative for the whole event window. The CAARs are statistically significant in time interval [0, +1] surrounding the layoff announcement date. The cumulative average abnormal returns are negative and significant at the event date and at second and fourth day after the announcement. For time interval from -5 to -1 the CAARs are negative but insignificant. There are no significant average abnormal or cumulative average abnormal returns before the layoff announcement which indicates that there are no signs of information leakage.

As the figure 6 shows the cumulative average abnormal returns continue to drift downwards after the layoff announcement and statistically significant negative CAARs occur. Thus, one can interpret that the market is not efficient. If it was efficient, the impact of layoffs would have incorporated to the price immediately after the announcement.

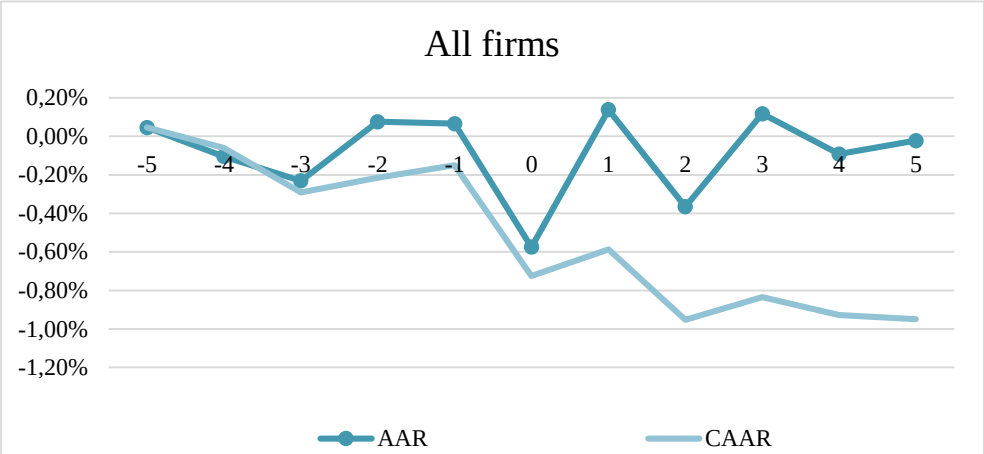

Figure 6. Average abnormal returns and average cumulative abnormal returns for the whole sample.

All in all, based on these findings the first hypothesis that layoff announcements cause negative stock market reaction in Finland can be accepted. The reaction is negative and statistically significant for the whole sample. These results are in line with earlier studies that have found negative abnormal returns for he firms that announce layoffs.

Table 2. Average abnormal returns and average cumulative abnormal returns for the whole sample. N=186. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat for AAR	p-value	CAAR	t-Stat for CAAR	p-value
-5	0,05 %	0,23	0,82	0,05 %	0,25	0,80
-4	-0,11 %	-0,72	0,47	-0,06 %	-0,24	0,81
-3	-0,23 %	-1,39	0,16	-0,29 %	-0,94	0,35
-2	0,08 %	0,51	0,61	-0,22 %	-0,60	0,55
-1	0,07 %	0,44	0,66	-0,15 %	-0,37	0,71
0	-0,58 %**	-2,43	0,02	-0,72 %*	-1,66	0,10
1	0,14 %	0,97	0,33	-0,59 %	-1,24	0,21
2	-0,37 %**	-2,14	0,03	-0,95 %*	-1,88	0,06
3	0,12 %	0,79	0,43	-0,84 %	-1,56	0,12
4	-0,09 %	-0,74	0,46	-0,93 %*	-1,64	0,10
5	-0,02 %	-0,14	0,89	-0,95 %	-1,60	0,11

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,15 %	-0,37 %	-0,44 %*	-0,23 %
J_1	-0,37	-1,20	-1,73	-0,57
p-value	0,71	0,23	0,08	0,57

6.2. Concentrated and widely held companies

For the concentrated ownership category, the stock market reaction to layoff announcements is also negative. The abnormal return on the event date is -0,77 % and it's statistically significant at five percent level. Compared to the whole sample the reaction at the event date is a little more negative for the concentrated ownership firms. However, at the third day after the announcement positive and statistically significant abnormal return of 0,50 % occur.

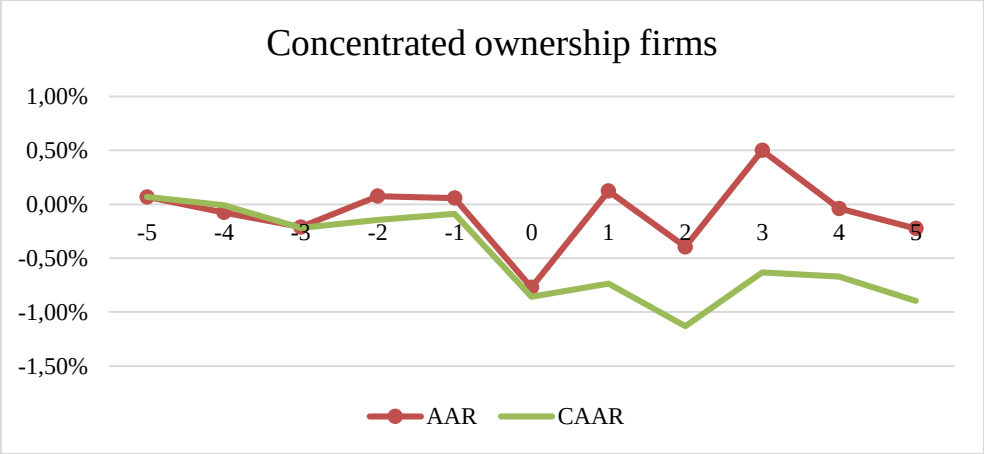

Figure 7. Average abnormal and cumulative average abnormal returns for the concentrated ownership subsample.

The cumulative average abnormal returns are negative for almost the whole event window but they are statistically insignificant. CAARs are also negative for the interval [0, +1]. The figure 7 and table 3 present the results in more detail. These findings show that the firms that have concentrated ownership structure experience a negative stock market reaction to layoff announcements.

Table 3. Results for the concentrated ownership subsample. N= *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat for AAR	p-value	CAAR	t-Stat for CAAR	p-value
-5	0,07 %	0,24	0,81	0,07 %	0,26	0,79
-4	-0,08 %	-0,39	0,70	-0,01 %	-0,02	0,98
-3	-0,21 %	-0,90	0,37	-0,22 %	-0,49	0,63
-2	0,07 %	0,34	0,74	-0,15 %	-0,28	0,78
-1	0,06 %	0,24	0,81	-0,09 %	-0,15	0,88
0	-0,77 %**	-2,10	0,04	-0,86 %	-1,34	0,18
1	0,12 %	0,63	0,53	-0,74 %	-1,07	0,29
2	-0,40 %	-1,45	0,15	-1,13 %	-1,53	0,13
3	0,50 %**	2,33	0,02	-0,63 %	-0,81	0,42
4	-0,04 %	-0,23	0,82	-0,67 %	-0,81	0,42
5	-0,23 %	-0,94	0,35	-0,90 %	-1,04	0,30

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,09 %	-0,59 %	-0,65 %*	-0,04 %
J_1	-0,15	-1,31	-1,76	-0,06
p-value	0,88	0,19	0,08	0,95

For the widely held firms the event day average abnormal return is -0.33% but it's not statistically significant. Statistically significant negative average abnormal returns occur second and third day after the event. Thus, this might indicate that the market reacts slowly to the layoff announcements.

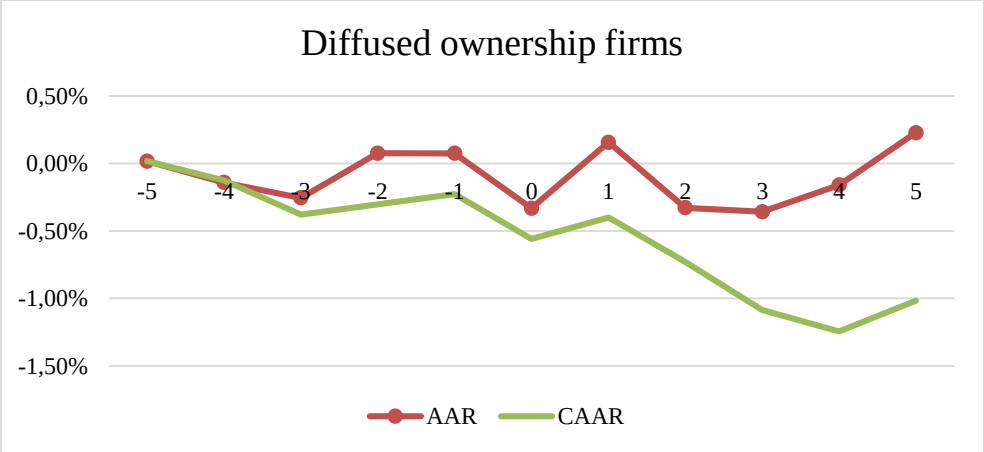

Figure 8. Average and cumulative average abnormal returns for the diffused ownership structure firms.

As the figure 8 shows the cumulative average abnormal returns are negative but they only statistically significant at fourth day after the announcement. For all different time intervals, the CAARs are negative but statistically insignificant. Bennet (2010) shows that large outside shareholders may be good monitors for firm's management. He finds positive market reactions to asset sale announcements for firms that have large outside shareholders. However, this doesn't seem to be the case in here. Compared to the concentrated ownership subsample the reaction to layoff announcements for diffused ownership firms is less negative and less significant. The results for widely held firms are presented in table 4.

Table 4. Results for the diffused ownership firms. N= *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat for AAR	p-value	CAAR	t-Stat for CAAR	p-value
-5	0,02 %	0,06	0,95	0,02 %	0,07	0,94
-4	-0,14 %	-0,63	0,53	-0,12 %	-0,37	0,71
-3	-0,25 %	-1,10	0,27	-0,38 %	-0,93	0,35
-2	0,08 %	0,42	0,68	-0,30 %	-0,64	0,52
-1	0,08 %	0,45	0,65	-0,23 %	-0,43	0,67
0	-0,33 %	-1,22	0,22	-0,56 %	-0,97	0,33
1	0,16 %	0,75	0,45	-0,40 %	-0,65	0,52
2	-0,33 %*	-1,80	0,07	-0,73 %	-1,10	0,27
3	-0,36 %**	-1,93	0,05	-1,09 %	-1,54	0,12
4	-0,16 %	-0,86	0,39	-1,25 %*	-1,68	0,09
5	0,23 %	1,11	0,27	-1,02 %	-1,31	0,19

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,23 %	-0,10 %	-0,18 %	-0,46 %
J_1	-0,43	-0,24	-0,53	-0,87
p-value	0,67	0,81	0,60	0,38

6.3. Results for the state ownership firms

Interestingly for the state ownership companies the cumulative average abnormal returns are positive starting from one day before the actual event date until the end of the event window. However, they are statistically insignificant. As can be seen from the figure 9 the curve for CAARs is sloping upwards. CAARs are statistically significant at

10 percent level in the time interval from +1 to +5 days after the announcement (1,38 %). CAARs are also positive but insignificant for other time intervals. For all of the other ownership categories the cumulative abnormal returns are mostly negative. The average abnormal return on the layoff announcement day is -0,19 % but it's not statistically significant. The reaction is also a little slow for state ownership firms. Statistically significant positive abnormal return (1,06 %) occur only in the third day post the event. The results are presented in detail in table 5.

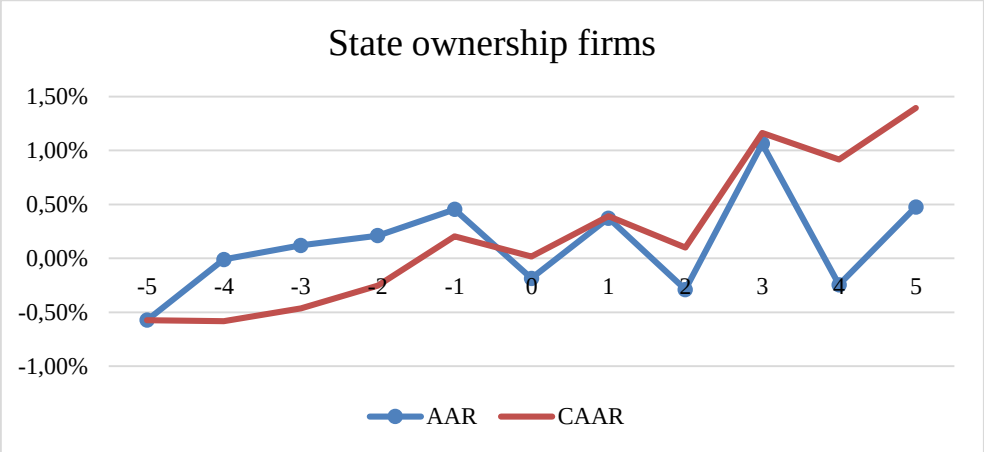

Figure 9. Average and cumulative average abnormal returns for state ownership subsample.

The results differ a lot from other ownership structure groups. There are no significant positive abnormal returns after the layoff announcements in other ownership subsamples. These findings may indicate that state owned firms are possibly inefficient and the market sees that layoffs are therefore a good way to improve the efficiency. The small magnitude of the reaction may also be explained with the fact that state as the owner might not react to the layoff announcements and won't sell the shares. Moreover, the inefficiency of the market can be seen here too. The cumulative average abnormal returns drift upwards and of the CAAR intervals the [+1, +5] is only significant one.

Table 5. Average abnormal and cumulative average abnormal returns for the state ownership firms. N=28. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	-0,57 %	-1,61	0,11	-0,57 %*	-1,63	0,10
-4	-0,01 %	-0,05	0,96	-0,58 %	-1,17	0,24
-3	0,12 %	0,46	0,64	-0,46 %	-0,76	0,45
-2	0,21 %	0,67	0,50	-0,25 %	-0,36	0,72
-1	0,45 %	1,11	0,27	0,20 %	0,26	0,80
0	-0,19 %	-0,39	0,70	0,02 %	0,02	0,98
1	0,37 %	0,81	0,42	0,39 %	0,42	0,68
2	-0,29 %	-0,69	0,49	0,10 %	0,10	0,92
3	1,06 %**	2,27	0,02	1,16 %	1,10	0,27
4	-0,25 %	-0,95	0,34	0,92 %	0,92	0,36
5	0,48 %	1,57	0,12	1,39 %	1,20	0,23

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	0,20 %	0,64 %	0,19 %	1,38 %*
J_1	0,26	1,05	0,38	1,75
p-value	0,80	0,29	0,71	0,08

6.4. Foreign ownership subsample

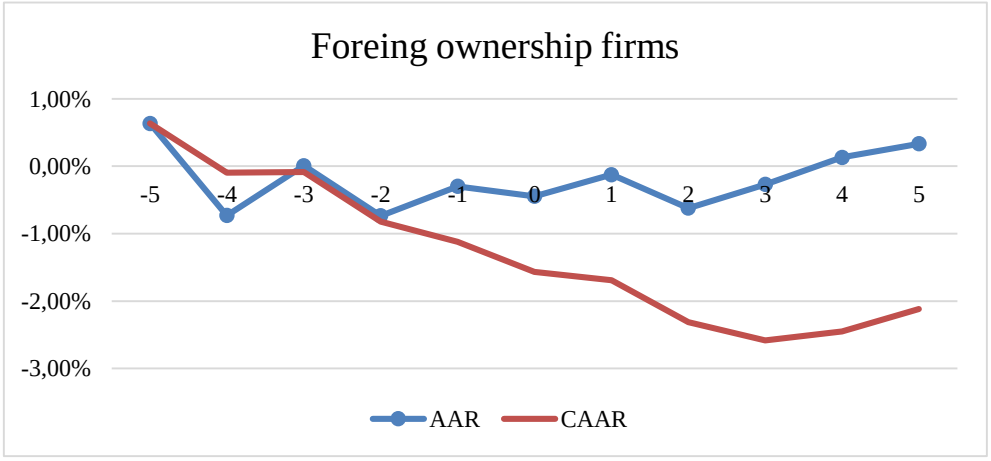

Figure 10. Average and cumulative average abnormal returns for the foreign ownership category.

Compared to the state ownership firms for the foreign ownership firms the cumulative average abnormal returns are a lot more negative in the event window. As can be seen from the figure 10 the cumulative average abnormal returns for foreign owned firms are sloping downwards and in contrast for state owned firms they are upward sloping.

The announcement date average abnormal returns for foreign ownership firms is -0,45 %. However, it's not statistically significant. Negative and significant average abnormal returns occur two days before (-0,74 %) and two days after the announcement (-0,62 %). This indicates that the stock market reaction to the layoff announcement is not accurate. There might be information leakage before the actual announcement. On the other hand, the reaction might be also slow because of the significant abnormal return and cumulative abnormal returns on second day after the announcement. The cumulative average abnormal returns are statistically significant at 10 percent level at second, third and fourth day after the layoff announcement. They are the most negative of all ownership subsamples. The cumulative average abnormal return is at its most negative on the third day after the announcement (-2,85%). For the different time intervals, the CAARs are negative but insignificant.

Table 6. Results for the foreign ownership firms. N=20. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	0,63 %	0,80	0,42	0,63 %	1,37	0,17
-4	-0,73 %	-1,33	0,18	-0,10 %	-0,15	0,88
-3	0,01 %	0,02	0,99	-0,09 %	-0,11	0,91
-2	-0,74 %*	-1,72	0,09	-0,82 %	-0,88	0,38
-1	-0,30 %	-1,06	0,29	-1,12 %	-1,08	0,28
0	-0,45 %	-0,84	0,40	-1,57 %	-1,38	0,17
1	-0,12 %	-0,27	0,78	-1,69 %	-1,38	0,17
2	-0,62 %**	-2,06	0,04	-2,31 %*	-1,76	0,08
3	-0,27 %	-0,90	0,37	-2,58 %*	-1,85	0,06
4	0,13 %	0,34	0,73	-2,45 %*	-1,67	0,10
5	0,33 %	1,01	0,31	-2,12 %	-1,37	0,17

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-1,12 %	-0,87 %	-0,57 %	-0,55 %
J_1	-1,08	-1,08	-0,87	-0,53
p-value	0,28	0,28	0,39	0,60

6.5. Results for family/person subsample

The most negative average abnormal returns of the all ownership subsamples occur for the firms that have family or person as the largest owner. The announcement day average abnormal return is -1,13% which is statistically significant at five percent level. In addition, the cumulative average abnormal returns are negative for almost the whole event window. For example, at the fifth day after the event the cumulative average abnormal return is almost two percent (-1,82%). The cumulative average abnormal returns for different time intervals in the event window are statistically significant for [0, +1] period. The results for family/person ownership subsample are presented in detail in figure 11 and table 7.

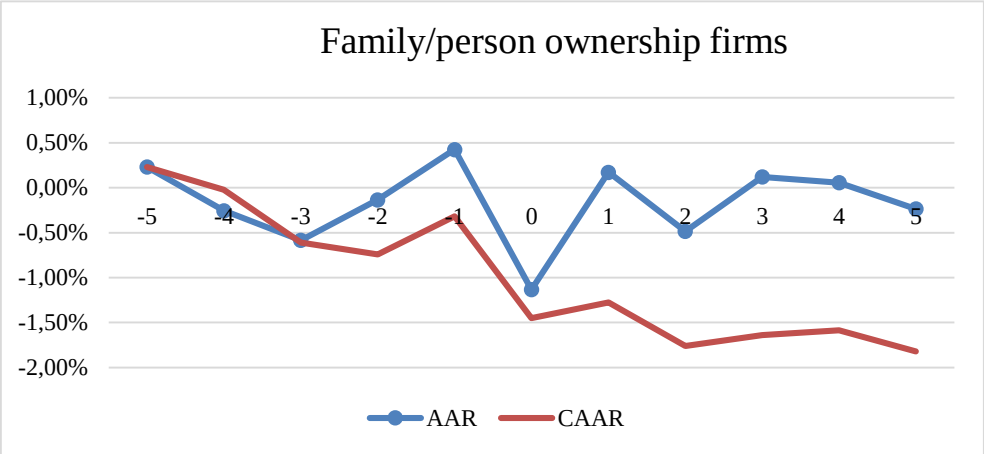

Figure 11. Average and cumulative average abnormal returns for family/person ownership subsample.

Table 7. Average abnormal and cumulative average abnormal returns for the family/person ownership firms. N=73. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	0,23 %	0,66	0,51	0,23 %	0,69	0,49
-4	-0,25 %	-1,17	0,24	-0,02 %	-0,05	0,96
-3	-0,58 %*	-1,85	0,06	-0,61 %	-1,06	0,29
-2	-0,13 %	-0,58	0,56	-0,74 %	-1,12	0,26
-1	0,43 %*	1,78	0,07	-0,32 %	-0,43	0,67
0	-1,13 %**	-2,35	0,02	-1,45 %*	-1,78	0,08
1	0,17 %	0,91	0,36	-1,28 %	-1,45	0,15
2	-0,48 %*	-1,63	0,10	-1,76 %*	-1,87	0,06
3	0,12 %	0,47	0,64	-1,64 %*	-1,64	0,10
4	0,06 %	0,26	0,80	-1,59 %	-1,50	0,13
5	-0,23 %	-0,90	0,37	-1,82 %*	-1,65	0,10

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,32 %	-0,53 %	-0,96 %**	-0,37 %
J_1	-0,43	-0,92	-2,04	-0,50
p-value	0,670	0,356	0,042	0,620

6.6. Results for institutional ownership subsample

For the institutional ownership category, the market reaction to layoff announcements is also significantly negative. The announcement day average abnormal return is -1,12 %. In addition, negative and statistically significant average abnormal return occurs two days after the announcement (-0,81%). Nevertheless, AAR is positive and significant two days prior the announcement (1,12%). The cumulative average abnormal returns are mostly positive for the different days in the event window. However, they are only statistically significant at five days before the announcement.

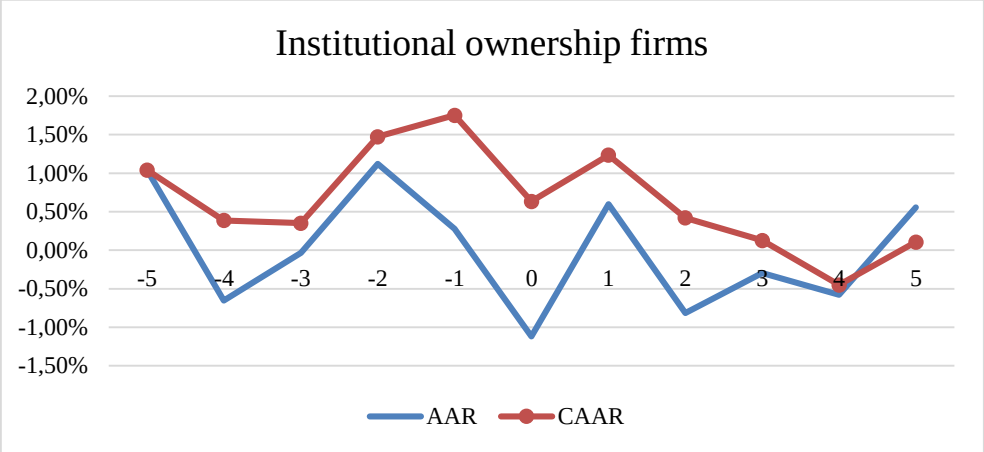

Figure 12. Average and cumulative average abnormal returns for the institutional ownership subsample.

The quite large negative average abnormal return on the layoff announcement day may indicate that institutional owners vote with their legs. Thus, they might sell the shares if they see that the future expectations of the firm's investment opportunities are decreasing.

Table 8. Average abnormal and cumulative average abnormal returns for the institutional ownership firms. N=19. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	1,04 %	1,40	0,16	1,04 %*	1,84	0,07
-4	-0,65 %	-1,41	0,16	0,39 %	0,48	0,63
-3	-0,03 %	-0,06	0,95	0,35 %	0,36	0,72
-2	1,12 %**	2,10	0,04	1,47 %	1,30	0,19
-1	0,28 %	0,78	0,44	1,75 %	1,38	0,17
0	-1,12 %*	-1,86	0,06	0,64 %	0,46	0,65
1	0,60 %	1,16	0,24	1,23 %	0,82	0,41
2	-0,81 %**	-2,11	0,03	0,42 %	0,26	0,79
3	-0,29 %	-0,81	0,42	0,13 %	0,08	0,94
4	-0,58 %	-1,48	0,14	-0,45 %	-0,25	0,80
5	0,56 %	1,15	0,25	0,11 %	0,06	0,95

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	1,75 %	-0,24 %	-0,52 %	-0,53 %
J_1	1,38	-0,24	-0,65	-0,42
p-value	0,17	0,81	0,52	0,68

All in all, the average abnormal returns on the layoff announcement day are negative for all of the different ownership structure samples. These findings are supporting the first hypothesis and findings of the previous studies such as Worrell et al. (1991). In addition, there are small differences in the abnormal returns when comparing the different ownership subsamples. The most negative reaction occurs for the family or person ownership firms and the most positive or least negative reaction occurs for the state ownership firms. However, the small sample size might be an issue and affect to the results, especially for the foreign and institutional ownership subsamples. The differences between the ownership subsamples are tested with OLS regression at the end of this section.

6.7. Layoff reason

The previous literature has focused a lot on the dependence of the stock market reaction on announced reason of the layoff. (see e.g. Worrell et al. 1991, Palmon et al. 1997). For example, Kashefi and McKee (2001) find that proactive layoff announcements that are part of the firm's strategy cause positive abnormal returns and on the contrary reactive layoff announcements that are reaction to financial distress cause negative abnormal returns.

The 186 sample layoff announcements are divided here in two different subsamples in order to test if the announced layoff reason causes different abnormal returns. The two subsamples are proactive such as efficiency enhancing or restructuring and reactive layoff announcements which are reactions to decreased demand or adverse market conditions. There are 94 layoff announcements that are classified into reactive and 88 announcements that belong to the proactive category. Four of the sample layoff announcements can't be classified in to either of the groups due to lack of specific layoff reason.

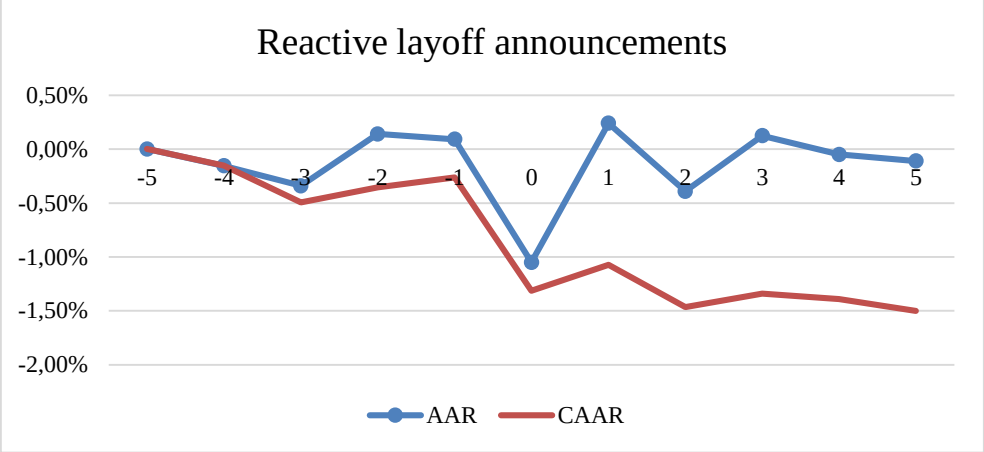

Figure 13. Average and average cumulative abnormal returns for reactive layoff announcements.

In line with previous studies the reactive layoff announcements cause negative abnormal returns on the event day. The announcement day average abnormal return is -1,05% and it's statistically significant on one percent level. The cumulative average abnormal return on the event day is -1,31% and it's statistically significant on five percent level. The cumulative average abnormal returns are negative for the whole event window. In addition, they are also negative and significant on time interval [0, +1].

Table 9. Results for reactive layoff announcement groups. N=94. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	0,00 %	0,00	1,00	0,00 %	0,00	1,00
-4	-0,15 %	-0,68	0,49	-0,15 %	-0,39	0,69
-3	-0,34 %	-1,37	0,17	-0,49 %	-1,03	0,30
-2	0,14 %	0,67	0,50	-0,35 %	-0,64	0,52
-1	0,09 %	0,38	0,71	-0,26 %	-0,42	0,67
0	-1,05 %***	-2,51	0,01	-1,31 %**	-1,94	0,05
1	0,24 %	1,11	0,27	-1,07 %	-1,46	0,14
2	-0,39 %	-1,42	0,15	-1,46 %*	-1,87	0,06
3	0,12 %	0,55	0,58	-1,34 %	-1,61	0,11
4	-0,05 %	-0,33	0,74	-1,39 %	-1,59	0,11
5	-0,11 %	-0,41	0,68	-1,50 %*	-1,63	0,10

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,26 %	-0,72 %	-0,81 %**	-0,19 %
J_1	-0,42	-1,50	-2,07	-0,30
p-value	0,67	0,13	0,04	0,76

The average abnormal returns and cumulative average abnormal returns for the firms that state efficiency enhancing or restructuring as a reason for the layoffs are not statistically significant in any of the days in the event window. These findings are similar to the findings of earlier research which has stated that reactive layoff announcements cause more negative returns (see e.g. Lee 1997, Hillier et al. 2007). Perhaps the reactive layoffs are a sign of bad financial condition of the firm and the market sees that the future growth and cash flow expectations of the firm are lowered. The results for the proactive subsample are presented in the table 10.

Table 10. Results for the proactive layoff announcement subsample. N=88. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	-0,02 %	-0,10	0,92	-0,02 %	-0,10	0,92
-4	-0,06 %	-0,33	0,74	-0,09 %	-0,27	0,79
-3	-0,17 %	-0,77	0,44	-0,26 %	-0,65	0,51
-2	0,11 %	0,57	0,57	-0,15 %	-0,32	0,75
-1	0,04 %	0,24	0,81	-0,10 %	-0,20	0,84
0	-0,14 %	-0,65	0,52	-0,24 %	-0,42	0,67
1	0,07 %	0,36	0,72	-0,17 %	-0,28	0,78
2	-0,28 %	-1,36	0,17	-0,45 %	-0,69	0,49
3	0,08 %	0,39	0,69	-0,37 %	-0,54	0,59
4	-0,20 %	-1,01	0,31	-0,57 %	-0,79	0,43
5	0,04 %	0,21	0,84	-0,54 %	-0,70	0,48

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,10 %	-0,02 %	-0,07 %	-0,30 %
J_1	-0,20	-0,06	-0,21	-0,58
p-value	0,84	0,95	0,83	0,56

6.8. Growth periods

Earlier studies suggest that layoff announcements made during recession cause more negative stock market reaction than those made during non-recessionary periods (Elayan et al. 1998, Marshall 2012). This hypothesis is tested here by dividing the sample layoff announcements into two groups based on whether they are made during recession or not.

According to the common view that recession starts when GDP decreases in two subsequent quarters in a row there are two recession periods in Finnish economy during the years 2007–2014. This sample includes 111 layoff announcements made during recession and 75 layoff announcements during upturn periods.

Results show that the event day abnormal return for recession subsample is -0,67% and it's statistically significant at one percent level. The cumulative average abnormal returns are also negative but not statistically significant over the evet window. In contrast, the abnormal returns for non-recessionary period are not statistically significant. However, the cumulative abnormal returns for non-recessionary period are more negative than during recession. At days from +2 to +5 the cumulative abnormal returns are negative and statistically significant.

Table 11. Results for recession period. N=111. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR	t-Stat of CAAR	p-value
-5	-0,06 %	-0,23	0,81	-0,06 %	-0,25	0,81
-4	0,01 %	0,07	0,94	-0,05 %	-0,13	0,89
-3	-0,39 %*	-1,71	0,09	-0,43 %	-1,03	0,30
-2	0,09 %	0,50	0,62	-0,34 %	-0,70	0,48
-1	0,07 %	0,37	0,71	-0,27 %	-0,50	0,61
0	-0,67 %***	-2,48	0,01	-0,94 %	-1,59	0,11
1	0,25 %	1,35	0,18	-0,69 %	-1,08	0,28
2	-0,27 %	-1,40	0,16	-0,96 %	-1,41	0,16
3	0,25 %	1,24	0,22	-0,72 %	-0,98	0,33
4	-0,01 %	-0,07	0,94	-0,73 %	-0,95	0,34
5	-0,03 %	-0,14	0,89	-0,75 %	-0,94	0,35

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	-0,27 %	-0,35 %	-0,02 %	0,19 %
J_1	-0,50	-0,84	-0,06	0,35
p-value	0,61	0,40	0,95	0,72

The reason why the results don't really support the hypothesis that layoff announcements made during recession cause more negative abnormal returns than layoff announcements made during upturn period might depend on the economic situation in

Finland in the research period 2007–2014. Since the recession started in 2008 the economic growth has been very low. Thus, the difference between recession and non-recessionary periods has not been very large in the Finnish economy.

Table 12. Results for the non-recession period. N=75. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

t	AAR	t-Stat of AAR	p-value	CAAR U	t-Stat of CAAR	p-value
-5	0,20 %	0,62	0,54	0,20 %	1,15	0,25
-4	-0,28 %	-1,38	0,17	-0,08 %	-0,33	0,74
-3	0,00 %	0,01	0,99	-0,08 %	-0,26	0,79
-2	0,05 %	0,20	0,84	-0,03 %	-0,09	0,93
-1	0,07 %	0,25	0,80	0,04 %	0,09	0,93
0	-0,43 %	-1,01	0,31	-0,40 %	-0,93	0,35
1	-0,03 %	-0,14	0,89	-0,43 %	-0,93	0,35
2	-0,50 %	-1,62	0,11	-0,93 %*	-1,88	0,06
3	-0,08 %	-0,37	0,71	-1,01 %**	-1,93	0,05
4	-0,21 %	-1,27	0,21	-1,22 %**	-2,21	0,03
5	-0,02 %	-0,06	0,95	-1,24 %**	-2,24	0,02

$[t_1, t_2]$	[-5, -1]	[-1, +1]	[0, +1]	[+1, +5]
CAAR	0,04 %	-0,40 %	-0,47 %*	-0,84 %**
J_1	0,09	-1,31	-1,88	-2,15
p-value	0,93	0,19	0,06	0,03

6.9. OLS Regression results

Next Ordinary Least Square (OLS) regression is constructed in order to find if there are significant differences in the layoff announcement reactions between different ownership groups, recession and non-recession periods and between the layoff reasons. In addition, the regression also controls for the layoff size. The layoff size is measured by the layoff ratio which is the amount of employees that are announced to be under the co-determination negotiations divided by the total number of employees in the company. The dependent variable is cumulative abnormal returns (CAR) for the interval [-1, +5] in the event window. The [-1, +5] CAR interval is chosen as the dependent variable because it covers the abnormal returns at the event day, one day before and five days the layoff announcement. There are statistically significant abnormal returns few days after

the layoff announcements for many of the subsamples. Table 13 presents the descriptive statistics for CAR [-1, +5] and for the layoff ratio and its components.

Similar regression method is used, for example, by Hillier et al. (2007). Hillier et al. (2007) have different dummy variables for different layoff reasons in their regression model. They also have control variable for layoff size among other variables. Moreover, Lee (1997) estimates a multivariate regression model for cumulative abnormal returns. The regression includes dummy variables for layoff reason and whether there are multiple layoff announcements for one firm or not. The layoff size is also included into Lee's (1997) regression.

Table 13. Descriptive statistics for CAR [-1, +5] and for the layoff ratio and its components.

	Mean	**Median**	**Standard deviation**
CAR [-1, +5]	-0,007	-0,004	0,051
Number of employees under negotiations	476	246	687
Total number of employees	11635	4511	22233
Layoff ratio	0,189	0,066	0,268

The regression model includes different dummy variables for different ownership groups and for layoff reason and recession. The ownership group dummies take value of one if they are included in some specific group. There is also a dummy for concentrated ownership that takes value of one if the firm is included in the concentrated ownership group and zero if the firm is widely held. The layoff reason has own dummy too. The reactive dummy takes value of one if the layoff reason is reactive e.g. declining demand and zero if the layoff reason is proactive. In addition, the recession dummy is included in order to find if the recession is affecting the CARs. It takes value of one if the layoff announcement is made during recessionary period and zero otherwise. These dummies are added in order to find if there are significant differences between the ownership structures or is the reason of the layoff affecting significantly to the abnormal returns or if the recession has an effect. The regression equation is shown below.

(16) CAR [-1, +5] = α_0 + β_1CONSENTRATED +β_2FAMILY_PERSON + β_3FOREIGN + β_4 INSTITUTIONAL + β_5 STATE + β_6 REACTIVE + β_7 RECESSION + β_8LRATIO

The regression results are presented in detail in table 14. The results show that the only statistically significant coefficient is state ownership dummy. The coefficient is positive and significant at one percent level. Consequently, the stock market seems to react positively to the state layoff announcements. This finding indicates that there are differences in the stock market reactions between the ownership structure groups. Consequently, the second hypothesis is accepted.

Table 14. OLS regression results for cumulative abnormal returns. The dependent variable in the regression is CAR [-1, +5]. N=186. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

Variable	Coefficient	Std. Error	t-Stat	p-value
Intercept	-0,008	0,010	-0,840	0,402
CONCENTRATED	-0,007	0,008	-0,961	0,338
FAMILY_PERSON	0,008	0,010	0,767	0,444
FOREIGN	0,000	0,008	-0,034	0,973
INSTITUTIONAL	-0,001	0,014	-0,053	0,958
STATE	0,033***	0,013	2,546	0,012
REACTIVE	-0,011	0,008	-1,437	0,152
RECESSION	0,009	0,008	1,113	0,267
LRATIO	-0,015	0,015	-0,961	0,338
R-squared	0,066			

The dummy variables for other ownership categories are statistically insignificant. Also the concentration dummy is insignificant. Moreover, coefficients for the institutional and reactive dummies and for the intercept are negative but insignificant. In addition, the recession dummy is positive but statistically insignificant. Thus, the third hypothesis that layoff announcements that are made during recession cause more negative stock market reaction than those made during non-recessionary period can't be accepted. Moreover, the layoff reason dummy is negative but statistically insignificant. The hypothesis five stated that reactive layoff announcements cause more negative stock market reaction than those that are proactive. Thus, the fifth hypothesis cannot be accepted based on the regression results. The layoff ratio coefficient is negative but insignificant. Therefore, the fourth hypothesis suggesting that layoffs that affect larger percentage of the firm's workforce cause more negative stock market reaction can't either be accepted.

Furthermore, an additional regression model is constructed to examine the joint impact of layoff reason and different ownership groups. The additional regression includes therefore an interaction term which is the reactive dummy. The interaction term is added to see how, for instance, state ownership firms that have reactive layoff reason impact to the stock market reaction. The regression is described in equation 17. For example, Filbeck and Webb (2001) construct an interaction term regression model to study the joint impact of firm size and insider ownership.

(17) CAR[-1, +5] = α_0 + β_1CONSENTRATED +β_2FAMILY_PERSON + β_3FOREIGN + β_4 INSTITUTIONAL + β_5 STATE + β_6 REACTIVE + β_7 RECESSION + β_8 LRATIO + β_9 CONSENTRADED*REACTIVE + β_{10} FAMILY_PERSON*REACTIVE + β_{11} FOREIGN*REACTIVE + β_{12} INSTITUTIONAL*REACTIVE + β_{13}STATE*REACTIVE + β_{14}RECESSION*REACTIVE

The results from regression with interaction term show that the concentrated*reactive dummy variable is negative and statistically significant at five percent level. Thus, concentrated ownership with reactive layoff reason together affect negatively to the stock price reaction. In addition, now the recession dummy becomes positive and statistically significant indicating that layoff announcements made during recession have more positive impact than layoff announcements made during upturn. Consequently, the hypothesis three is rejected. Moreover, the intercept is negative and statistically significant at five percent level. Other variables are statistically insignificant. The results are shown in detail in table 15.

Table 15. Interaction term OLS regression results. The dependent variable in the regression is CAR [-1, +5]. N=186. *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

Variable	Coefficient	Std. Error	t-Stat	p-value
Intercept	-0,024**	0,012	-2,008	0,046
CONCENTRATED	0,013	0,011	1,190	0,236
FAMILY_PERSON	0,012	0,013	0,914	0,362
FOREIGN	-0,010	0,018	-0,537	0,592
INSTITUTIONAL	-0,003	0,018	-0,156	0,877
STATE	0,013	0,018	0,705	0,482
REACTIVE	0,016	0,019	0,849	0,397
RECESSION	0,020*	0,011	1,900	0,059
LRATIO	-0,009	0,015	-0,562	0,575
CONCENTRATED*REACTIVE	-0,041**	0,017	-2,438	0,016
FAMILY_PERSON*REACTIVE	-0,003	0,020	-0,148	0,883
FOREIGN*REACTIVE	0,015	0,028	0,533	0,595
INSTITUTIONAL*REACIVE	0,003	0,029	0,107	0,915
STATE*REACTIVE	0,040	0,026	1,533	0,127
RECESISSION*REACTIVE	-0,020	0,015	-1,319	0,189
R-squared	0,121			

7. CONCLUSIONS

The purpose of this study is to find out if the layoff announcements cause abnormal returns in the Finnish stock market and whether the stock market reactions diverge between different ownership structure firms. The sample includes 186 layoff announcements in the research period 2007–2014. The layoff announcements are divided into different ownership subsamples based on who is the largest owner in the firm. There are six different ownership groups in this study: state, family/person, foreign, institutional and concentrated or diffusely owned firms. In addition, the sample is divided based on the layoff reason and also whether the layoffs are announced during recession or not.

Many previous studies have shown that stock market reacts negatively to the corporate layoff announcements. However, some researchers have also found positive abnormal returns associated with some layoff announcements. In addition, the prior findings show that layoff announcements made during recessions cause more negative stock market reaction than those that are made during upturns. Moreover, the size of the layoff has been proven to have an effect on the reaction. More negative reaction is associated with layoffs that consider larger percentage of employees than with those that affect only a small fraction of workers. Additionally, the prior research has often studied the effects of the layoff reason on the stock market reaction. More negative reactions have been detected with layoff announcements that state reactivity (e.g. declined demand) as the layoff reason than with proactive (e.g. restructuring) layoff announcements.

Prior research has also shown that ownership structure has an effect on stock valuation and firm performance. For example, the findings show that for example, family firms perform better than non-family firms. On the other hand, family, state and corporate ownership have been shown to have negative influence on firms' market-to-book values. The impact of ownership structure has been also studied for example in context of corporate asset sales. The evidence shows that stock market reaction to asset sales is more positive for firms that have large outside shareholders than for widely held firms which indicates that large outside owners act as a good monitor for the firms.

Based on previous literature five hypotheses are formed. The first hypothesis states that layoff announcements in Finland cause negative stock market reaction. The second hypothesis is that the stock market reactions to layoff announcements diverge between different ownership structure firms. The third hypothesis takes into consideration the impact of recession: layoff announcements made during recession affect more negative-

ly to the stock price reaction than those made during upturn period. Moreover, the fourth hypothesis states that layoff announcements that affect larger percentage of a firm's employees cause more negative stock market reaction. And finally the fifth hypothesis is that reactive layoff announcements cause more negative stock market reaction than proactive ones.

The theoretical framework in this study includes efficient market theory and stock valuation. The purpose of the stock valuation part is to show which different factors impact on the stock price and how they affect. For example, the Gordon's growth model shows how required rate of return, dividend expectations and growth rate of dividends affect to the stock price. Based on the model can be interpreted that the growth of required rate of return impacts negatively to the stock price and the growth of dividends in turn has a positive effect on the price. When a firm reduces its workforce the required rate of return might decrease because by laying off the firm in a way reduces its debt when the salary costs decrease. The dividend expectations in turn might grow because more money is left to the distribution of dividends. Thus, in theory the stock price should increase due to layoffs.

The informative efficiency of the market can affect to the stock price reaction to layoff announcements. According to the efficient market hypothesis, stock prices should include all available information in the market. In other words, the market is then informationally efficient. Thus, the impact of layoff announcements should immediately be reflected in the prices. Fama (1970) divides the market into three different forms based on what kind of information prices include. The most relevant efficiency form for this study is the semi-strong market efficiency because layoff announcements are both new and publicly available information.

The layoff announcements' reactions to stock prices are tested in this study with event study methodology which is presented in chapter five. The event study methodology detects the abnormal returns caused by layoff announcements. In order to measure the abnormal returns first normal returns are calculated with the market model and then they are decreased from the actual returns. The abnormal returns are calculated for 11 days' period surrounding the announcement, five days before and five days after. In addition, cumulative abnormal returns are calculated for the event window and different time intervals in the event window. To examine the statistical significance of abnormal returns and cumulative abnormal returns they are then tested with a t-test.

The empirical findings show that overall the stock market reaction to layoff announcements is negative and statistically significant. For all of the sample companies the announcement day average abnormal return is -0,58% and it's statistically significant at five percent level. The most negative event day abnormal returns occur for family/person ownership subsample (-1,13%) and the most positive or least negative reaction (-0,19%) is detected for state ownership firms. The event day abnormal returns are negative for all of the different ownership subsamples. Thus, the first hypothesis is accepted based on the event study results.

The sample is also divided into different subsamples based on the layoff reason and recession. The layoff reasons are reactive such as declined demand and proactive e.g. restructuring. The results show that reactive layoff announcements seem to cause more negative stock market reaction than proactive announcements. The announcement day average abnormal return for reactive layoff announcements is -1,05%. The abnormal returns for proactive layoff announcements are also negative but not significant. Thus, investors might see the reactive layoff announcements as a sign of worsened financial condition of the firms. Proactive layoff announcements, in turn, are not seen as significant value affecting thing.

According to the results, the layoff announcements that are made during recession cause abnormal return of -0,67% at the event day but none of the cumulative abnormal returns are statistically significant. For the upturn period layoff announcements in turn, the cumulative abnormal returns are more negative and significant than for recession period. Thus, there is no clear difference in the reactions between the recession and non-recession periods. The economic situation in Finland has not been very good after the financial crisis and the economic growth has been low. This might explain why the results are not in line with previous findings which have stated that layoff announcements during recession cause more negative stock market reaction.

The cumulative abnormal returns are tested then with OLS regression which includes dummy variables for ownership structures, layoff reason and recession and a variable for layoff size. The results show that the state ownership dummy is positive and statistically significant. Thus, the state ownership affects positively to the stock market reaction. Perhaps the market sees that state owned companies are inefficient and layoffs are therefore a good way to improve the efficiency. The state might have different objectives such as preserving the jobs. Therefore, when state owned companies reduce their workforce other investors might see it as a positive thing because then return maximiz-

ing strategy is implemented. This finding is indicating that there are some significant differences in the stock market reactions based on the ownership structure of the firms. Therefore, the second hypothesis can be accepted based on the regression OLS regression results.

The layoff reason (reactive) and recession dummies are not statistically significant. Even though the average abnormal returns for the different days in the event window show that reactive layoff announcements cause more negative stock market reaction than proactive ones, according to the regression results for cumulative abnormal returns reactive layoff announcements' reactions do not differ statistically significantly from the proactive ones. As a result, the fifth hypothesis can't be accepted. In addition, the layoff size variable is negative but insignificant. Consequently, also the third and fourth hypotheses are rejected.

Furthermore, an additional regression model is constructed to study the joint impact of the reactive layoff reason and different ownership groups and recession. Therefore, an interaction term is added to the regression. The results show that concentrated ownership and reactive layoff reason together have statistically significant negative impact on the stock market reaction. Also the recession dummy is positive indicating that layoff announcements made during recession have positive impact on the reaction. Therefore, the hypothesis three cannot be accepted.

All in all, the layoff announcements cause overall negative and significant stock market reaction in Finland. The market might view the layoffs as a negative sign of the future growth expectations of the downsizing firms. There are differences in the abnormal returns between the different ownership structure firms. The state ownership affects positively to the stock market reaction to layoff announcements. In addition, if the downsizing firm has concentrated ownership structure and the layoff reason is reactive the impact is significantly negative.

The use of Finnish data can be considered as a limitation in this study. There are only few observations especially in institutional and foreign ownership groups. The stock market reactions to layoff announcements for different ownership structure firms could be examined with a larger sample and in different countries. For example, the U.S. markets would be large enough to get a good sized sample. In addition, it would be interesting to study further the different ownership structure firms' stock market performance in a longer time period after the layoffs especially the state ownership companies'.

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