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**THE ANNOUNCEMENT EFFECT OF CASH DIVIDEND:
EVIDENCE FROM TURKISH CAPITAL MARKET**

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ABSTRACT

This study analyses the announcement effect of cash dividends on share prices in the Turkish capital markets. It is investigated whether cash dividend announcements result in an abnormal return around the announcement day in Istanbul Stock Exchange. The abnormal returns which are calculated using the market adjusted model, between t-5 and t+15 days event windows are used to test this effect. In the regression, a dividend per share is regressed on the abnormal returns in the event windows from t-5 to t+15 days.

The study uses data of 330 events for 88 companies from 2003 to 2007. The main findings of the study are; first, there is a significant negative relationship between cash dividends and abnormal returns after the announcement. The announcement of a higher cash dividend per share results in significant a higher negative abnormal return and the announcement of a lower cash dividend per share results in significant a lower negative abnormal return. In the case of only cash dividends announcements, the announcement of a cash dividend itself has a significant effect on share prices. In the event study analysis, only the announcement of cash dividends decrease results in a significant abnormal positive return in the event windows after the announcement day. Second, the adjustment of prices to new information starts on the announcement day and it continues at least 15 days. The most significant price adjustment takes place in the first three days. Third, there is no significant relationship between cash dividends and abnormal returns prior to the announcement day which implies that there is no significant information leakage prior to the information becoming publicly available.

The observed negative relationship between cash dividends and abnormal share returns after the announcement on the Istanbul Stock Exchange can be explained by the tax clientele effect. In Turkey capital gains are taxed at lower than the dividend yields. Shareholders therefore prefer earnings to be retained rather than paid out as a dividend. Since the results document that there is no information leakage prior to the announcement day, the regulation and supervision of the capital markets in Turkey can be said to be effective and efficient in preventing insider trading in relation to cash dividends.

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1. INTRODUCTION

The relationship between a dividend and firm's value or firm's share price has been researched for more than 50 years. Theories have been developed and many empirical studies have tested these theories, but it is still a puzzle whether dividends have an effect on the value of a firm or a firm's share price. The effect of dividend on value or price is important as it can have serious implications for regulation and supervision in capital markets. Since information is a crucial element of markets, most capital markets and legal systems bring strict disclosure provisions and sanctions into force to make sure that information is available for everyone at the same time.

In almost every capital market, it is forbidden to trade with insider information and it is such information significantly affects the stock price when it is announced. From the perspective of capital market regulation, the effect of dividends is a very important issue because if it has an effect on firm's price, then it is evaluated as insider information and it must be announced to the public.

It is generally accepted that a dividend changes affect the share price around the announcement day of the dividend. Therefore many legal systems including, Turkish capital market, see the dividend announcement as a price sensitive information. However, some empirical studies document that dividends have no effect on share price. The studies that are investigating whether dividends have significant announcement effect on share price are crucial not only for theory but also for regulation and supervision.

In theory, the relationship between dividends and a firm's share price is explained by the following three major theories, the information-signalling, the free cash flow and the dividend clientele.

The information content of dividends was introduced by Lintner (1956) and Miller and Modigliani (1961) and subsequently formalized by Battacharya (1979), John and Williams (1985) and Millier and Rock (1985) as "Signalling Theory". Although, Miller and Modigliani (1961) proposed that dividends have no effect on value and capital structure of a firm under perfect market conditions, they believed that dividends convey information about firm's future earnings and cash flows. The managers of the firm have private information about future prospects of the firm and this leads to asymmetric information between managers and shareholders. Therefore, the dividend is used to reduce the level of the asymmetric information.

The information-signalling hypothesis is tested by examining the relationship between current dividends and future earnings or relationship between the dividends and excess returns on share prices around the announcement. Future earnings and dividends relationship are supported by the studies of Fama and Babiak (1968), DeAngelo and DeAngelo (1990), Fama et al (1969), Pettit (1972), Woolridge (1983), Venkatesh (1989), Lang and Litzenberger (1989) and Jensen and Johnson (1995). Their findings suggest that dividend changes convey information to the market about a firm's future earnings and profitability.

Besides testing the earnings and dividends relationship, many studies have investigated the announcement effect of dividends on stock prices. Although, Ang (1975), Genodes (1978) and Watts (1973) found that an unexpected change in a dividend cause little or no announcement effect. Pettit (1972, 1976), Charest (1978),

Aharony and Swary (1980), Woolridge (1982), Asquith and Mullins (1983), Kalay and Lowenstein (1985) and Akhigbe and Madura (1996) document that the announcement of dividends increases result in positive abnormal returns while dividends decreases create negative abnormal returns.

The free cash flow hypothesis, takes agency theory as a base to explain this issue, which was introduced by Jensen (1986). According to Jensen (1986), a management is reluctant to pay out dividends, as they want more discretionary free cash flow in the firm. More free cash flow allows the management to invest in projects that have negative net present value and to use cash for their self interest. The role of dividends become important as they can be used as a tool of decreasing free cash flow under a management control and thus lowering agency cost.

The studies of DeAngelo and DeAngelo (2000), La Porta et al (2000), Rozeff (1982) and Easterbrook (1984) support the free cash flow hypothesis while the study of Dennis et al (1994) does not support it.

The dividend clientele effect hypothesis argues that some investors prefer earnings to be paid out as dividends while others prefer earning to be retained in the firm due to different taxation of capital gain and dividend yields. In the case of lower taxation of capital gain, Black and Scholes (1974) and Miller and Scholes (1982) argue that there should not be a relation between a dividend and a return. The favourable taxation of capital gain is formulised as Tax Clientele Effect by Miller and Modigliani (1961) and Black and Scholes (1974). It argues that some firms attract investors because the firm's dividend policy suits the investors' tax preferences. If capital gains are less taxed at lower rate, then shareholders want earnings to be retained in the firm. If the

firm therefore changes the dividend policy of the firm, then shareholders take position to avoid from tax burden in the future.

Studies that investigate the price effect of dividend announcements are mainly based on developed capital markets data. There are very limited studies on this issue in an emerging market such as Turkey. The main research about Turkey are Aydogan and Muradoglu (1998)/Muradoglu and Aydogan (2003) and Batchelor and Orakcioglu (2003) which used the data of 90's, and generally did not use exact date for the announcements. They focused mainly on the stock dividends and stock repurchases.

The data for this study is collected from the Istanbul Stock Exchange (ISE). Although the dividend announcements and price data are publicly available, each announcement date is collected manually from whole material events of each company. The ISE publishes the closing price of each companies and market index XUTUM which contains whole companies' weighted prices. The sample consists of the last 5 years (2003-2007) data and 330 events of 88 companies.

This study uses the event study methodology and regression analysis. The market adjusted model is applied to find abnormal returns within the event windows from $t-5$ to $t+15$ days. The event windows are opened to examine the information leakage prior to the announcement and price adjustment to new information after the announcement. In regression analysis, a dividend per shares is regressed on cumulative abnormal returns along the event windows.

Previous researches on dividends in Turkey were undertaken when the economy was suffering from high inflation and the ISE was its early stage. Turkish capital markets have developed rapidly since the end of the 1980's, and the economy has passed through a number of financial crises and has undergone many structural reforms

during last 20 years. In the last six years the economy has been more stable and the inflation is considerably lower compared to 90's. This study provides empirical evidence about the announcement effect of cash dividends by using more recent and exact announcement day.

This research, explaining the price effect of cash dividends, is very crucial for the Turkish capital market both from theoretical and regulatory perspectives. The results from this study show that the announcement of a higher cash dividend per share results in significant a higher negative abnormal return and the announcement of a lower cash dividend per share results in significant a lower negative abnormal return. In the event study, only the announcement of cash dividends decrease result in a significant abnormal positive return in the event windows after the announcement day. The results support the tax clientele effect hypothesis. Furthermore, the results suggest that regulation and supervision is effective and efficient in preventing significant information leakage prior to the individual announcement day. Compared to Aydogan and Muradoglu (1998), the efficiency of the market has increased over time since the adjustment of price to new information start at day zero and the most significant adjustment takes place between day zero and day two.

It has been observed that the main problem in these studies is the difficulty in separating the announcement effect of dividends from other announcements, which takes place on same day. In this study, the announcement of cash dividends separated from other announcements such as earning or stock dividends by creating appropriate data. The results document that the announcement of cash dividends create a significant negative abnormal returns individually.

The rest of the study is organized as follows. Section two provides an overview of the Turkish institutional and legal framework, the development of Turkish capital markets and microstructure of the ISE. Section three presents the relevant literature. Section four develops the hypotheses that will be tested. In section five and six, the data and methodology are introduced. Section seven presents the empirical results and their implications. Finally, section eight concludes.

2. INSTITUTIONAL BACKGROUND OF TURKISH CAPITAL MARKETS

Turkish financial market is functionally demarcated between insurance, capital market and banking. Financial institutions in capital market can not operate in banking and insurance market and vice versa. Therefore, regulation and supervision is also separated among the regulators. Turkish capital markets were legalized with the amendment of Capital Market Law and the foundation of Capital Markets Board (CMB) which is the regulatory and supervisory authority and is responsible for capital markets since 1981. The CMB has been making detailed regulations to organize the markets and developing capital market instruments for the past twenty-five years in Turkey. ISE, which is a fundamental element of capital markets, has been operating since beginning of 1986.

The numbers of outstanding securities have rapidly increased since the establishment of ISE and this rapid development makes the Turkish capital market a promising emerging market. Public sector securities are dominated by the treasury bills and the bonds whereas private sector securities are dominated by the common stocks. High inflation rates and high public debt requirement prevent private sector securities from rapid development as much as public sector. Because, high public debt requirement pushes the interest rates up, thus, private sector bonds are unable to compete with public sector bonds.

Table 1: Outstanding Securities

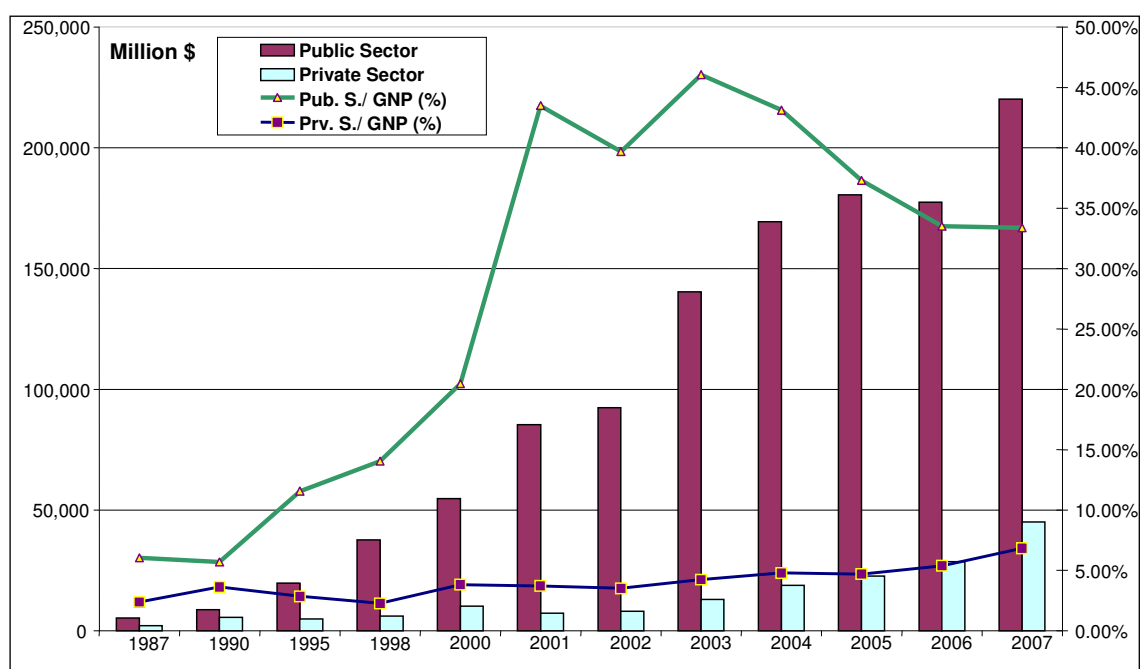
Table 1 shows the development of the private and public sector securities over time in Turkish capital markets. Public and private sector securities and total securities to GNP ratios are also shown.

<i>Years</i>	<i>Public Sector (Million US \$)</i>	<i>Private Sector (Million US \$)</i>	<i>Total (Million US \$)</i>	<i>Ratio to GNP (%)</i>
1987	5,266	2,076	7,341	8.4*
1990	8,667	5,514	14,181	9.3*
1995	19,693	4,839	24,532	14.4*
1998	37,699	6,072	43,771	16.3
2000	54,784	10,224	65,008	24.3
2001	85,394	7,306	92,700	47.2
2002	92,345	8,062	100,407	43.1
2003	140,421	12,901	153,322	50.3
2004	169,447	18,766	188,214	47.9
2005	180,531	22,673	203,205	42.0
2006	177,497	28,552	206,049	38.9
2007	220,227	45,049	265,276	40.2

Source: CMB (2005 p.24, 2007 p.19) (* GNP calculation method was changed in 2007 and ratios recalculated back to 1998)

Figure 1: Development of Outstanding Securities

The figure 1 shows the development of the private and public sector securities over time and the ratio of private and public sector securities to GNP in Turkish capital markets.



Source: CMB (2005 p. 24, 2007 p.19)

The ratio of total outstanding securities to GNP was 8.4% at the end of 1987 and increased steadily to 47.2% at the end of 2001. With the economic crisis, outstanding securities to GNP ratio decreased to 43%. After 2003, Turkish economy grew very

rapidly, but outstanding securities have not much grown, the ratio went down during 2004-2006. In 2007, outstanding securities again started to increase.

Table 2: Development of Main Indicators of ISE

Table 2 shows development of trading volume, total market capitalization, the most known index of ISE and the number of traded company in ISE. In calculation of ISE X100 index the value of index in January 1986 is taken as a base.

Years	ISE Trading Volume (Million US \$)	Market Capitalization (Million US \$)	ISE X100 Index	Number Of Traded Company in ISE
1986	13	938	1.71	80
1990	5,854	18,737	32.56	110
1995	52,357	20,782	400.25	258
1999	84,034	114,271	15,209	285
2000	181,934	69,507	9,437	315
2001	80,400	47,689	13,783	310
2002	70,756	34,402	10,370	288
2003	100,165	69,003	18,625	285
2005	201,763	162,814	39,778	304
2007	300,842	289,986	55,538	319

Source: CMB (2007, p.28-30)

ISE stocks trading volume increased from 13 million US Dollar at the end of 1986 to 181,934 million US Dollar at the end of 2000. It fell down with the economic crises, and reached up 300,842 million US Dollar at the end of 2007 and ISE ranked as 25th in terms of trading volume according to The Association of Capital Market Intermediary Institutions of Turkey (TSPAKB) (2007). The market capitalization was around 290 billion US Dollar as of end of 2007 and ISE was ranked as 26th among 51 exchanges in terms of market capitalization (TSPAKB, 2007). The number of traded company has increased from 80 to 319 within the 20 years and ISE was ranked as 32nd in terms of traded company (TSPAKB, 2007). There is no foreign company trading in ISE. The number of traded companies was also affected by the economic crisis in 2001. The return on market has been very high, the most well known index of ISE increased from 10,370 in 2002 to 55,538 in 2007. The index increased just above 4 times from 2000 to 2007. The market return for ISE is the second highest in the world after Brazilian in 2007 (TSPAKB, 2007).

With the developments in Turkish capital markets, intermediary services have become an inseparable part of the financial system. In Turkish financial system, there are mainly two types of intermediaries: banks and brokerage houses. The banks are not allowed to sell or buy shares on the stock exchange. The brokerage houses can perform intermediation for the issuance or public offering of capital market instruments, purchase and sale of capital market instruments issued previously (secondary trading), the purchase and sale of derivative instruments as a whole or partially on the basis of categories including the futures and options contracts based on economic and financial indicators, capital market instruments, commodities, precious metals and foreign currencies. Furthermore, the brokerage houses may also undertake repurchase and reverse repurchase of capital market instruments, investment consultancy, and portfolio management activities.

All brokerage houses are the members of ISE. In 2007, there were 40 banks and 99 brokerage houses that were participating in capital market. The number of financial intermediaries has not changed radically, as there is an entry barrier to the market. The market structure among participants of capital markets is collusive rather than competitive. It has been found that market concentration was one of the main determinants of profitability in brokerage houses during the period of 2000-2003 rather than efficiency (Kadioglu, 2006).

The dividend policy of listed companies is regulated by Capital Market Law and Commercial Code. The decision of dividend pay out is determined at annual general meeting (AGM) which usually takes places between March and May of each year. However, the final decision of dividend pay out is taken in AGM, proposed by board of directors and is usually accepted by shareholders later on. Practically, the board decision

is approved in AGM and it is very rare that dividend the proposal of board of director is rejected in AGM. The board of director usually meets to decide on the proposal of dividends between February and April of the year. Whenever board of director decides on a proposal of dividend, it is immediately disclosed to the public.

CMB forces the traded companies to pay out the dividend not less than 20% of their after tax profit. On the other hand, companies have an option to pay the dividend as a cash or stock split by means of stock dividends. CMB changed minimum pay out ratio 50% in 2001 and 30 % in 2006. The taxation on capital gain is less than the dividend yield. Starting from the beginning of 1999, the shareholders were subject to income taxation on the dividend yield over a specific amount which is determined by Ministry of Finance every year. Capital gains are also exempted from taxes up to certain amount and time. If capital gain has been accumulated for more than 3 months period then there is no tax applicable. Turkish tax system encourages investors to hold shares for longer period.

The ISE has been operating since 1986 and becoming very important emerging exchange. It has two main markets; stock market and bond market. In stock market, private sector shares, exchange traded funds, securities investment trusts, real estate investment trusts and venture investment trusts are traded. In bond market, public sector bond and bills are traded. Since the market is new, it is seen as a non efficient market. The ISE has fully computerized trading system in which a multi-price continuous auction system works and there is no opening or closing sessions. There are two trading sessions on each day through the working days of the week. The first session is in the morning session which starts at 9:30 and ends at 12:00, the second session is in the afternoon which starts at 14:00 and ends at 16:30. The clearing takes place on 2 days

after the trade. The price movements are bounded by 10% upside and downside in each trading session and the price is being rounded nearest price tick. Therefore, the maximum and minimum price movement is around 20-25%. A short selling in the ISE is allowed under certain rules and regulations, and must be specified as a “short sell order”.

The ratio of equities owned by foreign customers to total equities was 40.9% in 2000. This ratio increased to 49.2% in 2001, decreased to 43% in 2002 due to economic crisis, increased to 51.5% in 2003, to 54.7% in 2004 after recovery period. The ratio of free float rate owned by foreign customers to total equities in custody is 70.2% by the end of 2007 (CMB, 2007).

3. LITERATURE REVIEW

Many studies in the finance literature have tried to explain the positive (negative) relation between a dividend increase (decrease) and excess returns on share. Mainly three theories are developed on this issue and many empirical researches are done to test these theories. The information-signalling, the free cash flow and the dividend clientele effect theories are the most popular and well known ones in the literature. Since the focus of this study is only on cash dividends, the theories and empirical researches about information content and announcement effect of stock splits and stock repurchases are not dealt with in this study.

3.1. Information-Signalling Hypothesis

The phenomenon of information content of dividends starts with Lintner (1956). According to him, managers believe that the dividend changes are highly related with permanent earnings changes rather than temporary earnings changes and managers have more information about company's future earnings capacity and future cash flows. The primary factor that managers take into account to determine their dividend policy is the firm's future earnings. Moreover, he argues that managers try to keep the dividends as stable as possible, and they don't want to change the dividends radically. Therefore, they increase or decrease the dividend level gradually to get the target dividend.

Since the managers have more private information about their future earnings and cash flows of the firm, the announcement of the dividend is one way of the releasing private information to the shareholders through the market. The managers give information about an increase in firm's future cash flows by announcing an increase in the current dividend. In other words, the dividend changes convey important and

valuable information about permanent change in the firm's earnings in future; therefore it will be reflected in the share prices after the announcement of the information.

While Miller and Modigliani (1961) proposed that the dividend has no effect on value and capital structure of a firm under perfect capital market conditions and non existence of taxes. They pointed out that dividends may have information content if managers have private information about firm's future earnings and use it to set a current dividend policy. Although information content of dividends was not modelled well, many empirical studies tried to test it by looking at the announcement effect of the dividend changes on share price and overall they found supportive evidence.

The information content of a dividend was introduced by Lintner (1956) and Miller and Modigliani (1961) formalised by Bhattacharya (1979), John and Williams (1985) and Millier and Rock (1985) as a "Signalling Theory". The signalling theory argues that changes in dividends contain a signal about changes in future earnings of the firm. The management uses the dividend to give the signal about future earnings of the firm to the shareholders. Bhattacharya (1979) argues that the dividend is a signal of expected cash flows in case of imperfect market conditions and the dividend is a very costly mechanism try to remove information asymmetries between management and shareholders about the firm's future earnings. The announcement of the dividends increases signals to shareholders that future cash flows or future earnings will be high enough to meet the dividends increases.

The studies about the information-signalling theory are tested by two ways. Firstly, some studies examined the relation between dividends and future earnings of the firm. Secondly, other studies tested whether the announcement of dividends result in abnormal return on share. DeAngelo and DeAngelo (1990) found supportive empirical

evidence on information-signalling theory such that the dividend reduction heavily is related with earning problems. The studies of Fama et al (1969), Pettit (1972), Woolridge (1983), Ofer and Siegel (1987), Venkatesh (1989), Lang and Litzenberger (1989) and Jensen and Johnson (1995) document that the dividend changes convey some information to the market about firm's future earnings or profitability. On the other hand, Healy and Palepu (1988) and DeAngelo et al (1992) found a negative relationship.

Watts (1973), one of the earliest empirical studies on information content of dividends, tried to find out a relation between the unexpected dividend changes and future earnings by forecasting future earnings using current dividends rather than earnings. His study found a small relationship between unexpected dividends changes and future earnings. Genodes (1978) and Penman (1984) also reached similar conclusion with Watts (1973). Furthermore, recent studies such as, DeAngelo et al (1996), Grullon et al (2002, 2005) found little or no support that the dividends have information content about future earnings. Bernartzi et al (1997) also carried out a comprehensive study and documents that the dividend policy is highly related with past earning rather than future earnings.

Besides the studies examining the relationship between earnings and dividend changes, the announcement effect of dividends changes is examined by testing whether the dividend has information content. Ang (1975), Genodes (1978) documented that an unexpected change in dividends cause little announcement effect. Watts (1973) did not encounter a significant abnormal return after the announcement of dividends and stated that there are some limitations on his study. He used monthly data rather than daily data and the power of the test is reduced due to potential noise in the dividends expectation

model. On the other hand, a comprehensive empirical study of Bernartzi et al (1997) documents that the announcement of dividends increases result in positive abnormal returns whereas the announcement of dividends decreases result in negative abnormal returns.

Jensen and Johnson (1995:33) explained the announcement effect as follows.

“In particular, dividends are generally smoothed and lag earnings because managers understand the negative signal sent by a dividend reduction and, hence, are reluctant to increase their dividend because it increases the possibility that the dividend will need to be reduced in the future. Unexpected changes in dividends produce significant announcement effects because investors understand the reluctance of managers to change the dividend and, thus, interpret a change in dividends as an information event.”

It is argued that the main problem in examining the announcement effect of dividends is difficult in separating the effect of dividends announcement from announcement of earnings, since the announcement of earnings and dividends are made in very closely or together. Aharony and Swary (1980) tested the dividends announcement effect with appropriate data and separated the dividend announcements from earning announcements. In their study, daily stock returns are used and they controlled the other possible variable's effects. In other words, they removed the limitations of Watts (1973) and they found that the dividend has a significant price effect since dividend has information content individually.

The studies of Pettit (1972, 1976), Laub (1976), Charest (1978), Woolridge (1982), Asquith and Mullins (1983), Kalay and Lowenstein (1985), Akhigbe and Madura (1996) and Travlos et al (2001) found a significant announcement effect of

dividend change on share price. The announcements of dividend increases have a positive excess return around the announcement day.

The announcement effect of the dividend on price is mainly examined around the announcement day. It is argued that the immediate effect of the dividend announcement does not examine the long term performance and most of studies do not mention about long term price effect of a dividend change. Akhigbe and Madura (1996) tested the long term effect of a dividend change. They found that the dividend initiation has a positive effect on price in long term and the dividend omission has a negative effect on price in long term. They also document that a short term effect of the dividend initiation is also an indicator of long term effect; on the other hand, there is no such relation in the dividend omission.

3.2. Free Cash Flow Hypothesis

The second explanation of a positive relationship between the dividend change and abnormal returns is the free cash flow hypothesis, comes forward from agency theory of firm (Jensen and Meckling, 1976). According to Jensen and Meckling (1976), the agency problem basically represents the separation of ownership and control of firm. It arises because of the conflict of interest between managers and shareholders, and agency relationship is characterised by information asymmetry and uncertainty. The free cash flow hypothesis introduced by Jensen (1986) states that the managers prefer more free cash under their discretion and don't want to be under threat of bankruptcy, therefore they are reluctant to pay out the dividend. Having more free cash under the control of management causes overinvestment problem, in which managers invest in projects which have negative net present value. Furthermore, more free cash flow may allow managers to do excessive perk consumption for their self interest. Therefore, the

dividends are one of the ways to decrease free cash flow under the management control while dividends help to reduce the agency cost.

According to Jensen (1986) the dividends are used as a monitoring and disciplining mechanism over the management rather than direct intervention of shareholder to management affairs. Therefore, increase in the dividends has positive information in which the agency cost will be reduced and investing projects with negative net present value will be less likely in the future. If the managers announce increase in dividends, the free cash flows under the management control will be less in future. Thus the announcement of dividend increase implicitly states that the performance of the company will be better in the future. As a result, the dividends have information content in which the behaviour of managements will be more aligned with the interest of shareholders and the managers are more likely to invest in projects which have positive net present value.

Rozeff (1982) and Easterbrook (1984) support the free cash flow hypothesis. According to Rozeff (1982) and Easterbrook (1984), the agency cost of firm can be reduced by a dividend increase. High dividend paying firms more often requires an external funding via market. Thus, these firms are more subject to monitoring of the market. However, it is argued that the free cash flow hypothesis is similar to the signalling hypothesis that dividend changes convey information to the market; the free cash flow hypothesis states that information is related with changes in the management behaviour rather than the future earnings changes.

The free cash flow hypothesis has found mixed supports from empirical studies. The studies of DeAngelo and DeAngelo (2000) and La Porta et al (2000) found supportive evidence. Dennis et al (1994) could not document supportive evidence.

Some recent studies use Tobin Q ratio which measures the overinvestment to distinguish the free cash flow hypothesis from the signalling hypothesis. Lang and Litzenberger (1989) use the Tobin Q methods to test these hypothesis and they document that their study supports the free cash flow hypothesis more than the signalling hypothesis.

3.3. Clientele Effect Hypothesis

The last possible explanation for a relationship between the dividend changes and abnormal returns are related to the clientele effect. The dividend clientele effect hypothesis argues that some investors prefer earnings to be paid out as a dividend and other prefer earnings to be retained in the firm. Whilst, some firms try to meet the interest of dividend preferred shareholders and other firms try to meet the interest of retained earning preferred shareholder. This preference differences can mainly emerge from different taxation of capital gain and dividend yield.

In many countries the capital gain is taxed less than the dividend yield. It was the situation in US until 1986 and in UK until 1997, but it is no longer valid. In case of equal treatment of taxation, investors will be indifferent in the dividend yield and capital gain. Even the lower taxation of the capital gain, Black and Scholes (1974) and Miller and Scholes (1982) argue that there should not be a relation between a return and the dividend. Black (1976) states that this is as a puzzle, while dividend has no effect on firm value, firms still pay dividends.

The investors, who are in a position of tax advantage of capital gain, will prefer earnings of firm to be retained rather than paid out. In that case, announcement of the dividends will be seen as negative information for these investors, because these investors will pay more tax in future, their response will be short position in that share

to avoid tax and they will prefer non dividends paying shares. This tax preference is formulised as the Tax Clientele Effect hypothesis by Miller and Modigliani (1961) and Black and Schloles (1974). According to the hypothesis some firms attract investors because the firm's dividend policy suits these investors' preferences.

On the other hand, some investors prefer the dividend yield to the capital gain due to their own interest such as personnel tax exemption or any other reason, and some firms try to meet the interest of these clienteles. Especially pension funds need stable income to pay pensions since the pension funds are mature and it is not easy to sell shares in each time. The studies of Eckbo and Verma (1995) and Short et al (2002) found a significant and positive relationship between the dividend paid out and institutional investors. Therefore, decrease in dividends may be seen as an unwanted event by the institutional shareholders, whereas a dividend increase may be seen as a wanted event by the shareholder.

Some studies tested the effect of dividend on value of the firm based on after tax dividends valuation model of Brennan (1970). Black and Scholes (1974) found no evidence of the dividend has an affect on the value of a firm, whereas Litzenberber and Ramaswamy (1982) found that dividend has an effect on the value of a firm. Other studies examined the dividend clientele effect on price. Bajaj and Vijn (1990) argue that it is difficult to distinguish signalling and clientele hypotheses. According to them, the expected dividend yield has a significant effect on stock return. If firm pays high dividends previously, and an increase in dividends cause more significant positive effect on stock price than those of low dividends. Dennis et al (1994) also tested the dividend clientele and free cash flow hypotheses and found that the dividend changes have a significant effect on the price.

3.4. Studies Related to ISE and Insider Trading

3.4.1. Previous Studies on Turkish Capital Market

In addition to the studies mentioned above, there are very limited studies on Turkish capital markets and no one directly examined the announcement effect of the cash dividends. Aydogan and Muradoglu (1998) and Muradoglu and Aydogan (2003) examined the announcement effect of the stock dividends and right offerings, Batchelor and Orakcioglu (2003) examined the impact of stock dividend. On the other hand, Yilmaz and Gulay (2006) tested the effect of cash dividends on share price around ex-dividend day.

Aydogan and Muradoglu (1998) studied the market microstructure just after the exchange, ISE, became operational in 1986. Their study includes the period of 1988-1993 and their focus is on the announcement and the implementation effect of stock dividends and right offerings on price. In their time, there was no regulation for disclosure for a dividend policy of the firms. Therefore, they collected their announcement dates by mail. Their data sample contains 109 events during 1988-1993, and they applied the event study analysis and they used both day of board meeting on which the dividend payout is decided by the board of directors and day of implementation of dividend as an event day.

They divided their period into two sub periods: 1988-1991 and 1991-1993. They document that the average cumulative abnormal return (ACAR) is significant on day $t=1$ and continued to increase up to 18th day in 1988-1991 periods ($t=0$: board meeting day). However, in second period they could not find significant ACAR. They repeated their test by taking $t=0$ as implementation day, but they could not document any significant ACAR for both periods. They interpreted that there is a lack of efficiency in

the first period and over time the inefficiency decreased. They also argue that non parametric rank and sign tests are not superior to the event study methodology for their study.

Muradoglu and Aydogan (2003) took larger sample of 513 events in 1988-1994 and examined the implementation effect of stock dividends and right offerings on share price. Muradoglu and Aydogan (2003) used similar approach with Aydogan and Muradoglu (1998), but this time they divided their period into three sub groups: 1988-1989, 1990-1992 and 1993-1994. They found a significant ACAR in the second period and stronger version in the third period. In 1990-1992 period ACAR is significant between day zero and day two and in 1993-1994 period ACAR is significant between day -4 and day 30.

Batchelor and Orakcioglu (2003) examined the impact of the stock dividends on share price by using the data of 1990-1994. In their study, they took the payment day as an event day and used proxy day for the announcement day by going 4-6 weeks backward. They applied a novel GARCH process with event-related intercept term. Their study document that there is no significant price reaction around the announcement day or payment day of stock dividends and right issues.

Their findings are consistent with Aydogan and Muradoglu (1998). They could not document the announcement effect of cash dividends. On the contrary, it is found that cash dividends payment result in significant abnormal return around ex-dividend day. Besides, the study of Yilmaz and Gulay (2006) looked into the announcement effect of cash dividends around the ex-dividend day with the event study analysis. They used the data of 1995-2003 periods with 602 events. They found that a price reaction to the dividend payment starts from a few trading session before in a positive way, then a

price drops less than the dividend payment, and then it goes down following trading sessions. Their findings are consistent with the findings of the Batchelor and Orakcioglu (2003).

3.4.2. Insider Trading and Dividends

In addition to the studies for examining information content of dividends, there are also some studies which are investigating the insider trading activities around the dividends announcements. In those studies examining insider trading activities, it is assumed that the dividends have information content and therefore it is price sensitive. Since the dividends have private information about the firms future earnings or management behaviour, the announcement of dividends is very critical for the position of insider dealers. It is generally assumed that the dividend increases affect share price positively, whereas the dividend decreases affect share price negatively.

On the other hand, if the insider dealer knows the private information, the firm will decrease the dividends before the information becomes publicly available, he sells shares that are already owned or short sells shares before the announcement and buys immediate after the announcement (in case of short sell) and he avoids from loss or get riskless profit. The main aim of the insider trading prohibition is to provide price sensitive information to everyone at the same time and to ensure that everyone has same information.

Many studies are carried out such as Sivakumar and Vijayakumar (2001), Sivakumar and Waymire (1994), John and Lang (1991), Park et al (1995), Allen and Ramanan (1995), Udpa (1996) and Cheng et al (2005) to test whether there is insider trading activities around the dividend announcements and most of them document that the dividend is private and price sensitive information and used for insider trading.

4. HYPOTHESES

This study tests mainly whether the announcement of cash dividends has an effect on cumulative abnormal around the announcement date. In order to test the announcement effect of cash dividends, different event windows are used in both the classical event study analysis and regression analysis. Therefore, the main hypothesis is designed as follows.

H₀ : there is no significant abnormal cumulative return around the announcement of cash dividends (1)

The adjustment duration of a dividend announcement gives an idea about the market efficiency¹. It is generally accepted that the information is reflected in the price immediately after announcement in an efficient market. However, in emerging markets or in thin markets, the price adjustment takes time. The next hypothesis is designed for this purpose.

H₀ : there is no significant abnormal cumulative return just around the announcement of cash dividends (2)

In many legal systems, the dividends are seen as a private, price sensitive and an inside information. Therefore, the disclosure regulations require it to be published and prohibit the trading with that information before it become publicly available. For this reason, it is expected that the price effect should be after the announcement day. Otherwise, it can be argued that, there is an information leakage in the market due to the inefficient supervision and ineffective regulations. To test the existence information leakage, the following hypothesis is used.

H₀ : there is no significant abnormal cumulative return prior to the announcement of cash dividends (3)

¹ See Aydogan and Muradoglu (1998)

As it is mentioned before, the main problem of the event study is the separation of the cash dividends announcement from earnings the announcement. In some studies it is managed to separate other announcement from the dividend announcement². In our study, we have also such appropriate data. The following hypothesis is used to test the separation of announcement.

H₀ : separated and joint announcement of cash dividends does not result in a cumulative abnormal return differently (4)

Some studies examined the announcement effect of the dividend increase or dividend decrease. It is argued that the dividend increase or decrease conveys information about future earnings or future cash flows of the firm. The test whether dividend increase or decrease have information content, the following hypotheses are used.

H₀ : the announcement of cash dividends increase does not result in a significant cumulative abnormal return on share (5)

H₀ : the announcement of cash dividends decrease does not result in a significant abnormal return on share (6)

It is documented that there is a relation between institutional investors and a dividend pay out. Especially, pensions require stable income to meet the pension payments. It can be said that also institutional investors try to be shareholder of the biggest and most trading companies, since liquidity of the share is a very important issue for funds. Therefore, the following hypothesis is used to the test this relation by using proxy variable.

H₀ : the announcement effect of cash dividends of the most trading companies does not differ than others (7)

² See Aharony and Swary (1980)

5. DATA

The data of this study is collected from ISE. According to Turkish capital market regulations all listed companies have to disclose their material events as soon as possible via the electronic disclosure system of ISE. The dividend pay out decision of board of director is counted as the material event and it must be disclosed. It is generally announced on same day or on the next day. These material events are kept electronically under the name of each company as a document. So, there is one material event document for each company including all material events. Although the material events and price data are publicly available, each announcement date has to be collected manually. The ISE publishes the closing price of each company and market index XUTUM which contains all companies' weighted price data. The daily returns are calculated as a percentage increase in the closing price of successive days.

The sample which consists of 88 companies is selected from population of 310 companies according to the following criteria. First, the Turkish economy passed through very severe economic crisis at the end of 2000 and beginning of 2001, therefore the time period taken after the crisis period 2003-2007. Second, the company should have at least 3 dividend pay outs within the 5 years. Third, the company should not pay interim dividend within a year. In other words, each company should pay dividend once a year.

5.1. Description of Event Study Data

According to the criteria mentioned above, there are 330 events; 62 events in 2003, 44 events in 2004, 79 events in 2005, 78 events in 2006 and 67 events in 2007. On average, each firm has roughly 4 times (exactly 3.75) announced cash dividends in five years. The daily abnormal returns are defined as the difference between the return

of individual share and the return on market index extending event windows from t-5 to t+15. The descriptive statistics of daily abnormal returns are given in the following table.

Table 3: Descriptive Statistics of Event Window Abnormal Returns

Table 3 represents the summary statistics of the daily abnormal returns which are calculated by using market adjusted model. The table gives mean, standard error, median, mode, standard deviation, minimum and maximum value abnormal returns within the event windows from t-5 to t+15. The last row shows the average value of each statistics for 21 days. The values are represented in percentage.

Day	Mean %	St. Error %	Median %	Mode %	St. Dev. %	Minimum %	Maximum %
-5	0.34	0.14	-0.04	-0.60	2.48	-6.67	14.83
-4	-0.09	0.12	-0.19	-0.73	2.22	-14.00	7.40
-3	0.21	0.13	0.03	-0.25	2.28	-7.23	15.03
-2	0.25	0.13	-0.13	-0.25	2.33	-5.52	15.71
-1	-0.15	0.13	-0.28	-1.07	2.44	-9.96	10.42
0	-0.02	0.15	-0.23	-0.52	2.71	-10.43	13.94
1	0.05	0.16	-0.16	-2.21	2.86	-16.69	14.49
2	-0.07	0.13	-0.21	-1.07	2.43	-9.47	10.77
3	-0.10	0.11	-0.20	-1.07	2.05	-6.95	9.69
4	0.31	0.14	-0.02	1.44	2.54	-4.65	13.42
5	0.10	0.12	-0.01	-1.43	2.21	-6.48	11.22
6	-0.08	0.14	-0.19	0.18	2.47	-7.60	17.66
7	0.09	0.12	-0.04	0.55	2.17	-5.07	11.67
8	0.25	0.14	-0.11	0.55	2.56	-6.47	15.97
9	0.17	0.15	-0.24	-0.17	2.80	-11.26	18.16
10	-0.01	0.12	-0.17	-1.72	2.24	-9.51	11.65
11	0.29	0.14	-0.04	2.66	2.53	-6.64	18.14
12	-0.05	0.13	-0.26	-0.86	2.30	-8.54	10.16
13	0.05	0.12	-0.03	-1.72	2.19	-8.88	8.07
14	-0.13	0.12	-0.27	-0.69	2.25	-14.23	7.68
15	0.00	0.14	-0.11	1.46	2.54	-22.03	11.35

The highest average abnormal return is on day t-5 which is 0.34%, whereas the lowest average abnormal return is on day t-1 which is -0.15%. The standard deviation of the daily abnormal return does not change much and lies between 2.86% and 2.05%. As it is expected, the distribution is positively skewed.

5.2 Description of Regression Analysis Data

In addition to the event study data, the data includes the dividend per share in terms of New Turkish Lira (YTL) or roughly 0.80 US Dollar as of today. The descriptive statistics of the dividend per share is given with the following table.

Table 4: Descriptive Statistics of Dividend per Share

Table 4 gives the summary statistics of the dividend per share from 2003 to 2007. The summary statistics are shown both for individual year and whole period. In the table, mean, standard error, median, mode, standard deviation, minimum and maximum value of the dividend YTL per share are shown.

	2003	2004	2005	2006	2007	2003-2007
Mean	1.27	0.80	0.93	0.75	0.94	0.93
St. Error	0.48	0.46	0.34	0.18	0.39	0.16
Median	0.32	0.20	0.23	0.28	0.26	0.25
Mode	0.20	0.13	0.63	0.29	0.13	0.20
St. Deviation	3.75	3.05	2.99	1.57	3.16	2.92
Minimum	0.05	0.0007 ³	0.02	0.01	0.01	0.0007
Maximum	25.80	20.41	23.54	9.54	25.67	25.80

As also seen from the table, the summary statistics of the dividend per share does not radically change from year to year. On average, companies paid out 0.93 YTL dividends per share. The minimum dividend is 0.0007 YTL and maximum dividend is 25.80 YTL per share. The variability in the dividend per share which is 2.92 YTL on average is quite high.

The data includes some dummy variables to identify the effect of specific qualitative variables. As it is mentioned in the methodology section, the main problem of event studies is the separation of the announcements. In the cash dividends announcement case, there can be some other effects such as announcement of earnings and/or stock dividends on the announcement day of cash dividends. For this purpose, a dummy variable is created to test the individual effect of cash dividends. In the sample, in the 189 events cash dividends are announced alone and in the 141 events cash dividends and earnings and/or stock dividends are announced together.

The other two dummy variables are created to measure the effect of the dividend increase and dividend decrease by comparing successive dividend pay outs. In the sample, 158 cash dividends are greater than the previous cash dividends. On the other

³ In 2006 New Turkish Lira is introduced and six zero are dropped from old Turkish Lira, therefore this amount may not be meaningful.

hand, 134 of the cash dividends announcement represent a decrease to the previous cash dividends. These dummy variables are created, since many literature document that the dividend increase and decrease have information content or announcement effect on the share price.

The last dummy variable is added to the data set to measure the effect of the size and trading. ISE announces XU30 index to specify the top 30 companies in terms of trading and at the same time they generally are the biggest companies. In our sample, 54 dividend announcements are made by XU30 companies. The most trading and the biggest firms are generally in the scope institutional investor. Some studies document that there is a positive relationship between institutional investors and the dividend pay out⁴. Therefore, the dummy variable of being XU30 companies can be used for testing this issue by proxing institutional investor.

The data cleaning is not applied to our data set. First of all, the price data is very well structured and there is an upper and lower limit in the price movement. The return of a share bounded 10% from up and down in each trading session, but some times it is possible to see the daily return more than 22%, because prices are rounded to the nearest price tick. The distribution of the return of share is slightly positively skewed as it is expected. The variables of the dividend per shares are created according to some criteria, thus some of strange values eliminated at the beginning.

⁴ See Eckbo and Verma (1995) and Short et al (2002).

6. METHODOLOGY

In this study two methodologies are applied to examine the announcement effect of cash dividends in ISE.

6.1. Event Study

This study used traditional event study methodology⁵ which is commonly used to test the announcement effect of a dividend (see Pettit, 1972; Masulis, 1980; Brown and Warner, 1980; Aharony and Swary, 1980; Woolridge, 1982; Asquith and Mullins, 1983; Venkatesh, 1989; Akhigbe and Madura, 1996), announcement effect of earning (See Dennis and McConnell, 1986) and insider trading studies (see Sivakumar and Waymire, 1994, Gregory et al, 1997 and Hillier and Marshall, 2002).

The first step in the event study is to find daily return of the share and market index. The original data is in the form of closing price of shares and closing value of market index. In order to find the daily return of the i^{th} stock at day t , the following formula is used. It is the percentage increase in closing price of successive days.

$$R_{it} = (P_{it} - P_{it-1}) / P_{it-1} \quad (1)$$

Where R_{it} is the daily return of stock i at day t , P_{it} is the closing price of stock i at day t and P_{it-1} is the closing price of stock i at day $t-1$. The daily return of market index is calculated with same way as the percentage change in value of ISE XUTUM (contains all shares) index in two successive days.

The next step is the finding the daily abnormal or excess return of individual stock for each day.

⁵ see Armitage (1995)

$$AR_{it} = R_{it} - M_t \quad (2)$$

AR_{it} represents the daily abnormal return of the stock i at day t and M_t represents the market index return on day t . In this event study analysis, the market adjusted return model is used to estimate the abnormal return. However, some studies used the market risk adjusted model. In market adjusted model, the beta coefficient of each share (which measure risk level of each share with respect market) is assumed to be 1 and intercept term is assumed to be zero. On the other hand, in the market risk adjusted model, beta coefficient is calculated by regression in which the daily market index returns regress on the daily share returns in a neutral period. Using the market risk adjusted model is not superior to the market adjusted model (see, Armitage, 1995 and Brown and Warner, 1980). Marsh (1979) argues that due to the data limitation the risk adjusted model reduces statistical efficiency. Furthermore, in case of small markets, the market adjusted model provides results as good as the risk adjusted model. The study of Liljeblom (1989), Martikainen et al (1993), Aydogan and Muradoglu (1998) and Travlos et al (2001) which are carried out in Sweden, Finland, Turkey and Cyprus respectively can be given as an example for this purpose. Even studies in deep and developed markets document that the market adjusted model is not worse than the market risk adjusted model⁶.

The third step is about finding the daily average abnormal return and cumulative abnormal returns for the event window.

$$AR_t = \sum_{i=1}^N \frac{AR_{it}}{N} \quad (3)$$

⁶ See Charest, 1978; Woolridge, 1982; Asquith and Mullins, 1983; Asquith et al, 1989

$$CAR_T = \sum_{t=1}^T AR_t \quad (4)$$

Where, AR_t is the average abnormal return of N events on day t and CAR_T is the cumulative abnormal return over the event window extending from $t=1$ to $t=T$. T is also the number of days in the event windows which lies between event window starts ($t=1$) and event window ends ($t=T$).

The last step is the calculation of t statistics for cumulative abnormal returns which is given as follow.

$$t = \frac{CAR_K}{\sigma_T * \sqrt{T}} \quad (5)$$

$$\sigma_T = \sqrt{\sum_{t=1}^T \left(AR_t - \frac{CAR_T}{T} \right)^2 / T} \quad (6)$$

σ_T represents the standard deviation of AR given period of an event window.

In this study $t=0$ represents the announcement day of cash dividends. Since, rumours about the dividend starts before the announcement day. It is possible to see the price movement prior to the announcement day. Therefore, the starting point of the event windows is taken $t-5^{\text{th}}$ day. It is important to open the event window prior to the event date, since it provides an idea about information leakage prior to the announcement and thus effectiveness of regulation and supervision.

It is generally expected that the price adjustment takes place on day 0 in an efficient market. In thin and inefficient market, the price adjusts more slowly than in deep and efficient markets. So the ending point of events is taken $t+15^{\text{th}}$ day. Within $t-5$ to $t+15$ alternative event windows are used for finding the price effect. It is also

important for the end of event window a few days after the event day. Because, it provides information about market efficiency and the duration of price adjustment. The duration of the price adjustment is a very crucial point to the insider dealing surveillance and investigation. Without knowing the starting and ending point of the price movement, it can not be found who took relevant position according to the inside information.

In the testing information content of dividend or announcement effect of dividend, many studies examined the relationship between the dividend increase or dividend decreases and returns. Therefore, the event study test is repeated by sub grouping sample. These sub groups consist of the dividend increase and dividend decrease.

6.1. Regression Analysis

The data also includes the value of the dividend per share. The amount of dividend which is announced to pay out is specified as a fraction of per share (1 YTL= 0.80 US \$). The regression analysis is used to test further analysis of the relationship between the dividend per share and cumulative abnormal return. The after tax dividend per share is used for regression. The cumulative abnormal returns which are calculated in event study methodology are used.

The dividend per share is regressed on cumulative abnormal returns along the event windows. In order to test whether the investors of most trading and the biggest companies react the dividend announcement different than other companies, the dummy variable of being X30 index is included. ISE X30 includes the most trading and these companies generally are the biggest companies. The regression model is formulated as follows.

$$CAR_i = \alpha + \beta_1 DPS_i + \beta_2 JA_i + \beta_3 X30_i + e_i \quad (7)$$

$X30_i = 1$: if i^{th} share belongs to X30 index

$= 0$: if i^{th} share does not belong to X30 index

$JA_i = 1$: if the cash dividends announcement took place together with the other announcement such as earning and stock dividend

$= 0$: if the cash dividends announcement took place alone

Where, CAR_i is the cumulative abnormal return of share I and DPS_i is after tax dividend per share in YTL.

In order to test the robustness of the equation (7), some additional dummy variables such as year, industry cash dividends increase or decrease are included to the model. The modified model is as follows;

$$CAR_i = \alpha + \beta_1 DPS_i + \beta_2 JA_i + \beta_3 X30_i + \beta_4 INC_i + \beta_5 DEC_i + \beta_{k6} Y_{ki} + e_i \quad (8)$$

Where $k=1$ to 7 and they represent year and industry dummies for 2003, 2004, 2005 and 2006 for year and manufacturing, services and finance industries respectively.

$INC_i = 1$: if the current cash dividend is greater than the previous cash dividend

$= 0$: if the current cash dividend is not greater than the previous cash dividend

$DEC_i = 1$: if the current cash dividend is less than the previous cash dividend

$= 0$: if the current cash dividend is not less than the previous cash dividend

The distribution of e_i is assumed to be normal that has 0 mean and σ standard deviation. It is assumed that there is no correlation between successive error terms.

In order to carry out both the event study analysis and regression analysis, the cumulative abnormal return is calculated for the following event windows. The possible reason and implication of the event windows is summarized on the following table.

Table 5: Reason for Opening and Implications of Event Windows

The table 5 shows the event windows that are opened in this study. There are 7 event windows which are specified in first column, the beginning and ending day of the event windows are seen on second column and third column respectively. This Table also shows the reasons for opening the event windows and possible implication of event windows.

Event windows No	Beg.	End	Reason for Opening window	Implications
1	-5	-1	to test information	efficiency in regulation and effectiveness of
2	-2	-1	leakage	supervision
3	0	1		
4	0	2	to test announcement	information content of dividend and duration of price
5	0	4	effect of dividend and	adjustment
6	0	10	market efficiency	
7	0	15		

7. RESULTS

The results of the study are given according to hypotheses that are given in the previous section. The main objective of the study is to examine whether the announcement of cash dividends have a significant effect on the share price. In order to examine this issue, both the event study and regression analyses are used.

7.1. Results of Announcement of Cash Dividends

The cumulative abnormal returns are tested for both as a whole sample and two sub samples in terms of cash dividends increase or decrease. The following tables summarize the results of the event study.

Table 6: Dividend Decreases

Table 6 shows the result of the event study in which three analyses are carried out. First, all events are taken into account as a pooled sample, then events are divided into two sub sample; dividend decreases and dividend increases. All three samples are tested in the different event windows. The first column shows the event windows. In table, CAR shows the Cumulative Abnormal Return along the event window. In t-statistics columns, * shows 1% significance level and ** shows 5% significance level.

Event Windows	All Dividends (330 Events)		Dividends Increases (158 Events)		Dividends Decreases (134 Events)	
	CAR	t-statistics	CAR	t-statistics	CAR	t-statistics
[-5,-1]	0.56%	1.14	0.95%	2.11	0.16%	0.30
[-2,-1]	0.09%	0.33	0.19%	1.60	0.10%	0.29
[0,+1]	0.03%	0.55	0.04%	0.39	0.16%	1.46
[0,+2]	-0.04%	-0.45	-0.15%	-0.73	0.28%	2.45**
[0,+4]	0.17%	0.51	-0.12%	-0.31	0.83%	2.88*
[0,+10]	0.68%	1.58	0.24%	0.39	1.47%	3.07*
[0,+15]	0.84%	1.56	-0.12%	-0.31	1.44%	2.33**

In the table, *CAR* represents the cumulative abnormal return within the event window, the abnormal returns are calculated by using the market adjusted (equation 1) and t-statistics are calculated (equations 5,6) using the event study methodology. As seen from the table, if all cash dividends are pooled, *CAR* is not significant in any event

windows. If the events are sub sampled as a dividend increase and decrease, then the results become different.

In case of a dividend increase, in which current dividend per share is greater than previous one, there is no significant cumulative abnormal return in any event windows. On the other hand, in case of a dividend decrease, in which current dividends per share is less than previous one, then the market react significantly in positive way. In the [0,+2] event window, announcement of dividend decrease results in significant 0.28 % cumulative abnormal return. This relation becomes stronger in the [0,+4] and [0,+10]. The cumulative abnormal return in the [0,+4] and [0,+10] event windows are significant at 1% which are 0.83% and 1.43% respectively. Finally, the significance of the announcement effect of a dividend decrease falls down to 5% in [+0,+15] the event windows. In general, the consistent result can be seen only announcement of the cash dividends decrease, which leads significant positive return.

According to the results, the hypothesis 1 and 2, which state that there is no significant abnormal cumulative return around or just around the announcement of cash dividends are rejected. The hypothesis 3, which states that there is no significant abnormal cumulative return prior to the announcement of cash dividends, is accepted. The hypothesis 5 is accepted and 6 rejected, in which whether dividend increase and dividend decrease result in significant abnormal return respectively.

The results of the event study consistently imply that, if firms announce the dividend, which is less than previous the dividend, then the market reacts in a positive way. In other words, the announcement of the dividend decrease results in a significant positive abnormal return. The possible explanation can be the tax clientele effect. Since capital gain is taxed less than the dividend yield, shareholders prefer earnings to be

retained in the firm, thus they are subject to less tax payable. Therefore, the price of share increases, when the dividend decreases is announced.

7.2. Determinant of Abnormal Return after the Announcement

The following table shows the results of regression in which dividend per share are regressed on cumulative abnormal return of each event windows. While running regressions, the equation (7) is used.

Table 7: Dividend Decreases in Event Study

Table 7 shows the results of seven different regressions corresponding to *CAR* in event windows. Independent variable, *DPS*, *JA* and *X30*, are regressed on depended variable, *CAR*, which is defined as the cumulative abnormal return along event windows. For example *CAR* in event window [-5,-1] is the cumulative abnormal return from days of t-5 to t-1 inclusively. For each regression R^2 and F-test are also shown in the last two columns of the table. *DPS* represents the dividend per share in YTL, *JA* represents the joint announcement of cash dividends with earning or stock dividend and *X30* represents whether cash dividends are made by top a trading company. Each cell shows the value of coefficient and t-statistics which is in parenthesis. In t-statistics, * shows 1% significance level and ** shows 5% significance level⁷.

	Dependent Variables (<i>CAR</i> in the event window)						
	<i>CAR1</i> [-5,-1]	<i>CAR2</i> [-2,-1]	<i>CAR3</i> [0,+1]	<i>CAR4</i> [0,+2]	<i>CAR5</i> [0,+4]	<i>CAR6</i> [0,+10]	<i>CAR7</i> [+0,+15]
<i>DPS</i>	-0.001 (-0.51)	0.000 (-0.52)	-0.005 (-6.64)*	-0.007 (-7.20)*	-0.007 (-5.95)*	-0.010 (-6.83)*	-0.011 (-6.08)*
<i>JA</i>	-0.016 (-2.81)*	-0.005 (-1.32)	0.005 (1.11)	0.005 (0.95)	0.001 (0.10)	0.002 (0.18)	-0.015 (-1.33)
<i>X30</i>	-0.01 (-1.41)	-0.011 (-2.23)**	-0.012 (-2.04)**	-0.011 (-1.47)	-0.009 (-1.05)	-0.014 (-1.21)	-0.027 (-1.83)
R^2 (%)	3.44	2.40	13.05	14.48	10.01	12.78	10.93
<i>F-Test</i>	3.87*	2.67**	16.30*	18.40*	12.08*	15.93*	13.34*

The results document that, there is a significant negative relationship between *DPS* and *CAR*. Firstly, *CAR* in all event windows are significant at 1% significant level except for [-5,-1] and [-2,-1] event windows. In [0,+1] the event window coefficient of *DPS* is -0.005 YTL. In [0,+2] event window coefficient of *DPS* is -0.007 YTL and it is significant at 1% level. The significant negative relationship continues at least 15 days

⁷ Durbin-Watson tests show that there is no autocorrelation problem.

after the announcement. In the event windows, the most significant announcement effect is seen in [0,+2] event windows.

There is no significant relationship between *DPS* and *CAR* prior to the announcement day. The overall significance levels of regressions in the event windows after the announcements are significant at 1% significance level. The *JA* is only significant in the [-5,-1] event window. The *X30* is significant in the [-2,-1] and [-0,1] event windows at 10% significance level.

The regression equation (7) is extended to equation (8) by including two other dummies which identify whether the current cash dividend is greater or less than the previous cash dividend and year dummies.

Table 8: The Effect of Dividend Increases and Decreases

Table 8 shows the result of seven regression in which each time *DPS*, *JA*, *X30*, *INC* and *DEC*, independent variables are regressed on dependent variable of cumulative abnormal return (*CAR*). In other words, regression is run for each event window. Each cell shows the value of coefficient and t-statistics which is in parenthesis. R^2 and F-test are also shown in the table corresponding to each regression. *CAR* represents the cumulative abnormal return in the event window. *DPS* represents dividend per share in YTL, *JA* represents the joint announcement of cash dividends with earning or stock dividend, *X30* represents whether the cash dividends are made by a top trading company. *INC* represents that the current cash dividend is greater than the previous cash dividend and *DEC* represents that the current cash dividend is less than the previous cash dividend.

	Dependent Variables (<i>CAR</i> in the event window)						
	<i>CAR1</i> [-5,-1]	<i>CAR2</i> [-2,-1]	<i>CAR3</i> [0,+1]	<i>CAR4</i> [0,+2]	<i>CAR5</i> [0,+4]	<i>CAR6</i> [0,+10]	<i>CAR7</i> [+0,+15]
<i>DPS</i>	-0.001 (-0.59)	0.000 (-0.54)	-0.005 (-6.64)*	-0.007 (-7.18)*	-0.006 (-5.92)*	-0.010 (-6.78)*	-0.011 (-6.07)*
<i>JA</i>	-0.015 (-2.75)*	-0.005 (-1.29)	0.005 (1.13)	0.005 (0.95)	0.000 (0.07)	0.001 (0.15)	-0.014 (-1.31)
<i>X30</i>	-0.011 (-1.43)	-0.010 (-2.16)**	-0.012 (-1.95)	-0.010 (-1.37)	-0.008 (-0.89)	-0.013 (-1.09)	-0.026 (-1.77)
<i>INC</i>	0.004 (0.48)	0.004 (0.72)	0.007 (0.92)	0.007 (0.83)	0.010 (0.98)	0.007 (0.54)	0.009 (0.50)
<i>DEC</i>	-0.003 (-0.35)	0.003 (0.55)	0.005 (0.76)	0.009 (0.98)	0.017 (1.63)	0.016 (1.12)	0.007 (0.39)
R^2 (%)	3.94	2.55	13.27	14.74	10.81	13.20	11.00
<i>F-Test</i>	2.66**	1.70	9.92*	11.20*	7.85*	9.86*	8.01*

Table 9: The Effect of Years

Table 9 shows the regression results of extended model with year dummies. The Y1, Y2, Y3 and Y4 represent year dummies which are 2003, 2004, 2005 and 2006 respectively. The rest of the variables and explanations are given in table 8.

	Dependent Variables (CAR in the event window)						
	<i>[-5,-1]</i>	<i>[-2,-1]</i>	<i>[0,+1]</i>	<i>[0,+2]</i>	<i>[0,+4]</i>	<i>[0,+10]</i>	<i>[+0,+15]</i>
DPS	-0.001 (-0.73)	0.000 (-0.64)	-0.005 (-6.62)*	-0.007 (-7.20)*	-0.006 (-5.96)*	-0.010 (-6.88)*	-0.011 (-6.42)*
JA	-0.009 (-1.59)	-0.002 (-0.63)	0.006 (1.32)	0.008 (1.32)	0.003 (0.42)	0.004 (0.49)	-0.001 (-0.06)
X30	-0.014 (-1.91)	-0.012 (-2.41)**	-0.012 (-2.02)**	-0.011 (-1.51)	-0.009 (-1.03)	-0.014 (-1.24)	-0.034 (-2.37)**
INC	0.016 (-1.69)	0.008 (1.33)	0.008 (1.07)	0.010 (1.06)	0.010 (0.95)	0.006 (0.41)	0.027 (1.52)
DEC	0.007 (-0.72)	0.007 (1.10)	0.007 (0.91)	0.011 (1.22)	0.018 (1.63)	0.015 (1.05)	0.023 (1.30)
Y1 (2003)	0.026 (2.86)*	0.007 (1.20)	0.007 (0.92)	0.011 (1.18)	0.007 (0.64)	0.010 (0.71)	0.053 (3.09)*
Y2 (2004)	0.023 (2.32)**	0.005 (0.75)	0.008 (0.95)	0.009 (0.87)	0.008 (0.69)	0.015 (0.98)	0.057 (3.02)*
Y3 (2005)	0.004 -0.54	0.000 (-0.04)	0.000 (-0.03)	-0.005 (-0.60)	-0.019 (-1.91)	-0.032 (-2.49)**	-0.024 (-1.51)
Y4 (2006)	-0.004 (-0.46)	-0.005 (-1.04)	0.004 (0.64)	0.002 (0.24)	0.001 (0.07)	0.007 (0.55)	0.002 (0.11)
R² (%)	8.53	4.17	13.81	15.54	13.39	17.60	19.37
F-Test	3.31*	1.54	5.70*	6.69*	5.50*	7.59*	8.54*

Table 10: The Effect of Industries

Table 10 shows the regression results of extended model with industry dummies. The XMAN, XSER and XFIN represent manufacturing, services and finance industries respectively. The rest of the variables and explanations are given in table 8.

	Dependent Variables (CAR in the event window)						
	<i>[-5,-1]</i>	<i>[-2,-1]</i>	<i>[0,+1]</i>	<i>[0,+2]</i>	<i>[0,+4]</i>	<i>[0,+10]</i>	<i>[+0,+15]</i>
DPS	-0.001 (-0.87)	0.000 (-0.78)	-0.005 (-6.76)*	-0.007 (-7.17)*	-0.007 (-5.96)*	-0.010 (-6.72)*	-0.012 (-6.18)*
JA	-0.018 (-3.14)*	-0.006 (-1.69)	0.005 (1.21)	0.006 (1.08)	0.002 (0.29)	0.000 (0.03)	-0.017 (-1.49)
X30	-0.008 (-1.10)	-0.010 (-2.11)**	-0.013 (-2.06)**	-0.012 (-1.52)	-0.009 (-1.04)	-0.015 (-1.25)	-0.023 (-1.51)
INC	0.004 (0.39)	0.005 (0.81)	0.006 (0.87)	0.007 (0.82)	0.010 (0.92)	0.009 (0.66)	0.007 (0.40)
DEC	-0.003 (-0.36)	0.004 (0.62)	0.005 (0.64)	0.008 (0.90)	0.016 (1.50)	0.017 (1.17)	0.006 (0.35)
XMAN	-0.023 (-1.35)	-0.009 (-0.83)	0.028 (2.03)**	0.030 (1.73)	0.044 (2.16)**	0.005 (0.19)	-0.017 (-0.51)
XSER	-0.042 (-2.48)*	-0.019 (-1.70)	0.019 (1.42)	0.026 (1.53)	0.038 (1.89)	0.001 (0.05)	-0.042 (-1.26)
XFIN	-0.031 (-1.97)**	-0.018 (-1.72)	0.021 (1.61)	0.024 (1.53)	0.038 (2.01)**	-0.007 (-0.26)	-0.026 (-0.82)
R² (%)	6.22	4.17	14.43	15.54	12.09	13.49	19.37
F-Test	2.66*	1.74**	6.77*	7.38*	5.52*	6.26*	8.54*

Table 11: Main Determinant of Abnormal Returns

Table 11 shows the regression results of extended model with year and industry dummies. The rest of the variables and explanations are given in table 8,9 and 10.

	Dependent Variables (CAR in the event window)						
	<i>[-5,-1]</i>	<i>[-2,-1]</i>	<i>[0,+1]</i>	<i>[0,+2]</i>	<i>[0,+4]</i>	<i>[0,+10]</i>	<i>[+0,+15]</i>
DPS	-0.001 (-1.00)	-0.001 (-0.87)	-0.005 (-6.74)*	-0.007 (-7.19)*	-0.007 (-5.99)*	-0.010 (-6.81)*	-0.012 (-6.52)*
JA	-0.012 (-2.01)**	-0.004 (-1.03)	0.007 (1.39)	0.008 (1.44)	0.004 (0.62)	0.003 (0.37)	-0.003 (-0.28)
X30	-0.012 (-1.59)	-0.012 (-2.38)**	-0.013 (-2.11)**	-0.013 (-1.64)	-0.010 (-1.16)	-0.016 (-1.37)	-0.030 (-2.08)**
INC	0.015 (1.61)	0.009 (1.43)	0.008 (1.01)	0.010 (1.04)	0.010 (0.88)	0.008 (0.54)	0.025 (1.40)
DEC	0.007 (0.73)	0.007 (1.18)	0.006 (0.80)	0.011 (1.14)	0.017 (1.51)	0.016 (1.11)	0.023 (1.26)
XMAN	-0.024 (-1.42)	-0.009 (-0.85)	0.028 (1.99)	0.029 (1.70)	0.042 (2.09)**	0.002 (0.08)	-0.022 (-0.68)
XSER	-0.042 (-2.55)**	-0.019 (-1.71)	0.019 (1.40)	0.026 (1.51)	0.036 (1.84)	-0.001 (-0.04)	-0.046 (-1.42)
XFIN	-0.033 (-2.08)**	-0.018 (-1.76)	0.020 (1.59)	0.024 (1.50)	0.037 (1.97)**	-0.008 (-0.34)	-0.030 (-0.99)
Y1 (2003)	0.025 (2.85)*	0.007 (1.20)	0.007 (0.96)	0.011 (1.22)	0.007 (0.68)	0.010 (0.72)	0.053 (3.07)*
Y2 (2004)	0.023 (2.36)**	0.005 (0.79)	0.007 (0.87)	0.008 (0.81)	0.007 (0.61)	0.015 (0.99)	0.057 (3.02)*
Y3 (2005)	0.004 (0.51)	0.000 (-0.04)	0.000 (0.00)	-0.005 (-0.57)	-0.018 (-1.89)	-0.032 (-2.46)**	-0.024 (-1.53)
Y4 (2006)	-0.004 (-0.48)	-0.006 (-1.08)	0.004 (0.65)	0.002 (0.25)	0.001 (0.09)	0.007 (0.53)	0.002 (0.10)
R² (%)	10.82	5.83	14.94	16.61	14.59	17.84	20.1
F-Test	3.2*	1.64	4.64*	5.26*	4.51*	5.74*	6.65*

According to the results in table 8, 9, 10 and 11, there is again a significant negative relationship between *CAR* and *DPS* in the event windows after announcement day. The results indicate that the higher the cash dividend per share causes the higher negative abnormal return after the announcement. In the event window *[0,+1]* the coefficients of the *DPS* in both regression in table 8, 9, 10 and 11 is significant at 1%.

According to table 11, the coefficient of the *DPS* in [0,+2], [0,+4], [0,+10] and [0,+15] event windows are -0.007, -0.007 , -0.01 and -0.012 YTL respectively and all of them are significant at 1% level in both regression. The coefficients of *DPS* in the event windows prior to the announcement day are insignificant.

According to the results of regressions, the hypothesis 1 and 2, which state that there is no significant abnormal cumulative return around or just around the announcement of cash dividends are rejected. The hypothesis 3, which states that there is no significant abnormal cumulative return prior to the announcement of the cash dividends, is accepted. The hypothesis 4, which is formalised to test whether the joint announcement of the cash dividends with earnings/stock dividends do not make difference is accepted. The hypothesis 5 and 6 are accepted, in which whether the dividend increase and dividend decrease result in a significant abnormal return respectively. The last hypothesis also is accepted, which is formulised for testing whether being a top trading company makes a difference.

The results of regressions are nearly the same with each other except for R^2 values. Adding the cash dividends increase and decrease, the year and industry dummies do not change the results. In general, the results document that there is a strong negative relationship between the cash dividend per share and the abnormal return after the announcement of. In other words, the announcements of cash dividends are seen as a bad signal to the market.

7.3. Combining of Results and Interpretations

The result of the event study and regressions can be summarised together follows:

Firstly, there is a significant negative relationship between the cash dividend per share and abnormal returns after the announcement. The announcement of a higher cash dividend per share results in significant a higher negative abnormal return and the announcement of a lower cash dividend per share results in significant a lower negative abnormal return. Therefore, the cash dividend is price sensitive, inside and valuable information. Even the announcement of the cash dividends and other announcement are separated; the cash dividends have a significant individual effect on the price of share. In the event study, only the announcement of cash dividends decrease results in a significant positive abnormal return in the event after the announcement day.

Secondly, the results support the tax clientele effect hypothesis, since the capital gain is less taxed than the dividend yield in Turkey. Shareholders prefer the earnings to be retained in the firm in the favourable taxation of capital gain. The higher cash dividends lead the shareholders to pay more tax in the future; therefore they give a negative response by selling their shares. On the other hand, lower cash dividends lead to earning to be more retained and it suits the shareholder's tax preferences. The results do not support the studies of Batchelor and Orakcioglu (2003) in which they could not document a significant abnormal return around the announcement day of the cash dividends.

Thirdly, the adjustment of the price to information starts on the announcement day and it continues at least 15 days. The most significant price adjustment takes place in the first three days. It can be concluded that since 1993 the efficiency is increased in

the market, as Aydogan and Muradoglu (1998) document the price adjustment starts on day $t+1$.

Finally, there is no significant relationship between the cash dividends and abnormal returns prior to the announcement day. It documents that there is no significant information leakage prior to the information publicly available. It also document that the supervision of and regulation is efficient and effective to prevent use of insider information related to cash dividends.

8. CONCLUSIONS

The effect of the dividend on firm's share price is very crucial for not only the literature but also for the regulation and supervision of the capital market. Although it is still a puzzle whether the dividend has an effect on firm's value and share price, many capital market legal system accepted that the dividend is price sensitive information, and banned the insider dealing. However, Miller and Modigliani (1961) proposed that the dividend has no effect on value and capital structure of a firm under conditions of perfect capital market and non existence of taxes and three major thoughts tried to explain the relationship between the dividend change and firm's share price: The information-signalling theory, the free cash flow theory and the dividend clientele effect theory.

The information-signalling theory argues that changes in the dividend convey information about firm's future earnings. According to the free cash flow theory the dividend has information content in which the behaviour of managements will be more aligned with the interest of shareholders and managements are more likely to invest in projects which are positive net present value. The dividend clientele theory argues that some investors prefer earning to be paid out as dividend and other prefer earnings to be retained in the firm due to their tax.

There are very limited studies about this issue in emerging markets such as Turkey. The main researches about Turkey are used the data of around 1990's and generally did not use exact date for the announcement day. The data of this study is collected from ISE and the sample consists of last 5 years (2003-2007) data and 330 events of 88 companies. The traditional event study methodology and regression analysis is used to examine the announcement effect of cash dividends.

It is found that there is a significant negative relationship between the cash dividends per share and abnormal return after the announcement. Even the cash dividends and other announcements are separated; the cash dividends have a significant effect on the share price individually. In the event study, only the announcement of cash dividends decrease results in a significant positive abnormal return in the event after the announcement day.

The results support the tax clientele effect hypothesis. Furthermore, it is documented that the regulation and supervision is effective and efficient to prevent a significant information leakage prior to the announcement day. The efficiency of market has increased over time since the price adjustment starts at day zero and most significant adjustment takes place between day zero and day two.

Since this study only deals with cash dividends, a further study on stock dividend and stock repurchases should be done. Furthermore, information content of dividend should be tested by examining the relationship between the current dividend and future earnings.

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