Camilla Hov (610)

Do Changes in Dividends Contain Information to Shareholders?

An Event Study of the Norwegian Capital Market

Bachelor's Thesis 2017
Bachelor Programme in Business Administration and Economics
Oslo Business School at HiOA
Mentor: Knut Nygaard

Summary

In this thesis, the effect on dividend change announcement for firm listed on the Oslo Stock Exchange is studied. The purpose of this thesis is to test signalling theory of dividend payment policy. The null hypothesis is that there is no effect to changes in dividend payment policy. This hypothesis is tested with the event study method which is based on market efficiency in the sense that any useful information is immediately reflected in stock prices. The signalling theory is based on asymmetric information between investors and insiders of the firm, where changes in dividend contains useful information to investors.

The full sample examined is collected from 2007 to 2013 and consists of 236 dividend change announcements from 54 firms. The dividend change announcements are further divided into three groups; dividend increases, constant dividends, and dividend decrease. By grouping the dividend announcements by directions, it allows for a more thorough investigation on how stock prices react to dividend changes.

The results of the analysis show that there are significant positive abnormal returns on the announcement date for dividend increasing firms, and negative significant results for dividend decreasing and constant dividend firms. These results are in line with the dividend signalling hypothesis as the stock prices change in the direction of the dividend and must therefore contain information of the management's view on the firm's future prospect. However, as capital gains and dividends are taxed the same in Norway, the results contradict the tax-based signalling hypothesis. The tax-based signalling hypothesis state that higher tax on dividends relative to capital gains are a necessary condition for dividends to be informative. There is also evidence of semi-strong market efficiency as the information content of the dividends are quickly incorporate in stock prices.

By investigating the effect of dividend changes by industries the results show that there are significant negative cumulative abnormal returns for the dividend decreasing and constant dividend firms in the industries Information Technology and Telecommunication Services. By the characteristics of these industries it would be expected that the results would be of different sign than the ones detected. As

dividends in these industries could be perceived as a weakness due to lack of investment opportunities there must be other factors that contribute to the negative abnormal returns. As a final point, the results of the regression analysis show that shareholders holding stocks of firms that increase dividend payments will receive positive abnormal returns. This is not true for the dividend decreasing and constant dividend firms, and across industries.

Preface

This bachelor's thesis marks the end of my time at Oslo Business School at Oslo and Akershus University College of Applied Science undertaking a bachelor program in Business Administration and Economics.

A lot of time and devotion has been put in this thesis. There have been some frustrating moments, but thanks to my better half, he has helped me with problems I could not solve on my own.

I want to thank my mentor, Knut Nygaard, for useful comments and guidance throughout this last semester when writing this thesis. You have continuously challenged me during the writing period and I thank you for that.

Camilla Hov
18 May 2017

Table of Contents

List of figures and tables:

1 Introduction

How firms choose its payout policy directly affect the firm's value. By paying dividends, management can use this as a signalling mechanism to the investors due to the asymmetry of information between them and the management. By not paying dividends, the firm will retain its earning and can use it on investment opportunities. Dong, Robinson, and Veld (2005) provide results that shareholders also care about dividends. By receiving dividends shareholders can avoid substantial transaction costs when they do not want to reinvest in the same stock, but overall shareholders value dividends as beneficial.

A useful starting point for consider the possible impact of changes in dividend policy is the work by Miller and Modigliani in 1961.They describes the perfect capital market with rational behaviour from investors, no transaction costs, perfect certainty for investors and no taxes. They concluded that the price of a firm's stock is not affected by its dividend policy and therefore the irrelevance of dividends. By using the model introduced by Miller and Modigliani it let us understand the impact of real world frictions.

The relevance of dividend policy is studied extensively, and several models on the dividend signalling theory has been developed. Lintner initially proposed the dividend signalling theory in 1956. Later several dividend signalling models has been developed, such by Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985). The dividend signalling theory implies that management use dividends to signal the firms future prospects and are certain that they can be sustained in the future. On the other hand, the tax-based signalling theory implies that dividend must be taxed at a higher rate relative to capital gains to be informative.

By using the event study method we can study the impact of a firms payout policy when announcing dividends. The abnormal return around the announcement date will indicate the information content of dividends. The event study method will also provide good evidence of the efficiency of markets. The efficient market hypothesis was first introduced by Eugene Fama in 1970 which described an efficient market where stock prices reflects all available information to investors. He argues that if the

market is efficient, it is not possible to outperform the market and earn excess return by analysing available information to investors. Fama further distinguish three forms of market efficiency; weak form, semi-strong form and strong form. As a consequence of the event study method, the results will indicate if the Norwegian capital market is semi-strong efficient. When the market is semi-strong efficient all publicly available information from the firm, including historically available information, will be reflected in the stock prices.

The purpose of this thesis is to test the signalling theory of dividend payment policy on the Norwegian capital market. The sample examined consist of 236 dividend change announcements from 2007 to 2013. Together there are 54 dividend changing firms in the sample. Table 1.1 present the amount of dividend paid in million Norwegian Kroners by Norwegian listed firms. These numbers show that dividends tend to increase, but fall substantial after major economic events, such as the financial crisis in 2008, before increasing when the economy is stabilizing. It can be interesting to examine why firms increase dividend payments. After the dividend-tax hypothesis, dividends will not provide any useful information to shareholders in this market due the same taxation on dividends and capital gains

Year	2007	2008	2009	2010	2011	2012	2013
Dividend paid (mill. NOK)	237 053	293 372	168 133	167 786	194 292	231 747	304 873

Table 1.1 Total dividend paid by listed firms on Oslo Stock Exchange from 2007-2013 (Statistics Norway 2004-2015)

The results from the analysis supports the dividend signalling hypothesis, but contradict the tax-based signalling hypothesis as Norwegian shareholders are taxed the same on dividends and capital gains. The implication of the event study method show that the Norwegian capital market is semi-strong efficient as any useful information provided by the dividend change is immediately reflected in stock prices. The results of the study are as follows; firms that increase dividends have significant positive abnormal returns at significance level 1%, and firms that decrease dividends or hold them constant have negative significant results at significance level 5%. Further there

are negative significant results in the industries Information Technology and Telecommunication services for firms that decrease dividend payments and hold them constant. These results are different from what would be expected as dividends in these sectors could be perceived as a weakness. By running a regression analysis to examine the impact of the direction of dividends and by industries the results indicate that shareholders can expect to earn positive abnormal returns by holding stocks of dividend increasing firms.

This thesis is divided into 6 parts, and is organized as follow; Chapter 2 present the two competing theories on firm's payout, introduction to the market efficiency, and a selection of empirical analysis on the signalling theory. Chapter 3 explains the methodology for the event study, with emphasis on the market model for calculating normal returns. Chapter 4 present the data and sample included in the analysis, and Chapter 5 present the results from the empirical analysis. Finally, Chapter 6 summarize and concludes the findings.

2 Theory

2.1 Dividends

Dividends are used by firms to distribute a portion of their earning, often in the form of cash dividends or dividend through share repurchase. The choice between pay out and retain free cash flow is known as the firm's payout policy. Established firms tend issue more regular dividends than high-growth firms as these firms use profits to reinvest and sustain high growth and expansion. In other words, dividend paid by high-growth firms are often perceived negative since these firms then limit their investment opportunities. If investors are assumed to be rational, the firm's payout policy will depend on the tax rate on capital gains and dividends.

Dong, Robinson, and Veld (2005) try to explain why individual investors want dividends. They collected 555 responses from Dutch household members who hold or recently held common shares and/or investments fund. In the Dutch tax system, tax on dividends and capital gains are taxed the same which will isolate the tax effect on dividends from other considerations. In their results they find that individual investors are not indifferent to dividends. Further, they find that why individuals prefer dividends are because of it saves transaction costs when they do not want to reinvest the dividends in the same stock. If firms are unable to pay cash dividends they find that investors prefer firms to pay dividends in the form of stock dividend than no dividend at all.

There are several theories on why firm issue dividends. The two competing theories, the relevance and irrelevance of dividends, will be reviewed in the following sections.

2.1.1 Dividends are Irrelevant

Miller and Modigliani (1961) describes a perfect capital market with rational behaviour from investors, no transaction costs, perfect certainty for investors and no taxes. They claim that the price of a firm's stock or its cost of capital is not affected by its dividend policy, but rather on its ability to earn revenue and the risk on its underlying assets when the firm's investment policy is fixed. As investors can make

dividends on their own by selling shares, they will not pay a premium for a particular dividend policy.

The idea of the dividend irrelevance proposition by Miller and Modigliani (1961) is that shareholders are indifferent about receiving dividends. The underlying idea is that firms that pay more dividends offer less price appreciation but provide the same total return. However, with no taxes or taxes on dividends and capital gains are the same, investors will be indifferent to receive capital gains or dividends. In a perfect capital market where there is no opportunity of arbitrage, the stock price will drop by the amount of the dividend when the stock begins to trade ex-dividend. (Berk and DeMarzo 2014).

2.1.2 Dividends are Relevant

There is no perfect capital market described by Miller and Modigliani (1961), instead the capital markets are affected by taxes and other irregularities. The imperfections in capital markets will determine the firm's payout policy, and will therefore affect firm value. As shareholders must pay taxes on the dividend they receive and on capital gains, this will have an impact on their preferences on firm's payout policy. If dividends are taxed higher than capital gains, investors will prefer share repurchase to dividends. As presented in section 2.1, Dong, Robinson, and Veld (2005) find that one of the reasons why individual investors prefer dividends to share repurchase is due to transaction costs. By receiving dividends this saves investors transaction costs when they do not want to reinvest the dividends in the same stock. If investors instead want dividends rather than share repurchase, they can then do so by selling shares. Although, if dividends and capital gains are taxed with the same rate, the long-term investors will get a tax advantage by share repurchase. Higher tax on dividends will also make it undesirable for a firm to pay dividends as this will decrease the value of the firm, this implies that the optimal payout policy is to withstand paying dividends (Berk and DeMarzo 2014).

If investors are rational they should have a tax-related dividend aversion and prefer low-dividend yield stocks in the presence of preferential tax treatment on capital gains. This dividend aversion will result in larger pretax risk-adjusted return for stock with larger divided yields (Kalay and Lemmon 2008). Tests by Black and Scholes (1974)

and Litzenberger and Ramaswamy (1979) were conducted using the capital asset pricing model of Brennan (1970) to test the tax-related dividend aversion of investors. In the capital asset pricing model a security's pretax excess return is linear and positively related to its systematic risk and dividend yield. Black and Scholes (1974) tested the Brennan model by using a long run estimate of the dividend yield. They classify stocks with a high estimated dividend yield as having a high expected yield over the following year. In their results they find no difference in pretax risk-adjusted returns across stocks with high- and low-dividend yields as well as no difference in after-tax risk-adjusted returns as a function of the dividend yield. With these results, Black and Scholes argue that it is not possible to tell what effect change in dividend policy will have on a firm's stock price. In contrary, Litzenberger and Ramaswamy (1979) do in fact find evidence consistent with the tax hypothesis, that is, capital gains are preferred over share repurchase. In their experiment they estimate a short-run measure of the expected dividend yield.

2.1.2.1 Dividend Signalling Theory

The dividend signalling theory is one of the most prominent theories to explain the effects of a firm's payout policy. The idea of the dividend signalling hypothesis is that change in dividends reflect managers' view about the firms earning prospects. When a firm increases its dividend, the management sends a positive signal to investors that it expects to afford this raise in dividends. Conversely, when dividends are cut the management sends a signal that the firm will expect lower earnings in the future (Berk and DeMarzo 2014). The dividend signalling hypothesis was initially proposed by Lintner in 1956. Lintner (1956) interviewed managers from 28 companies in the period from 1947-1953. He found that managers only change dividends when they are certain that they can be sustained in the future, otherwise they will remain sticky, i.e., management are reluctant to change dividend policy although earnings are falling. By increasing dividends, the management signal that the firm has permanently increased its earnings. Later there has been developed several dividend-signalling models such as Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985). There are two features that is common among these models. First, managers hold private information about the firm's future earnings prospects and that they will communicate this information to the market by using dividend payments. Second, firms have incentives to immediately establish its true market value.

The Bhattacharya model (1979) assume that outside investors have imperfect information about firm's profitability and that cash dividends are taxed at a higher rate than capital gains. He argues that the size of the announced dividends will depend on the management's prospects of the firm's investment projects. The Miller and Rock model (1985) assumes that firm insiders hold more information about the firm than the market. Because of this asymmetry of information, the value of the firm will be perceived differently. As the management know the true value of the firm, they want to maximize the wealth of the shareholders that want to sell their holdings. As a firm increases its dividend, it must also reduce its investments. According to their theory, these firms are characterized as "better" firms by cutting investments to pay higher dividends. John and Williams (1985) developed a model in which the "costs" of signalling the firm's future prospect to the market is the personal tax disadvantage of dividends, and explain why firms pay dividends. In the model, shareholders will sell shares to gain capital. Because managers act in the interest of their shareholders and know the true value of their firm they will want to pay a taxable dividend to increase the share price. Outsiders will then interpret the dividend as a positive signal which will rise the share price. This results in shareholders selling a smaller number of shares to meet their liquidity needs. Although shareholders will have to pay tax on the dividend, they will benefit from selling shares at a higher price and maintain a larger fraction of the firm's equity. The model suggests that the dividends depend on expected future cash flows and the tax disadvantage on dividends relative to capital gains. The models presented look at a tax advantage for share repurchases to dividends. In Norway tax on capital gains and dividends are taxed the same according to the shareholder model. This implies that shareholders are indifferent between share repurchase and dividends and dividends cannot be used as a signalling mechanism for management.

Watts (1973) tested whether or not dividends contain information of a firm's future earnings. More specifically, he tested the hypothesis that current and past dividends enable a better prediction of future earning than with current and past earnings alone. To test for this hypothesis Watts did a preliminary time series test where future earnings were regressed on current and past earnings and dividends. The regression indicate a positive, but not very strong, relationship between current dividends and

future earnings. With this he concluded that dividends contain little information about firm's future earnings.

Brav et al. (2005) conducted a more recent study regarding payout policy in the 21st century. In their study, they survey 384 financial executives and conduct 23 in-debt interviews to determine what factors drive dividend and share repurchase decisions. As Lintner (1956) concluded, they agree that perceived stability of future earnings affect dividend policy. However, their findings indicate that the link between earnings and dividends has weakened. They also find that many managers prefer share repurchase as this is viewed as more flexible. Brav et al. (2005) also indicate several rules in respect to payout policy which include cutting dividends will result in severe penalties, do not deviate far from competitors, maintain a good credit rating, have a broad and diverse investor base, maintain flexibility and do not take actions that will reduce earnings per share.

Capstaff, Klaeboe, and Marshall (2004) conducted a study on the signalling model where they investigated dividend announcement on the Oslo Stock Exchange. They also examined how the motivation to use dividends as a signalling mechanism in a market where corporate ownership structure is different from the U.S and U.K. They examined 156 dividend announcements for a total of 64 firms in the period 1993-1998. In their results, they support that dividend announcement convey information about the managements expectation of permanent change in the future earnings of the firm to the market. They also found that the ownership structure is not important on firm's use of dividends regardless of lower agency costs and greater information asymmetry.

2.1.3 The Norwegian Shareholder Model

The Norwegian shareholder model is based on a shielding method that applies to those who are subject to tax and own Norwegian Shares. The shielding method works by deducting a risk-free amount on dividend received and shows the dividend that can be received tax-free. The interest rate of the risk-free amount is announced by the Directorates of Taxes in January in the year following the income year and resemble the return on a three-month governmental bond (Nygaard 2011). The deductible risk-free return is calculated by multiplying the basis for deduction with deductible interest

rate. The model implies that dividends and capital gain after deduction of a risk-free return are taxable as ordinary income and is paid by the shareholder. (Altinn 2017)

As shareholders in Norway are subject to pay tax on dividend, this will impact the shareholder's preferences regarding the choice between share repurchase or dividends according to Miller and Modigliani (1961). A paper by La Porta et al. (2000) study agency problems and dividend policies around the world, including Norway. This study was conducted in 2000 and the shareholders were not obligated to pay tax on received dividends. In their paper they study the investors preferences between dividends and share repurchase, where a value of 1 means that the shareholder are indifferent between dividends and share repurchase. A value less than 1 indicate that the shareholders prefer share repurchase, and vice versa. They concluded the value of the preferences of Norwegian shareholders to be 1,08 which indicate a tax-neutral position to the payout policy. As of the new tax reform since 2000 where capital gains and dividends are taxed the same, Norwegian Shareholders are likely to be indifferent between share repurchase and dividends at value close to 1.

2.2 The Efficient Market Hypothesis

The concept of the efficient market hypothesis states that stock prices fully reflect available information. According to the theory, the prices will only change when new information occurs. However, new information is unpredictable by the means that if it could be predicted it would be a part of today's information. When stock prices change in response to new information it can be said that price changes are random. If markets are efficient then the market price will provide the best estimate of value, and if markets are inefficient the market price will deviate from the true value (Bodie et al. 2013).

Eugene Fama (1970) defines an efficient market as "a market in which prices always "fully reflect" available information […]." He also characterises three forms for market efficiency; weak form, semi-strong form and strong form.

The weak form of market efficiency states that prices reflect all historically available information, such as past trading prices and returns. If this form holds, then trading rules based on an examination of the sequence of past prices are useless and is already

reflected in the price. The strong form of market efficiency states that prices reflect, including historical data and publicly available information, information that is only available to company insiders or investors. If this form holds, then there will be no need to conduct a security analysis.

The semi-strong form of market efficiency states that prices reflect all obviously publicly available information, such as announcements of stock splits, annual reports, quality of managements and so on, in addition to all historically available information. If this form holds, then analysing publicly available information does not lead to abnormal or excess return. Then to outperform the market and earn higher returns is only the result of luck, not skills. The semi-strong market efficiency can be tested by examine how the market react to new publically available information. This can be done using the event study method which enables one to look at the impact of a particular event on the stock prices. The event could for example be dividends and earnings announcements, stock repurchase announcements, mergers and acquisitions and other non-corporate events (Bodie et al. 2013).

2.2.1 Market Anomalies

Although there is empirical evidence that markets are in fact efficient, there is also evidence that the efficient market hypothesis is not supported. Empirical evidence shows the ability to earn abnormal returns and pattern of returns that might contradict the efficient market hypothesis.

The size effect was originally documents by Banz (1981). The size effect refers to small firms that earn abnormal return. Although small-firm portfolios are riskier, adjusted for CAPM it shows to have a consistent premium for the smaller-sized portfolios. Further studies on this have been done by Keim (1983), Reinganum (1983), and Blume and Stambaugh (1983). The neglected firm effect by Arbel and Strebel (1983) is referred to which firms is neglected by large institutional traders because of their size. As information about these firms are less available, investment in these stocks may generate abnormal returns. Studies done by Amihud and Mendelson in 1986 and 1991 (Bodie et al. 2013) gives support to the neglected-firm effect. They argue that investors will require a higher rate of return on less-liquid stocks that

involve higher trading costs. Another example of market anomalies is the value effect. Fama and French (1992) found that value stocks, firms with high book-to-market ratio, outperform growth stocks, firms with low book-to-market ratio.

However, these market anomalies might have a more-subtle interpretation. Many of these phenomena are somewhat related and these firms have in common that they recently (year or month) had a significant fall in stock price (Bodie et al. 2013). Fama and French (1993) argue that these effects can be explained by signs of risk premium. Using their three-factor model they argue that these anomalies are, in fact, consistent with an efficient market where the expected returns are consistent with risk. However, Lakonishok, Shleifer, and Vishny (1994) do not follow Fama and Frenchs interpretation and argue that these phenomena are evidence of inefficient markets. They believe that analysts foresee past performance too far into the future which will lead to overpricing of firms that have recent good performance and underprice firms with recent poor performance. When the errors are recognised the price reverse.

2.2.2 Event studies

Event studies is a standard tool to test if the market is semi-strong efficient. The event study examines the impact of firms' stock prices around a specific event and examine how fast stock prices reflect new public available information. Events examined could for example be dividends and earnings announcements, stock repurchase announcements, mergers and acquisitions, or other non-corporate events that affect stock prices. If security returns show continuous nonzero abnormal returns after a particular event this is inconsistent with market efficiency (Kothari and Warner 2007).

2.2.3 Overreaction and Underreaction

How the market react to news is the strongest for of proof for the efficient market theory. If the market is efficient cumulative abnormal return (CAR) should shift in the direction of the news. If the market overreact, CAR will increase further than the efficient reaction before the price is eventually reversed. On the contrary, an underreaction can be recognized by a slow reaction to the news before increasing and stabilizing at the level of the efficient reaction. When the market react efficient this will affect the stock prices on the same day as the announcement and CAR will stabilize at this new level. The information content of the news is then fully

incorporated in the stock prices. Figure 2.1 illustrates the three ways the market could possibly react to news.

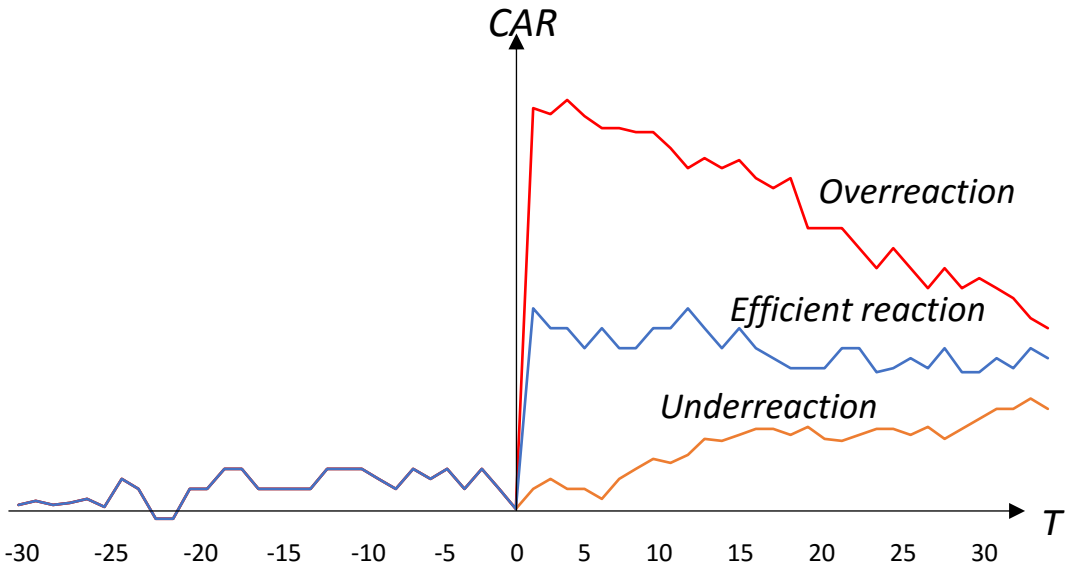

Figure 2.1 Illustration of overreaction, efficient reaction and underreaction to an event

Barberis, Shleifer, and Vishny (1998) explain that the states of underreaction and overreaction can be explained by conservatism and representativeness heuristic. By conservatism they mean that investors are slow to change their beliefs when new information occur and often hold to their previous beliefs. The result of conservatism will make investors only partially adjust their valuation in response to the announcement which result in an underreaction to the announcement. Further they explain overreaction is caused by investors that use representativeness heuristic look at the firm's history when evaluating announcements. By solely looking at the firm's history they will overvalue the firm and not only later realize its true value.

According to Daniel, Hirshleifer, and Subrahmanyam (1998) overreaction and underreaction can be explained by overconfidence and biased self-attribution. They state that investors tend to overestimate their own ability to value securities then what they actually are, which make the investor underestimate their forecast error variance. As of biased self-attribution they state that the confidence of the investor grows when there is an agreement between public information and his information, but it does not fall proportionally when public information contradicts private information. In their

results, they find that investors tend to overreact to private information signals and underreact to public information signals.

2.3 Dividend Announcements and the Market Efficiency

There are many empirical studies implemented on market efficiency and dividend announcement. The majority of these studies are done in the U.S capital market. In this section, several empirical studies on dividend announcement and market efficiency are presented from different parts of the world, including the U.S.

Aharony and Swary (1980) study dividend announcements for 149 industrial firms after controlling for earning announcements in the period 1963-1976 on the New York Stock Exchange. They use the dividend expectation model to divide the dividend announcements into three categories; no change in dividends, increase in dividends, and decrease in dividends. To find abnormal returns, they used the market model to find the expected normal return using daily data. They study the dividend announcements over an event window of 20 days, investigating abnormal returns and cumulative abnormal returns generated by the event. They find no significant abnormal returns for the no change in dividend group but find significant abnormal return for the increase in dividends and decrease in dividends group, respectively positive and negative. For both the dividend increase and dividend decrease announcements they find most of the significant abnormal returns on the day before the announcement date and on the announcement date. They conclude that, on average, the stock market adjusts efficient to dividend announcements and support the semi-strong form of market efficiency. Similar to Aharony and Swary (1980), Pettit (1972) study dividend change announcements on the New York Stock Exchange in the period 1964-1968. He used, however, both daily and monthly data in his study but support that the market is efficient in both cases.

One of the first study on dividend change announcement and the market efficiency for the UK market was conducted by Lonie et al. (1996). They examine dividend announcements from 620 firms over the sixth-month period January to June 1991. They find that dividend increase announcements generate significant positive abnormal returns, while the dividend decrease announcements generate significant negative abnormal returns. Surprisingly, they found that the constant dividend

announcement group reports significant positive returns on the day prior to the announcement date, but explain this to dissipation of uncertainty on the day of the announcement.

Al-Yahyaee, Pham, and Walter (2011) study the information content of dividends on the Muscat Securities Market in Oman. They include 501 dividend announcements from 1997-2005. The background of this study is to examine stock price reactions to dividend announcements as Oman is a unique market where there are no taxes on capital gains and dividends, high concentration of share ownership, low corporate transparency and firms frequently change their dividends. According to the tax-based dividend signalling models by Bhattacharya (1979) and John and Williams (1985) dividends in this market will not contain information of the firms future cash flow. Al-Yahyaee, Pham, and Walter (2011) results are in contrast with tax-based signalling models as they find that dividends convey information, and that there must be other factors beyond taxation differences that makes dividends informative. As Oman is characterized with both highly concentrated shareholding and scarcity of financial analysis, they conclude that dividends may be how managers can signal their expectations and confidence about the firm's future performance to the investors.

Tao, Nan, and Li (2016) examine the information content of unexpected dividend changes in China. What makes China interesting is that firms that that undertake seasoned equity offerings (SEO) must pay a minimum amount of cash dividends before they can undertake SEO, called a semi-mandatory dividend policy. The semi-mandatory dividend policy requires firms to have paid dividends for the last three years. This suggest that unexpected dividend payments convey two important signals on dividend-paying firms; a positive signal of the firms expected future earnings, and a signal of high probability of the issue of SEOs which is considered as a negative signal of firm's value. Tao, Nan, and Li (2016) collect 3334 dividends announcements in the period 2007-2013 which is then separated in expected and unexpected dividends as Chinese firms rarely maintain stable dividend payments. Further the sample is classified into non-SEO and SEO firms whether the firm has an SEO in the same year as the dividend announcement. They find results consistent with the signalling hypothesis; positive significant cumulative abnormal returns for dividend increasing, non-SEO firms, and negative insignificant results for dividend decreases. For SEO

firms they do not find significant positive results as these firms must pay sufficient earnings as dividends before issue new equity.

In Germany, Amihud and Murgia (1997) examine the tax-based signalling hypothesis. Tax on dividends in Germany are the same as on capital gains, and for most shareholder it is lower. Since higher tax on dividends is a necessary condition for dividends to be informative from the tax-based signalling hypothesis, it is expected that dividends should not be informative in Germany. However, they find that stock prices react similar to those in the U.S, where dividends are taxed higher than capital gains, and therefore it must be other reasons why dividends are informative.

3 Methodology

3.1 Event Study

The event study method is used to study the impact of an event on stock prices. The methods let us study the abnormal return of a given event and can help with the understanding of different economic effects. By studying the abnormal return of a given event, we can measure the change in shareholders wealth related to the event (Kalay and Lemmon 2008).

Campbell, Lo, and MacKinlay (1997) describes an event study as a seven-step procedure

1. Event definition
2. Selection criteria
3. Calculation of normal and abnormal returns
4. Estimation procedure
5. Testing procedure
6. Empirical results
7. Interpretation and conclusion

In Chapter 4 the event is defined and the selection criteria of the data collection is presented. Empirical results and interpretation of the results can be found in Chapter 5, and the conclusion is in Chapter 0. In this section, step 3 to 5 will be reviewed. The analysis is based on the approach described by MacKinlay (1997).

3.1.1 Long-Horizon and Short-Horizon Event Studies

Kothari and Warner (2007) specifies that long-horizon event studies generally apply to event windows of one year or more. Short-horizon methods are more reliable than long-horizon methods, although these have improved. All event studies face several issues, but these are more critical important for long-horizon studies. Following problems are included; risk-adjustment and expected/abnormal return modelling, aggregation of security-specific abnormal returns, and calibration of the statistical significance of abnormal returns (Kothari and Warner 2007). The following focus in this paper will lie on short-term event study methodology as the study is concerned with short-period returns caused by an event. As this paper will handle a 21-day

event window, the study falls under a short-term event study after Kothari and Warner's definition of a long-horizon event study.

3.1.2 Potential Problems with the Event Study Method

There are many potential problems when using the event study method. Henderson (1990) list several problems and how to deal with them. There are potential problems in defining the event date, characterize normal returns, calculating excess returns, aggregating excess returns and run statistical test. One of the greatest problems when defining the exact date the event occurred lies in if the market could have anticipated the news. The choice of characterizing normal returns affect the excess returns caused by the event. There are two problems in statistical test, the first is whether to use parametric or nonparametric test, the second is deciding which test statistic to use. Henderson (1990) conclude that nonparametric tests are complicated and do not work well. Further he claims that a simple t-test work well. The problem in the t-test lies in estimating the standard deviation.

3.1.3 Models for Measuring Normal Returns

In order to calculated the abnormal return on an asset caused by the event it is necessary to identify what normal return behaviour is. MacKinlay (1997) describes two categories of approaches which can be used to calculate normal return; economic models and statistical models.

Economic models are not based solely on statistical assumption, but take into account economic arguments like investors' behaviour. However, it is not possible to exclude statistical assumption in practice. It is common to consider the two economic models, the Capital Asset Pricing Mode (CAPM) and Arbitrage Pricing Theory (APT), when conducting event studies. The expected return of a given asset in the CAPM is determined by its covariance with the market, while the APT expected return of an asset is a linear combination of multiple risk factors. However, these models are less frequently used compared to other statistical models because of restrictions and they contribute with relative little explanatory power compared to e.g. the market model.

A statistical model follows from statistical assumption and do not follow economic arguments. These models impose that asset returns are jointly multivariate normal and independently and identical distributed through time MacKinlay (1997).

It is common to model normal return with the market model or the constant mean return model. The market model assumes a stable linear relation between the market return and the security return, and the constant mean return model assumes that the mean return of a given security is constant over time. Given the distributional assumption of the statistical models, the market model and the constant mean return model are assumed to be correctly specified. A third choice of measuring normal return can also be considered, factor models. Factor models is motivated by adding more factors to reduce the variance of the abnormal return. However, the benefits from adding more explanatory factors are limited in event studies and prove little reduction in the variance of the abnormal return. In the case where the sample firms have common characteristics, multi factor models can be beneficial. How beneficial the market model, contrary to the constant mean return model, is to model normal return depends on the models R^2. A higher R^2 means greater advantage from using the market model.

3.1.3.1 The Market Model

As stated, the marked model is a one-factor statistical model. The model relates the return of a given security to the return of the market portfolio without conditioning on the event taking place (MacKinlay 1997). Campbell, Lo, and MacKinlay (1997, 151) define normal return as "the return that would be expected if the event did not take place." We define the market model for any security i

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (1)$$
$$E(\varepsilon_{it} = 0) \qquad Var(\varepsilon_{it}) = \sigma^2_{\varepsilon_{i'}}$$

where R_{it} and R_{mt} are the return on the period t security i and returns on the market portfolio respectively, and ε_{it} is the error term with expected value zero. α_i, β_i and $\sigma^2_{\varepsilon_{i'}}$ are parameters of the market model for each security i. These parameters can be calculated through ordinary least square (OLS) regression.

3.1.4 Event date, Event Window and Estimation Date

In order to estimate the market model for each security i, it is important to identity the event window, the estimation window and the post-event window. The period prior to the event window is often used as the estimation window, and it is important for the event window and the estimation window not to overlap. By doing so, one makes sure that the normal return measure is not influenced by the event. However, if they do overlap, both the normal return and the abnormal return will capture the impact of the event. The time line sequence of an event study is illustrated in Figure 3.1**.**

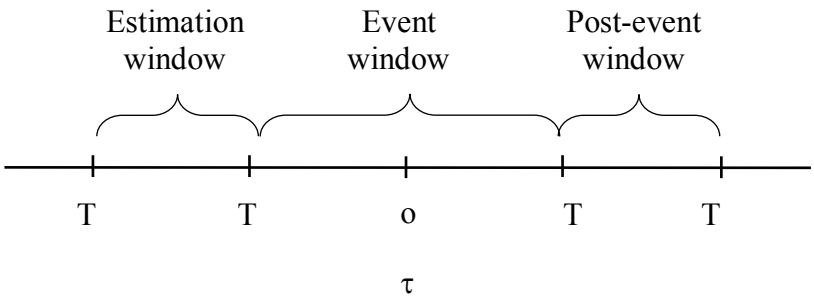

Figure 3.1 Time line for an event study by MacKinlay (1997)

The event date is represented by $\tau = 0$. $\tau = T_1 + 1$ to $\tau = T_2$ represent the event window with length $L_2 = T_2 - T_1$. $\tau = T_0 + 1$ to $\tau = T_1$ represent the estimation window with length $L_1 = T_1 - T_0$. The event date, $\tau = 0$, is when the market gains knowledge about the new information. It is important that to identify the exact date of the event to prevent interference of the abnormal return following from the event when calculating normal return.

3.1.5 Abnormal Returns

MacKinlay (1997, 15) define abnormal return as "the actual ex post return of the security over the event window minus the normal return of the firm over the event window." The abnormal return for security i and event date τ is defined as

$$AR_{i\tau} = R_{i\tau} - \hat{a}_i - \hat{\beta}_i R_{m\tau} \qquad (2)$$

Under the null hypothesis, abnormal returns will be jointly normally distributed with zero conditional mean and conditional variance. The variance of the abnormal return, given the market model, is

$$\sigma^2(AR_{i\tau}) = \sigma_{\varepsilon_i}^2 + \frac{1}{L_1}\left[1 + \frac{(R_{m\tau} - \hat{\mu}_m)^2}{\hat{\sigma}_m^2}\right] \quad (3)$$

Equation (3) illustrate that the conditional variance consists of two components. The first component, $\sigma_{\varepsilon_i}^2$, is the disturbance variance from the market model (**equation** (1)**)** and the second component, α_i and β_i, is additional variance due to the sampling error in the market model parameters. As L_1, the length of the estimation window, become larger, the second term approaches zero as the sampling error of the parameters vanishes. The variance of the abnormal returns can then be approximated by

$$\sigma^2(AR_{i\tau}) \approx \sigma_{\varepsilon i}^2 \quad (4)$$

3.1.6 Cumulative Abnormal Return

To draw any implications of the event the abnormal returns must be aggregated. This will be done along two dimensions, through time and across securities. First, abnormal returns are aggregated across time using cumulative abnormal return (CAR). This method measures the sum of each security i average abnormal performance from time τ_1 through τ_2 where $T_1 < \tau_1 \leq \tau_2 \leq T_2$ (MacKinlay 1997). CAR for security i starting at time τ_1 through τ_2 is defined as

$$CAR_i(\tau_1\tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau} \quad (5)$$

To analyse the abnormal returns for any event period, the abnormal returns of the sample must be aggregated for the event window. This can be done by aggregating the samples abnormal returns from equation (2) with all *N* securities for each event period τ. For each sample average abnormal returns (AAR) for period $\tau = T_1 + 1, \ldots, T_2$ is

$$\overline{AR}_\tau = \frac{1}{N}\sum_{i=1}^{N} AR_{i\tau} \tag{6}$$

The variance of the sample aggregated abnormal return for large L_1 is

$$var(\overline{AR}_\tau) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma_{\varepsilon_i}^2 \tag{7}$$

To calculate the cumulative average abnormal return (CAAR) for each security i the same approach as calculating CAR in Equation (5) is used. AAR is aggregated over the event window. For any interval in the event window CAAR is

$$\overline{CAR}(\tau_1\tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \overline{AR}_\tau \tag{8}$$

The variance of the cumulative average abnormal return is

$$var\big(\overline{CAR}(\tau_1\tau_2)\big) = \sum_{\tau=\tau_1}^{\tau} var(\overline{AR}_\tau) \tag{9}$$

3.1.7 Test Statistic

The test statistic compute and compare cumulative average abnormal returns (CAAR) and average abnormal returns (AAR) to it assumed distribution under the null hypothesis that abnormal performance equals zero. This is done under the assumption that there is no clustering, i.e. that there is no overlap in the event windows of the included securities. To avoid clustering, each event is separated with event time. This assumption implies that the abnormal returns and the cumulative abnormal returns will be independent across securities. This test statistic is done at test level 0.10, 0.05 and 0.01. As the abnormal returns are measured with error the test statistic is a random variable.

$$\overline{CAR}(\tau_1\tau_2) \sim N[0, var(\overline{CAR}(\tau_1\tau_2))] \quad (10)$$

Since the real value of $\sigma_{\varepsilon i}^2$ is unknown, an estimator must accordingly be used to calculate the variance of the abnormal returns as in (7). According to MacKinlay (1997) the sample variance measure of $\sigma_{\varepsilon i}^2$ from the market model regression can be an appropriate choice.

The null hypothesis can be tested by estimating θ_1

$$\theta_1 = \frac{\overline{CAR}(\tau_1\tau_2)}{var(\overline{CAR}(\tau_1\tau_2))^{1/2}} \sim N(0,1) \quad (11)$$

4 Data

The full sample consists of 236 dividend announcement observation. The sample is further divided into three subsamples to study the full effect on the dividend change in the respective group. The subsamples are dividend increase, constant dividend and dividend decrease with respectively 123, 50 and 63 observations in each subsample.

Dividend announcements are manually collected from Oslo Stock Exchange's NewsWeb[1] whereas the direction of the dividend is compared to the last dividend payment. Stock prices and information about the firm regarding the dividend announcement is gathered from Titlon[2] which is a database with financial data from Oslo Stock Exchange. The index used to calculate the market model is OSEBX and is downloaded from Oslo Stock Exchange's webpage[3]. OSEBX is the Oslo Stock Exchange Benchmark Index which comprises the most traded shares listed on the stock exchange.

4.1 Event Study Definition

This chapter describes briefly the choices made regarding the conducted event study. Normal returns are estimated using the market model described in Chapter 0. Figure 4.1 illustrate the timeline for this event study.

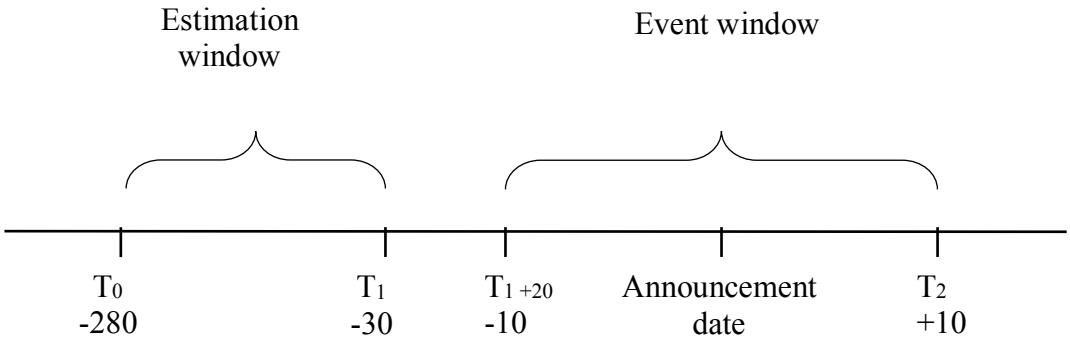

Figure 4.1 Timeline for the Event Study

[1] http://www.newsweb.no/newsweb/search.do

[2] https://titlon.uit.no

[3] https://www.oslobors.no

4.1.1 The Market Model

The market model is used to estimate the normal returns of the events. To find the abnormal return of each observation the market model had to be calculated for every dividend announcement observation, resulting in 236 individual market models. OSEBX is used as the market index in the calculations. This index is chosen as it is the Oslo Stock Exchange Benchmark Index which comprises the most traded shares listed on the stock exchange. The calculated R^2 from the market model will indicate how beneficial this model is in contrary to the constant mean return model. The results of the calculations show varying R^2 results, ranging from 0,0064 to 0,7894 (median: 0,2976).

4.1.2 The Event and Event Date

The event of interest is dividend announcement for firms listed on the Oslo Stock Exchange. The events are collected from January 2007 to November 2013. The event date is set to the day when the firm first announces the dividend, *not* the payment date.

The event date is found by investigating messages from all listed firms containing dividend announcements through NewsWeb. Dividend announcements are found in messages containing quarterly reports, Annual General Meeting notice/minutes and separate announcements of dividends. The exact date of the event is when the first message containing dividend announcements is released. For example, if the firm announce the dividend in a quarterly report, the day of the release of this message/quarterly report is set as the event date. Example of what a message from NewsWeb looks like can be found in Appendix 1.

4.1.3 The Event Window

The event window is set 10 days prior to and after the announcement which comprises a 21-day event window. This will capture the effect of the event and reveal if information has been leaked to the market prior to the event or if the market has a delayed reaction to the event.

4.1.4 The Estimation Window

The estimation window is set to 250 trading days (approximately one calendar year), similar to MacKinlay (1997). Since it is important to avoid overlap between the event window and the estimation window, there is a gap of 20 days between these windows. This will make sure that the event will have no effect on the estimation of normal returns.

4.2 Oslo Stock Exchange

Previous research on the market efficiency and event studies are commonly done on the U.S Stock market. In this paper, all firms in the sample are listed on the Oslo Stock Exchange which is the only regulated market for securities traded in Norway.

Oslo Stock Exchange holds a unique position as it is leading in Energy, Shipping and Sea Food. Approximately 50% of the listed stocks on the exchange is categorized in the industries Energy and Industrials. Table 4.1 illustrate the average industry breakdown of firms listed on Oslo Stock Exchange in the period 2007-2013.

Industry	**Average 2007-2013**
Energy	29 %
Industrials	22 %
Information Technology	14 %
Financials	8 %
Health Care	7 %
Consumer Staples	7 %
Consumer Discretionary	5 %
Materials	5 %
Utilities	2 %
Telecommunication Services	1 %

Table 4.1 Average industry breakdown for listed firms from 2007 to 2013

4.3 Data Collection and Description

The data on dividend announcements are manually collected from NewsWeb. The announcements are gather by examine messages for *all* listed firms in the sample period from NewsWeb. The number of firms listed ranges from 172 in 2007 to 118 in 2013 (Table 4.2). The announcements are primarily found in the fourth quarter reports, but as some firms paid dividend several times a year some dividend announcements were also collected from different quarterly reports, announcements prior to the general meeting or general meeting reports. It is important to note that the dividend announcement date that is being used, not the dividend payment date. The reason for this is to capture the market reaction to the news on the dividend announcement.

Year	2007	2008	2009	2010	2011	2012	2013
Number of firms	172	154	142	138	133	129	118

Table 4.2 Number of listed firms from 2007-2017 (Statistics Norway 2002-2016)

In line with previous event studies on dividend announcement and as Campbell, Lo, and MacKinlay (1997, 151) describes as the second step when conducting an event study, it is important to determine the selection criteria of the data collection. The data in the final sample is collected by the following criteria:

1) The firm is listed on the Oslo Stock Exchange
2) The announcement date is available at Oslo Stock Exchange's Newsweb
3) The firm paid an ordinary dividend in the current and previous year
4) Firm data is available for the whole estimation period from Titlon
5) The firm is listed at least 250 trading days preceding the announcement date

Based on the given criteria above the total sample consist 236 dividend announcement observation divided on a total of 54 firms. Each firm is grouped according to the Global Industry Classification Standard (GICS) which is also done by the Oslo Stock Exchange. The sample firms do however not represent all the industries within GICS, missing Health Care and Utilities. The lack of the two missing industries is due to the selection criteria. The final sample exclude 133 event (32 firms) as some firms were savings banks and due to large gaps in trading frequency. Saving banks are excluded as they issue equity certificates. The total number of sample firm and dividend

announcement in each industry are listed in Table 4.3, and the sample firms are further illustrated in Figure 4.2. The sample firm industry breakdown show similar breakdown as the industry breakdown of the firms listed on the Oslo Stock Exchange illustrated in Table 4.1

Industry	# Firms	# Dividend Announcements
Energy	16 (30 %)	92
Industrials	10 (19 %)	58
Information Technology	8 (15 %)	23
Financials	7 (13 %)	18
Consumer Staples	6 (11 %)	17
Materials	3 (6 %)	11
Consumer Discretionary	3 (6 %)	10
Telecommunication Services	1 (2 %)	7
Total	54	236

Table 4.3 Industry breakdown of sample firm and dividend announcements

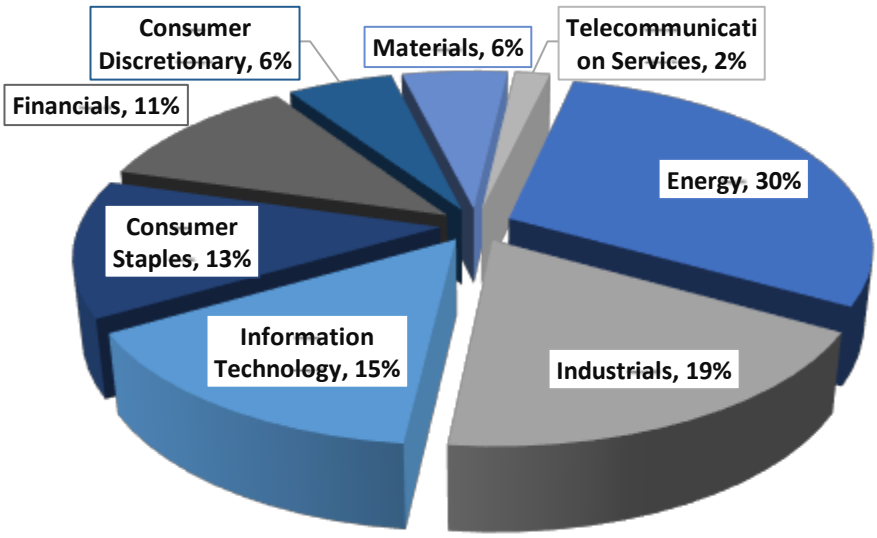

Figure 4.2 Industry breakdown of sample firms

During the collection of the sample data, expected dividend to be paid per share by the firm was collected. Expected dividend per share was collected to identify the direction of the dividend change. To find the direction of the dividend, the expected dividend payment was compared to the last dividend payment. The direction of the dividend is divided into Dividend Increase, Constant Dividend and Dividend Decrease with respectively 123, 50 and 63 observation in each group. In Table 4.4 the yearly distribution of dividend change announcement in each group is illustrated.

Year	Dividend Increase	Constant Dividend	Dividend Decrease
2007	13	6	5
2008	18	8	9
2009	9	2	14
2010	13	11	7
2011	26	8	6
2012	20	6	14
2013	24	9	8
Total	**123**	**50**	**63**

Table 4.4 Yearly distribution of dividend changes

Figure 4.3 illustrate the yearly distribution of dividend changes. From the figure, we can see that the numbers of dividend increases are falling from 2008 to 2009, but are increasing after 2009. On the contrary dividend decreases act the opposite, increasing from 2008 until 2009, and falling after 2009. Constant dividends are experiencing a drop from 2008 to 2009 before increasing until 2011. These time trends in dividend changes, as Figure 4.3 illustrate, are likely a result of the financial crisis in 2008. The number of dividend increases and constant dividends are drastically falling whereas the number of dividend decreases are rising and firms are being effected by the financial crisis.

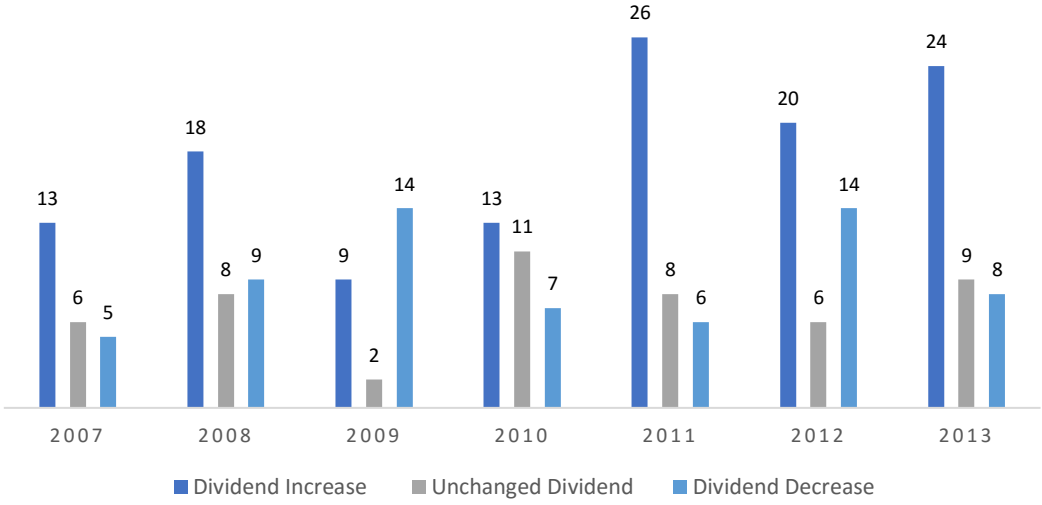

Figure 4.3 Yearly distribution of dividend changes

The full list of sample firms and dividend announcement date separated into their subsequent groups can be found in Appendix 2 and 3.

5 Empirical Analysis

The analysis in this chapter is based on the methodology in Chapter 0 and data in Chapter 0. The purpose of the study is to test the signalling theory of dividend payment policy. The null hypothesis is that there is no effect of changes to dividend payment policy and the alternative hypothesis is that there is an effect of changes to dividend payment policy. The test is conducted on daily average abnormal returns (AAR) and cumulative average abnormal returns (CAAR). CAAR is used studied as it illustrates the aggregated effect on the abnormal return.

In the sample results, the results of the analysis are presented and grouped based on the direction of the dividend announcement. For each group, the average abnormal return and the cumulative average abnormal return is plotted in a diagram to show the respectively effects relative to the announcement date. To test the null hypothesis a two-tailed test at significance level 1%, 5% and 10% is used. The test statistic is conducted for every day relative to the announcement date for AAR and CAAR for different event windows to test the null hypothesis.

AAR is tested as follows:

***H_o:* Expected average abnormal return is zero, AAR = 0**

***H_1:* Expected average abnormal return is different from zero, AAR ≠ 0**

CAAR is tested as follows:

***H_o:* Expected cumulative average abnormal return is zero, CAAR = 0**

***H_1:* Expected cumulative average abnormal return is different from zero, CAAR ≠ 0**

5.1 Sample result

5.1.1 Dividend Increases

The subsample Dividend Increase consists of 123 observations. Figure 5.1 illustrate the daily average abnormal return and cumulative abnormal return for all observations in the subsample, 10 days prior and 10 days after the dividend increase announcement. In Table 5.1 the daily AAR and CAAR relative the announcement date is presented with the daily test estimator, θ_1. For the increased dividend announcements, it is expected that the market will have a positive response to the announcement.

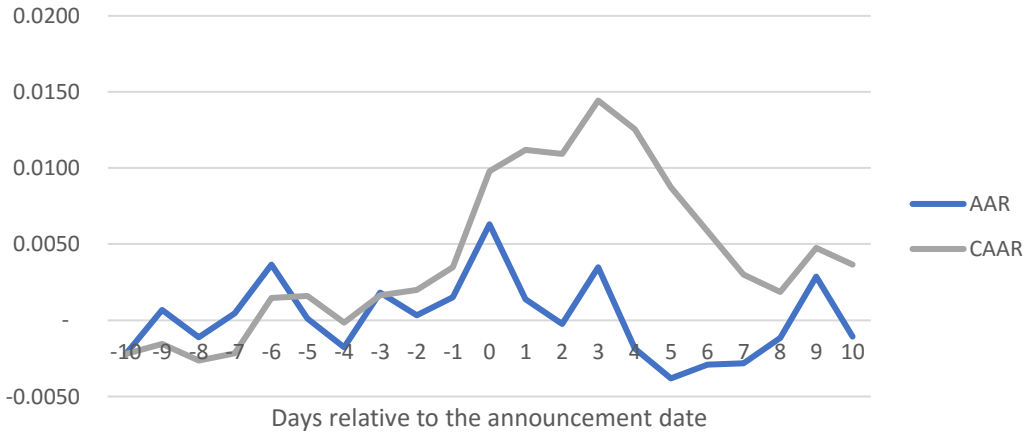

Figure 5.1 Average abnormal return (AAR) and cumulative average abnormal return (CAAR) for Dividend Increase relative to the announcement date
Note: CAAR is aggregated from day -10

Figure 5.1 illustrate the daily AAR and CAAR relative to the announcement date. CAAR is aggregated from day -10 to 10 to illustrate the effect of the event on the stock prices. From the figure, we can see that AAR is regularly spiking and seem random. CAAR has a regular constant drift upwards before it starts falling around day 4.

The result of the analysis in Table 5.1 show that on the announcement date AAR is strongly significantly different from zero and convey information about how the market reacts to the announcement of increased dividend. There are no significant abnormal returns on the day before or on the date after the event which means that there has not been any information leakage to the market and the market has adjusted to the news. Thus, the results show that AAR is not equal to zero at the announcement date and the null hypothesis can be rejected.

After the announcement date, there are significant abnormal returns with negative signs. This indicate that there are some other events that has interfered with the results. On the event date CAAR shift upward and stabilizes which also confirms that the market has adjusted to the news and that the information content of the announcement is incorporated in the price. The further increase in CAAR and the following decrease is most likely caused by other events.

Days relative to the announcement date	**AAR**	**θ_1**	**CAAR**	**θ_1**
-10	-0,0022	-1,2501	-0,0022	-1,2501
-9	0,0007	0,3852	-0,0015	-0,4324
-8	-0,0011	-0,6215	-0,0026	-0,4955
-7	0,0005	0,2652	-0,0022	-0,3053
-6	0,0037	2,0611**	0,0015	0,1680
-5	0,0001	0,0604	0,0016	0,1501
-4	-0,0018	-0,9864	-0,0002	-0,0123
-3	0,0018	1,0255	0,0017	0,1174
-2	0,0003	0,1831	0,0020	0,1247
-1	0,0015	0,8510	0,0035	0,1974
0	**0,0063**	**3,5540*** **	**0,0098**	**0,5025**
1	0,0014	0,7715	0,0112	0,5249
2	-0,0002	-0,1296	0,0110	0,4746
3	0,0035	1,9622*	0,0144	0,5808
4	-0,0019	-1,0512	0,0126	0,4720
5	-0,0038	-2,1472**	0,0088	0,3083
6	-0,0029	-1,6400	0,0058	0,1937
7	-0,0028	-1,5909	0,0030	0,0946
8	-0,0011	-0,6469	0,0019	0,0556
9	0,0029	1,6136	0,0047	0,1335
10	-0,0011	-0,5993	0,0037	0,0986

, **, *; significant at 10%, 5% and 1% respectively*

Table 5.1 Stock Market Reaction to Dividend Increase illustrating AAR and CAAR aggregated from day -10 and their respectively θ_1

5.1.2 Constant Dividend

The subsample Constant Dividend consists of 50 observations. Figure 5.2 illustrate the daily average abnormal return and cumulative abnormal return for all observations in the subsample, 10 days prior and 10 days after the dividend increase announcement. In Table 5.2 the daily AAR and CAAR relative the announcement date is presented with the daily test estimator, θ_1. For constant dividend announcements, it is expected that the market will have no reaction to the dividend announcement.

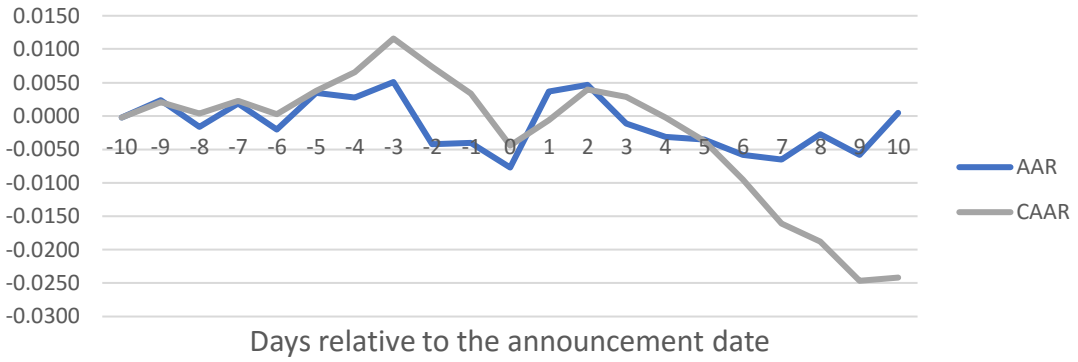

Figure 5.2 Average abnormal return (AAR) and cumulative average abnormal return (CAAR) for Constant dividend relative to the announcement date
Note: CAAR is aggregated from day -10

Figure 5.2 illustrate the daily AAR and CAAR relative to the announcement date. CAAR is aggregated from day -10 to 10 to illustrate the effect of the event on the stock prices. From the figure, we can see that AAR is fluctuating between 0,005 and -0,005. After the event date, CAAR drifts upwards before it starts falling around day 3.

The announcement date shows somewhat unexpected results. The results are significant negative average abnormal returns at this date. From the theory, it is not expected that constant dividend announcement should generate abnormal returns, but rather no reaction. By further investigating this, almost all events in the sample show significant abnormal return on the announcement date. Out of the significant abnormal returns, the positive and negative significance is divided approximately 50-50. The significant negative results have a higher level of significance which explain the result. One explanation to the significant negative abnormal return is that the firm's shareholders were expecting a dividend increase, e.g. in period of growth, but were disappointed with a constant dividend announcement. The results are somewhat influenced by extreme observations due to the small sample size, but by excluding the

top two and bottom two observations the results still hold. With this, the null hypothesis, that AAR is zero, is rejected.

Similar to Capstaff, Klaeboe, and Marshall (2004), their study show negative abnormal returns on the announcement date, but the result is not significant at a 5% significance level. Their results would however be significant if they included a 10% significance level.

Days relative to the announcement date	**AAR**	**θ_1**	**CAAR**	**θ_1**
-10	-0,0003	-0,0903	-0,0003	-0,0903
-9	0,0024	0,7735	0,0021	0,3416
-8	-0,0017	-0,5451	0,0004	0,0460
-7	0,0019	0,6146	0,0023	0,1882
-6	-0,0020	-0,6582	0,0003	0,0189
-5	0,0035	1,1420	0,0038	0,2061
-4	0,0028	0,9057	0,0065	0,3060
-3	0,0051	1,6735	0,0116	0,4770
-2	-0,0042	-1,3806	0,0074	0,2706
-1	-0,0041	-1,3380	0,0033	0,1097
0	**-0,0077**	**-2,5361****	**-0,0044**	**-0,1308**
1	0,0037	1,2166	-0,0007	-0,0185
2	0,0047	1,5309	0,0040	0,1006
3	-0,0011	-0,3639	0,0029	0,0675
4	-0,0031	-1,0178	-0,0002	-0,0049
5	-0,0035	-1,1596	-0,0037	-0,0771
6	-0,0058	-1,9051*	-0,0095	-0,1846
7	-0,0065	-2,1518**	-0,0161	-0,2939
8	-0,0028	-0,9087	-0,0188	-0,3262
9	-0,0058	-1,9155*	-0,0247	-0,4057
10	0,0005	0,1563	-0,0242	-0,3789

*, **, ***; significant at 10%, 5% and 1% respectively

Table 5.2 Stock Market Reaction to Constant Dividend illustrating AAR and CAAR aggregated from day -10 and their respectively θ_1

5.1.3 Dividend Decreases

The subsample Dividend Decrease consists of 63 observations. Figure 5.3 illustrate the daily average abnormal return and cumulative abnormal return for all observations in the subsample, 10 days prior and 10 days after the dividend increase announcement. In Table 5.3 the daily AAR and CAAR relative the announcement date is presented with the daily test estimator, θ_1. For the dividend decrease announcements, it is expected that the market will have a negative reaction to the announcement.

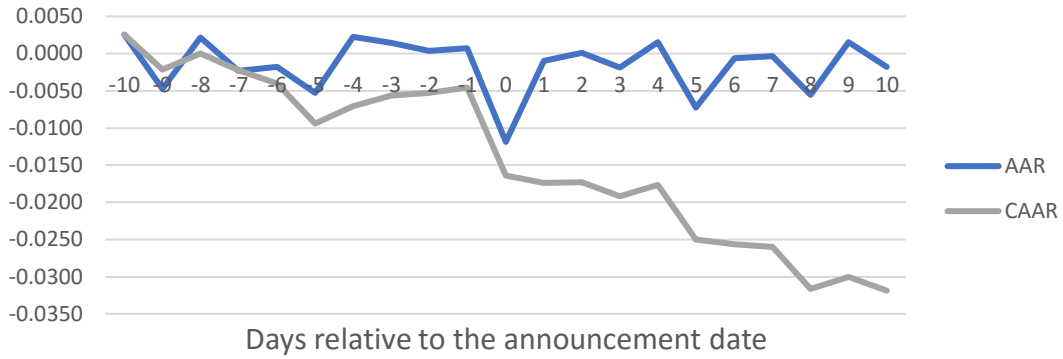

Figure 5.3 Average abnormal return (AAR) and cumulative average abnormal return (CAAR) for Dividend Decrease relative to the announcement date
Note: CAAR is aggregated from day -10

Figure 5.3 illustrate the daily AAR and CAAR relative to the announcement date. CAAR is aggregated from day -10 to 10 to illustrate the effect of the event on the stock prices. AAR is slightly fluctuating prior and after the event, but show a fall on the announcement date. CAAR has a downward shift on the announcement date and remains stable until day 4.

On the announcement date, average abnormal return is significantly negative, and the null hypothesis for the dividend decrease sample is rejected. On the following day after the announcement date, AAR is still negative, but not significant. The abnormal return fluctuates slightly the subsequent days after which is an indication that the information content of the dividend has been incorporated in the stock prices. This pattern of abnormal return is also visible prior to the announcement date.

Days relative to the announcement date	AAR	θ_1	CAAR	θ_1
-10	0,0025	0,8565	0,0025	0,8565
-9	-0,0047	-1,5902	-0,0022	-0,3669
-8	0,0022	0,7374	0,0000	0,0012
-7	-0,0023	-0,7723	-0,0023	-0,1922
-6	-0,0018	-0,6050	-0,0041	-0,2747
-5	-0,0053	-1,7886*	-0,0094	-0,5270
-4	0,0023	0,7639	-0,0071	-0,3426
-3	0,0015	0,4911	-0,0057	-0,2384
-2	0,0004	0,1336	-0,0053	-0,1971
-1	0,0007	0,2372	-0,0046	-0,1536
0	**-0,0119**	**-4,0053*****	**-0,0164**	**-0,5038**
1	-0,0010	-0,3266	-0,0174	-0,4890
2	0,0001	0,0254	-0,0173	-0,4495
3	-0,0019	-0,6342	-0,0192	-0,4627
4	0,0015	0,5102	-0,0177	-0,3978
5	-0,0073	-2,4603**	-0,0250	-0,5267
6	-0,0007	-0,2230	-0,0257	-0,5088
7	-0,0004	-0,1261	-0,0260	-0,4876
8	-0,0056	-1,8801*	-0,0316	-0,5609
9	0,0015	0,5208	-0,0301	-0,5068
10	-0,0018	-0,6106	-0,0319	-0,5117

*, **, ***; significant at 10%, 5% and 1% respectively

Table 5.3 Stock Market Reaction to Dividend Decrease illustrating AAR and CAAR aggregated from day -10 and their respectively θ_1

5.1.4 Cumulative Average Abnormal Return

To capture the effect of the information content of the dividend announcement it is necessary to study the days close to the announcement date. The average abnormal returns are aggregated around the announcement date. In Table 5.4 cumulative average abnormal return (CAAR) is illustrated for different event windows. CAAR is calculated for the event windows [-1,+1], [-1,0], and [0,+1].

Event window	Dividend Increase	t-test	Constant Dividend	t-test	Dividend Decrease	t-test
[-1,+1]	0,0092	1,7255*	-0,0081	-0,8858	-0,0121	-1,3649
[-1,0]	0,0078	2,2025**	-0,0118	-1,9371*	-0,0112	-1,8841*
[0,+1]	0,0210	5,9134***	-0,0050	-0,8308	-0,0128	-2,1660**

, **, *; significant at 10%, 5% and 1% respectively*

Table 5.4 Cumulative Average Abnormal Return (CAAR) for Different Event Windows

The results from Table 5.4 show significant positive CAAR for Dividend Increase in all the event windows, while Dividend Decrease shows significant negative CAAR in all the event windows. Constant Dividend shows significant negative CAAR in the event window of [-1,0]. This confirms the effect on the dividend announcement that it is possible to earn abnormal returns, and in line with the average abnormal results from Table 5.1, Table 5.2 and Table 5.3 the null hypothesis that cumulative average abnormal returns are zero can be rejected.

5.2 Differences Between Industry Groups and Regression Analysis

The firms listed on Oslo Stock Exchange are separated by industry, and as different industries will react different on dividend announcement it is useful to study the effect caused by the event by industries. In some industries firms can afford to pay more dividends than others, especially established firms. When a firm pay out dividends it means that the firm will not use that capital on for example investment opportunities. For industries such as Information Technology and Telecommunication Services increase in dividends could be seen a sign of lack of investment opportunities and a weakness. As illustrated section 4.3 and Table *5.5*, the industry groups included in the full sample is not equally weighted. Number of observations on each industry is presented in brackets and further dividend to their subsequent dividend announcement groups. The number of observation in each industry show that the industries that hold the most observations are Energy and Industrials. Information Technology and Telecommunication Services are combined as they are similar with regards to technology. The remaining industries (Financials, Consumer Staples, Materials and Consumer Discretionary) are combined in the group "Others" since they do not hold many observations for each subsample. Due to the small sample size (5 observations) for dividend decrease and constant dividend in Information Technology and Telecommunication Services, these results should be interpreted with caution.

Table *5.5* illustrate the results of the analysis of CAAR divided in industries in event window [-1, +1]. For the Dividend Increase observation there are no significant results of the analysis. This indicates that the result of CAAR in Table 4.1 is not driven by a specific industry. In the industries Information Technology and Telecommunication Services CAAR [-1, +1] is significant negative for both constant dividend and dividend decrease. Further, CAAR [-1, +1] for dividend decrease in Industrials show negative significant abnormal returns. The results for Information Technology and Telecommunication services are not as expected as these industries generate negative significant returns for both unchanged dividends and dividend decreases. Thus, there must by other underlying factors that contribute to the negative results.

Energy						
	Up (52)	θ_1	Unchanged (17)	θ_1	Down (23)	θ_1
CAAR [-1,1]	0,0073	1,4477	-0,0065	-0,6055	-0,0232	-0,6055
Industrials						
	Up (27)	θ_1	Unchanged (19)	θ_1	Down (17)	θ_1
CAAR [-1,1]	0,0244	1,5630	-0,0090	-0,7695	-0,0232	-2,8800**
Information Technology and Telecommunication Services						
	Up (20)	θ_1	Unchanged (5)	θ_1	Down (5)	θ_1
CAAR [-1,1]	0,0017	0,0823	-0,0293	-3,4530***	-0,0693	-2,7224**
Other						
	Up (29)	θ_1	Unchanged (9)	θ_1	Down (18)	θ_1
CAAR [-1,1]	0,0062	0,5193	0,0027	0,2249	0,0045	0,2946

Table 5.5 AAR and CAAR divided by industry and announcement direction. Number of announcements are in brackets

To see if there is a relationship between cumulative abnormal returns (CAR), and dividend changes and industries, a regression analysis is used. CAR [-1,1] is used as the dependent variable, while dummies for dividend increases (Up), dividend decreases (Down) and the industries Energy and Industrials are the independent variables. The regression is used to examine if investors can earn abnormal returns from the independent variables. The output of the regression output is presented in Table 5.6.

The model's adjusted R^2 is 4,1% which indicate that 4,1 % of the variation in CAR can be explained by the independent variables. Dividend increases (Up) is the only independent variable with significant (positive) results. From the regression output, dividend increase (Up) has a beta of 0,02 and t-value of 2,505. The results imply that there is a positive relationship between CAR [-1,1] and dividend increases (Up). This

means that it can be expected to earn positive abnormal returns when holding stocks of dividend increasing firms.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,239[a]	,057	,041	,04657

a. Predictors: (Constant), Industrials, Down, Energy, Up

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,030	4	,008	3,495	,009[b]
	Residual	,501	231	,002		
	Total	,531	235			

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,013	,008		-1,569	,118
	Up	,020	,008	,210	2,505	,013
	Down	-,003	,009	-,025	-,298	,766
	Energy	-,001	,007	-,009	-,120	,905
	Industrials	,013	,008	,116	1,589	,113

a. Dependent Variable: CAR

Table 5.6 Regression output

6 Conclusion

The purpose of the study is to test the dividend signalling theory in the Norwegian stock market. To see if there is support for the signalling theory, dividend announcements for the period 2007-2013 has been examined. The dividend change announcements are divided into three groups; dividend increase, constant dividend and dividend decrease. All the groups are treated as their own sample and compared to another.

The results from the analysis show that there are abnormal returns to be made in all the three categories; dividend increase, constant dividend and dividend decrease. Both the dividend increase and dividend decrease show that the market has fully incorporated the information content of the dividend and adjusted the prices thereafter. The results show some significant results after the event date, but this is caused by other interfering events. Thus, this will not change the conclusion that the null hypothesis that abnormal returns are equal to zero is rejected. The most surprising results is in the constant dividend group which show significant negative abnormal returns on the event date. After investigating why this is the case, the results show that there are several extreme observations due to small sample size that influence the results. The explanation behind these results can be that some firms has given the expression that there will be a dividend increase in the future but the shareholders were disappointed with a constant dividend announcement. The results of the regression analysis show a positive relationship between CAR [-1,+1] for dividend increasing firm. This indicate that there are positive abnormal returns to be made from stocks of dividend increasing firms.

As a consequence of the analysis in this thesis, I support the dividend signalling theory. The results also indicate that higher tax on dividends relative to capital gains is not a necessary condition for dividends to be informative. Because the event study method, I also support that the Norwegian capital market is semi-strong efficient However, I recommend for further study that more event observations are included in the sample, i.e. longer sample period to prevent extreme observations to interfere with the results. It can also be beneficial to control for other variables, like earning announcements, and use multiple models for normal returns to see if the results still hold.

References

Data Sources

http://www.newsweb.no/newsweb/search.do
https://titlon.uit.no
https://www.oslobors.no

Books

Berk, Jonathan B., and Peter M. DeMarzo. 2014. *Corporate finance*. Vol. Third Global. Harlow, Essex: Pearson Education Limited.

Bodie, Zvi, Michael Drew, Anup K. Basu, Alex Kane, and Alan Marcus. 2013. *Principles of investments*. North Ryde, NSW: McGraw-Hill Education (Australia).

Webpages

Altinn. 2017. "Taxation of personal shareholders." accessed 27 April 2017. https://www.altinn.no/en/Start-and-Run-a-Business/Operation/Other-operational-tasks/Limited-companies/Share-dividend/Taxation-of-personal-shareholders/.

Statistics Norway. 2002-2016. "Key figures for listed enterprises." accessed 12 May 2017. https://www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=regnbors&CMSSubjectArea=virksomheter-foretak-og-regnskap&PLanguage=1&checked=true.

Statistics Norway. 2004-2015. "Shares and capital returns." accessed 16 May 2017. https://www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=aksjer&CMSSubjectArea=virksomheter-foretak-og-regnskap&PLanguage=1&checked=true.

Cited References

Aharony, Joseph, and Itzhak Swary. 1980. "Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis." *The Journal of Finance* 35 (1):1-12. doi: 10.2307/2327176.

Al-Yahyaee, Khamis H., Toan M. Pham, and Terry S. Walter. 2011. "The information content of cash dividend announcements in a unique environment." *Journal of Banking & Finance* 35 (3):606-612. doi: https://doi.org/10.1016/j.jbankfin.2010.03.004.

Amihud, Yakov, and Maurizio Murgia. 1997. "Dividends, Taxes, and Signaling: Evidence from Germany." *The Journal of Finance* 52 (1):397-408. doi: 10.1111/j.1540-6261.1997.tb03822.x.

Arbel, Avner, and Paul Strebel. 1983. "Pay attention to neglected firms!" *The Journal of Portfolio Management* 9 (2):37-42.

Banz, Rolf W. 1981. "The relationship between return and market value of common stocks." *Journal of Financial Economics* 9 (1):3-18. doi: http://dx.doi.org/10.1016/0304-405X(81)90018-0.

Barberis, Nicholas, Andrei Shleifer, and Robert Vishny. 1998. "A model of investor sentiment1." *Journal of Financial Economics* 49 (3):307-343. doi: https://doi.org/10.1016/S0304-405X(98)00027-0.

Bhattacharya, Sudipto. 1979. "Imperfect Information, Dividend Policy, and "The Bird in the Hand" Fallacy." *The Bell Journal of Economics* 10 (1):259-270. doi: 10.2307/3003330.

Black, Fischer, and Myron Scholes. 1974. "The effects of dividend yield and dividend policy on common stock prices and returns." *Journal of Financial Economics* 1 (1):1-22. doi: http://dx.doi.org/10.1016/0304-405X(74)90006-3.

Blume, Marshall E., and Robert F. Stambaugh. 1983. "Biases in computed returns." *Journal of Financial Economics* 12 (3):387-404. doi: http://dx.doi.org/10.1016/0304-405X(83)90056-9.

Brav, Alon, John R. Graham, Campbell R. Harvey, and Roni Michaely. 2005. "Payout policy in the 21st century." *Journal of Financial Economics* 77 (3):483-527. doi: http://dx.doi.org/10.1016/j.jfineco.2004.07.004.

Brennan, Michael J. 1970. "TAXES, MARKET VALUATION AND CORPORATE FINANCIAL POLICY." *National Tax Journal* 23 (4):417-427.

Campbell, John Y, Andrew W Lo, and A Craig MacKinlay. 1997. "Event-study analysis." *The Econometrics of Financial Markets*:149-180.

Capstaff, John, Audun Klaeboe, and Andrew P. Marshall. 2004. "Share price reaction to dividend announcements: empirical evidence on the signalling model from the Oslo Stock Exchange." *Multinational Finance Journal* 8 (1-2):115-139.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam. 1998. "Investor Psychology and Security Market Under- and Overreactions." *The Journal of Finance* 53 (6):1839-1885. doi: 10.1111/0022-1082.00077.

Dong, Ming, Chris Robinson, and Chris Veld. 2005. "Why individual investors want dividends." *Journal of Corporate Finance* 12 (1):121-158. doi: https://doi.org/10.1016/j.jcorpfin.2004.04.006.

Fama, Eugene. 1970. "Efficient Capital Markets: A Review of Theory and Empirical Work." *Journal of Finance* 25 (2):383-417.

Fama, Eugene F., and Kenneth R. French. 1992. "The Cross-Section of Expected Stock Returns." *The Journal of Finance* 47 (2):427-465. doi: 10.2307/2329112.

Fama, Eugene F., and Kenneth R. French. 1993. "Common risk factors in the returns on stocks and bonds." *Journal of Financial Economics* 33 (1):3-56. doi: http://dx.doi.org/10.1016/0304-405X(93)90023-5.

Henderson, Glenn V. 1990. "Problems and Solutions in Conducting Event Studies." *The Journal of Risk and Insurance* 57 (2):282-306. doi: 10.2307/253304.

John, Kose, and Joseph Williams. 1985. "Dividends, Dilution, and Taxes: A Signalling Equilibrium." *Journal of Finance* 40 (4):1053-1070.

Kalay, Avner, and Michael Lemmon. 2008. "Chapter 10 - Payout Policy* A2 - Eckbo, B. Espen." In *Handbook of Empirical Corporate Finance*, 3-57. San Diego: Elsevier.

Keim, Donald B. 1983. "Size-related anomalies and stock return seasonality." *Journal of Financial Economics* 12 (1):13-32. doi: http://dx.doi.org/10.1016/0304-405X(83)90025-9.

Kothari, SP, and Jerold B Warner. 2007. "The Econometrics of Event Studies." In *Handbook of Corporate Finance, Volume 1*, edited by Espen Eckbo.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W Vishny. 2000. "Agency problems and dividend policies around the world." *The journal of finance* 55 (1):1-33.

Lakonishok, Josef, Andrei Shleifer, and Robert W Vishny. 1994. "Contrarian investment, extrapolation, and risk." *The journal of finance* 49 (5):1541-1578.

Lintner, John. 1956. "Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes." *The American Economic Review* 46 (2):97-113.

Litzenberger, Robert H., and Krishna Ramaswamy. 1979. "The effect of personal taxes and dividends on capital asset prices." *Journal of Financial Economics* 7 (2):163-195. doi: http://dx.doi.org/10.1016/0304-405X(79)90012-6.

Lonie, Alasdair A, Gunasekarage Abeyratna, David M Power, and C Donald Sinclair. 1996. "The stock market reaction to dividend announcements: A UK study of complex market signals." *Journal of Economic Studies* 23 (1):32-52.

MacKinlay, A Craig. 1997. "Event studies in economics and finance." *Journal of economic literature* 35 (1):13-39.

Miller, Merton H., and Franco Modigliani. 1961. "Dividend Policy, Growth, and the Valuation of Shares." *The Journal of Business* 34 (4):411-433.

Miller, Merton H., and Kevin Rock. 1985. "Dividend Policy under Asymmetric Information." *The Journal of Finance* 40 (4):1031-1051. doi: 10.2307/2328393.

Nygaard, Knut. 2011. "The disposition effect and momentum: Evidence from norwegian household investors."

Pettit, R. Richardson. 1972. "Dividend Announcements, Security Performance, and Capital Market Efficiency." *The Journal of Finance* 27 (5):993-1007. doi: 10.2307/2978844.

Reinganum, Marc R. 1983. "The anomalous stock market behavior of small firms in January." *Journal of Financial Economics* 12 (1):89-104. doi: http://dx.doi.org/10.1016/0304-405X(83)90029-6.

Tao, Qizhi, Runxi Nan, and Haoyu Li. 2016. "Information content of unexpected dividends under a semi-mandatory dividend policy: An empirical study of China." *The North American Journal of Economics and Finance* 37:297-318. doi: https://doi.org/10.1016/j.najef.2016.05.001.

Watts, Ross. 1973. "The Information Content of Dividends." *The Journal of Business* 46 (2):191-211.

Appendix 1: Example of NewsWeb message

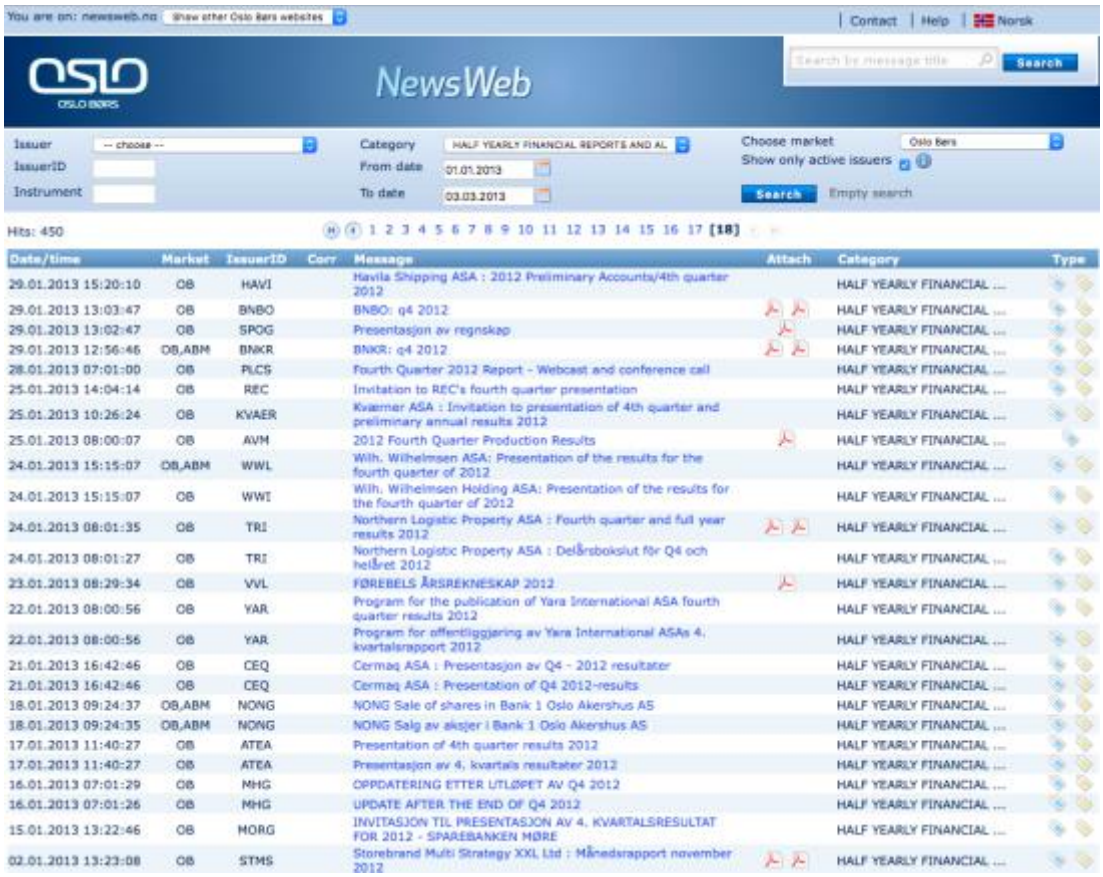

Illustration of the front page of a specific search on NewsWeb. Here: half year financial reports and audit reports/limited reviews, from 01.01.2013-03.03.2013 in market Oslo Børs. To include all listed firms, "Issuer" is set as "- - choose - - "

Illustration of a message containing quarterly report. Here the event date, if containing a dividend announcement, would be 24.01.2013. The text and attachments of the message are examined to see if the firm announce dividends.

Appendix 2: List of Sample Firms

#	Company name	Ticker	Industry
1	Aktiv Kapital ASA	AIK	Financials
2	Aker ASA	AKER	Energy
3	ABG Sundal Collier Holding ASA	ASC	Financials
4	Atea ASA	ATEA	Information Technology
5	Austevoll Seafood ASA	AUSS	Consumer Staples
6	Bakkafrost P/f	BAKKA	Consumer Staples
7	Belships ASA	BEL	Industrials
8	Bonheur ASA	BON	Energy
9	BWG Homes ASA	BWG	Consumer Discretionary
10	BW Offshore Limited	BWO	Energy
11	Cermaq ASA	CEQ	Consumer Staples
12	DNB ASA	DNB	Financials
13	Ekornes ASA	EKO	Consumer Discretionary
14	Eltek ASA	ELT	Information Technology
15	EVRY ASA	EVRY	Information Technology
16	Farstad Shipping ASA	FAR	Energy
17	Fred. Olsen Energy ASA	FOE	Energy
18	Fred. Olsen Production ASA	FOP	Energy
19	Frontline Ltd.	FRO	Energy
20	Gjensidige Forsikring ASA	GJF	Financials
21	Golar LNG Limited	GOL	Energy
22	Ganger Rolf ASA	GRO	Energy
23	Grieg Seafood ASA	GSF	Consumer Staples
24	Inmeta Crayon ASA	INM	Information Technology
25	Itera ASA	ITE	Information Technology
26	Kongsberg Gruppen ASA	KOG	Industrials
27	Komplett ASA	KOM	Consumer Discretionary
28	Lerøy Seafood Group ASA	LSG	Consumer Staples
29	Marine Harvest ASA	MHG	Consumer Staples
30	Norsk Hydro ASA	NHY	Materials
31	Nordic Semiconductor ASA	NOD	Information Technology
32	Northern Offshore, Ltd	NOF	Energy
33	Norwegian Property ASA	NPRO	Financials

34	Norske Skogindustrier ASA	NSG	Materials
35	Odfjell SE	ODF	Industrials
36	Orkla ASA	ORK	Consumer Staples
37	Petroleum Geo-Services ASA	PGS	Energy
38	Prosafe SE	PRS	Energy
39	Seadrill Limited	SDRL	Energy
40	Stolt-Nielsen Limited	SNI	Industrials
41	Storebrand ASA	STB	Financials
42	Statoil ASA	STL	Energy
43	STX Europe AS	STXEUR	Industrials
44	Subsea 7 S.A.	SUBC	Energy
45	SuperOffice ASA	SUO	Information Technology
46	Tandberg ASA	TAA	Information Technology
47	Telenor ASA	TEL	Telecommunication Services
48	TGS-NOPEC Geophysical Company ASA	TGS	Energy
49	Tomra Systems ASA	TOM	Industrials
50	TTS Group ASA	TTS	Industrials
51	Veidekke ASA	VEI	Industrials
52	Wilh. Wilhelmsen ASA	WWASA	Industrials
53	Wilh. Wilhelmsen Holding ASA	WWI	Industrials
54	Yara International ASA	YAR	Materials

Appendix 3: List of Event Dates

3A. Dividend Increase Announcement Dates

Company name	Event date	Company name	Event date
Aker ASA	01.03.2007	Prosafe SE	02.11.2011
Aker ASA	25.02.2010	Prosafe SE	23.05.2012
Aker ASA	25.02.2011	Prosafe SE	08.02.2013
Aker ASA	29.02.2012	Prosafe SE	14.05.2013
Aker ASA	22.02.2013	Prosafe SE	22.08.2013
ABG Sundal Collier Holding ASA	13.02.2007	Seadrill Limited	27.05.2008
ABG Sundal Collier Holding ASA	12.02.2008	Seadrill Limited	25.02.2010
Atea ASA	03.02.2010	Seadrill Limited	27.05.2010
Atea ASA	03.02.2011	Seadrill Limited	31.08.2010
Atea ASA	02.02.2012	Seadrill Limited	30.11.2010
Atea ASA	07.02.2013	Seadrill Limited	24.02.2011
Austevoll Seafood ASA	23.02.2011	Seadrill Limited	30.11.2011
Austevoll Seafood ASA	26.02.2013	Seadrill Limited	29.02.2012
Bakkafrost P/f	27.02.2013	Seadrill Limited	14.05.2012
Bonheur ASA	19.02.2008	Seadrill Limited	27.08.2012
Bonheur ASA	20.02.2013	Seadrill Limited	26.11.2012
BW Offshore Limited	19.02.2013	Seadrill Limited	28.05.2013
Cermaq ASA	16.02.2011	Seadrill Limited	28.08.2013
DNB ASA	22.02.2007	Seadrill Limited	25.11.2013
DNB ASA	14.02.2008	Storebrand ASA	16.02.2011
DNB ASA	10.02.2011	Statoil ASA	27.02.2008
DNB ASA	07.02.2013	Statoil ASA	09.02.2011
Ekornes ASA	15.02.2011	Statoil ASA	08.02.2012
Eltek ASA	10.02.2011	Statoil ASA	07.02.2013
Farstad Shipping ASA	26.02.2008	STX Europe AS	16.02.2007

Farstad Shipping ASA	12.02.2009	Subsea 7 S.A.	16.03.2012
Farstad Shipping ASA	16.02.2011	SuperOffice ASA	16.02.2007
Farstad Shipping ASA	16.02.2012	SuperOffice ASA	15.02.2008
Fred. Olsen Energy ASA	06.02.2008	Tandberg ASA	14.02.2008
Fred. Olsen Energy ASA	16.02.2011	Tandberg ASA	18.02.2009
Fred. Olsen Energy ASA	06.02.2013	Telenor ASA	15.02.2007
Frontline Ltd.	27.02.2007	Telenor ASA	13.02.2008
Gjensidige Forsikring ASA	14.02.2013	Telenor ASA	10.02.2010
Golar LNG Limited	21.02.2012	Telenor ASA	08.02.2011
Ganger Rolf ASA	29.02.2008	Telenor ASA	08.02.2012
Ganger Rolf ASA	20.02.2013	Telenor ASA	13.02.2013
		TGS-NOPEC Geophysical Company	
Grieg Seafood ASA	22.02.2011	ASA	09.02.2012
		TGS-NOPEC Geophysical Company	
Inmeta Crayon ASA	07.02.2007	ASA	07.02.2013
Inmeta Crayon ASA	06.02.2008	Tomra Systems ASA	14.02.2007
Inmeta Crayon ASA	04.02.2010	Tomra Systems ASA	20.02.2008
Itera ASA	12.02.2008	Tomra Systems ASA	19.02.2009
Kongsberg Gruppen ASA	13.02.2007	Tomra Systems ASA	19.02.2010
Kongsberg Gruppen ASA	07.02.2008	Tomra Systems ASA	18.02.2011
Kongsberg Gruppen ASA	13.02.2009	Tomra Systems ASA	17.02.2012
Komplett ASA	04.02.2010	Tomra Systems ASA	15.02.2013
Komplett ASA	04.02.2011	TTS Group ASA	14.02.2008
Lerøy Seafood Group ASA	26.02.2009	Veidekke ASA	15.02.2007
Lerøy Seafood Group ASA	25.02.2010	Veidekke ASA	16.02.2012
Lerøy Seafood Group ASA	23.02.2011	Wilh. Wilhelmsen ASA	18.10.2012
Marine Harvest ASA	09.02.2011	Wilh. Wilhelmsen ASA	14.02.2013
		Wilh. Wilhelmsen	
Norsk Hydro ASA	16.02.2011	Holding ASA	14.02.2008
		Wilh. Wilhelmsen	
Nordic Semiconductor ASA	11.02.2010	Holding ASA	12.02.2009

Northern Offshore, Ltd	21.02.2013	Wilh. Wilhelmsen Holding ASA	16.02.2011
Norwegian Property ASA	29.02.2012	Wilh. Wilhelmsen Holding ASA	15.02.2012
Orkla ASA	14.02.2007	Wilh. Wilhelmsen Holding ASA	18.10.2012
Orkla ASA	10.02.2011	Yara International ASA	09.02.2007
Petroleum Geo-Services ASA	14.02.2013	Yara International ASA	14.02.2008
Prosafe SE	27.08.2009	Yara International ASA	17.02.2009
Prosafe SE	05.11.2009	Yara International ASA	15.02.2011
Prosafe SE	26.08.2010	Yara International ASA	07.02.2012
Prosafe SE	25.05.2011	Yara International ASA	12.02.2013
Prosafe SE	25.08.2011		

3B. Constant Dividend Announcement Dates

Company name	Event date	Company name	Event date
Belships ASA	14.02.2008	Northern Offshore, Ltd	23.02.2012
Bonheur ASA	19.02.2010	Norwegian Property ASA	15.02.2013
		Norske Skogindustrier	
Bonheur ASA	23.02.2011	ASA	07.02.2007
BW Offshore Limited	18.11.2011	Orkla ASA	11.02.2010
Ekornes ASA	15.02.2007	Orkla ASA	09.02.2012
Ekornes ASA	15.02.2008	Orkla ASA	07.02.2013
Eltek ASA	10.02.2010	Prosafe SE	07.11.2013
EVRY ASA	08.02.2013	Seadrill Limited	28.08.2008
Farstad Shipping ASA	15.02.2007	Seadrill Limited	25.08.2011
Fred. Olsen Energy			
ASA	11.02.2009	Stolt-Nielsen Limited	25.04.2007
Fred. Olsen Energy			
ASA	16.02.2012	Stolt-Nielsen Limited	09.11.2007
Fred. Olsen Production			
ASA	13.02.2013	Stolt-Nielsen Limited	07.02.2008
Frontline Ltd.	14.02.2008	Stolt-Nielsen Limited	14.11.2008
Frontline Ltd.	16.02.2010	Stolt-Nielsen Limited	12.11.2009
Ganger Rolf ASA	19.02.2010	Stolt-Nielsen Limited	19.11.2010
Ganger Rolf ASA	23.03.2011	Stolt-Nielsen Limited	17.02.2011
Itera ASA	20.03.2007	Stolt-Nielsen Limited	10.11.2011
Itera ASA	16.02.2010	Stolt-Nielsen Limited	07.02.2012
Kongsberg Gruppen			
ASA	10.02.2012	Stolt-Nielsen Limited	07.11.2013
Kongsberg Gruppen			
ASA	08.02.2013	Storebrand ASA	17.02.2010
		TGS-NOPEC	
		Geophysical Company	
Komplett ASA	31.01.2008	ASA	10.02.2011
Lerøy Seafood Group			
ASA	26.02.2013	Veidekke ASA	11.02.2010

Norsk Hydro ASA	19.02.2008	Veidekke ASA	10.02.2011
		Wilh. Wilhelmsen	
Norsk Hydro ASA	16.02.2012	Holding ASA	11.02.2010
Norsk Hydro ASA	12.02.2013	Yara International ASA	15.02.2010

3C. Dividend Decrease Announcement Dates

Company name	Event date	Company name	Event date
Aktiv Kapital ASA	29.02.2012	Norsk Hydro ASA	19.02.2007
Aker ASA	29.02.2008	Odfjell SE	04.03.2008
Aker ASA	27.02.2009	Odfjell SE	04.02.2009
Austevoll Seafood ASA	23.02.2012	Orkla ASA	14.02.2008
Bonheur ASA	12.02.2009	Prosafe SE	09.02.2007
Bonheur ASA	23.02.2012	Prosafe SE	12.05.2010
BWG Homes ASA	15.02.2011	Prosafe SE	04.11.2010
BW Offshore Limited	14.02.2012	Prosafe SE	01.03.2012
Cermaq ASA	14.02.2008	Prosafe SE	23.08.2012
Cermaq ASA	09.02.2012	Prosafe SE	01.11.2012
Cermaq ASA	12.02.2013	Seadrill Limited	27.05.2011
DNB ASA	11.02.2010	Stolt-Nielsen Limited	14.11.2012
DNB ASA	09.02.2012	Storebrand ASA	14.02.2007
Ekornes ASA	12.02.2009	Storebrand ASA	13.02.2008
Ekornes ASA	14.02.2012	Storebrand ASA	11.02.2009
Ekornes ASA	17.04.2013	Storebrand ASA	14.02.2012
Farstad Shipping ASA	17.02.2010	Statoil ASA	17.02.2009
Farstad Shipping ASA	14.02.2013	Statoil ASA	11.02.2010
Fred. Olsen Energy ASA	17.02.2010	Telenor ASA	11.02.2009
Frontline Ltd.	26.02.2009	TTS Group ASA	26.02.2009
Frontline Ltd.	22.02.2011	TTS Group ASA	14.02.2013
Golar LNG Limited	26.02.2008	Veidekke ASA	14.02.2008
Ganger Rolf ASA	12.02.2009	Veidekke ASA	12.02.2009
Ganger Rolf ASA	23.02.2012	Veidekke ASA	14.02.2013
Inmeta Crayon ASA	05.02.2009	Wilh. Wilhelmsen ASA	06.11.2013
Inmeta Crayon ASA	03.02.2011	Wilh. Wilhelmsen Holding ASA	15.02.2007
Itera ASA	13.03.2009	Wilh. Wilhelmsen Holding ASA	01.11.2007

Itera ASA	22.02.2011	Wilh. Wilhelmsen Holding ASA	31.10.2008
Kongsberg Gruppen ASA	19.02.2010	Wilh. Wilhelmsen Holding ASA	08.11.2011
Komplett ASA	04.02.2009	Wilh. Wilhelmsen Holding ASA	14.02.2013
Lerøy Seafood Group ASA	26.02.2008	Wilh. Wilhelmsen Holding ASA	06.11.2013
Lerøy Seafood Group ASA	23.02.2012		